Engaging in the Deliberative Policy Analysis Process for Water Justice in Canada

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From 2014 to 2017 the World Economic Forum (WEF) identified water-related illnesses as 1 of the top 5 global risks to human health (Adeel, 2017, p. 100).

Yet the war on science persists with threats to Canada's Water due to a lack of :

- Closing Canada's Ocean & Fisheries Library & ending Canada's Navigable Waters Protection Act
- Federal enforcement of Health Canada' Safe Water Quality Guidelines.
- Enforced provincial, territorial, and Aboriginal water regulations
- Canada's Fisheries Act
- Canadian Environmental Assessment Act
- Regulation & communication across municipalities, provincial, territorial, & Aboriginal watersheds (Mitchell, 2017, p. 26).

I argue that: Preventing water shortages & contamination exacerbated from climate change & population growth requires deliberation with stakeholders, businesses, & citizens over water policies (Bakker & Cook, 2011).

Prime Minister Trudeau promised Autumn that he would protect the water & this promise has made national headlines.

Deliberative policy analysis can make Trudeau's promise Canada's national water policy!

After the Walkerton crisis and the Kaschechewan First Nation evacuations, Canada's social consciousness is ***plagued with the moral question:***

"As a nation, have we done everything possible to prevent another crisis from water-related illnesses and deaths?" (Clancy, 2014).

Deliberative Policy Analysis (DPA) can be defined as a process in which policy analysts consider the: “stakeholders [and citizens’] value differences, dialogue, argumentation, & deliberation as major targets of analysis to determine a policy outcome (Li, 2015, p. 26) through the 3 models of DPA:

1. mediation and stakeholder group engagement,
2. citizens’ forums, or
3. citizens’ initiatives and referendums (Smith, 2003, p. 77).

This paper defends the urgency of Canada adopting a deliberative federal water policy that follows World Health Organization (WHO) water policy guidelines.

Canada’s adoption of WHO water quality guidelines will be supported by the case studies of other countries who have adopted the WHO water quality standards.

1. First, Canada’s current water policies will be examined,
2. second, Canada’s water policies will be compared with the WHO water policies.
3. Third, a deliberative national water policy will be synthesized through the conceptual framework of critical deliberative policy analysis through specific water management case studies from the, U.S., Italy and Brazil. Implications for future water policy practices under the guidelines of the WHO will conclude this paper.

Canada's Current Water Policies and the Abyss of Water-Related Health Problems

Drinking water management in Canada is complicated with a regionalized, three-tiered governance structure consisting of:

1. water sources,
2. treatment systems,
3. distribution systems.

(CCME 2004, as cited in Bereskie, & Rodriguez, 2017, p. 246)

Figure 1 -Structure of Drinking Water Governance in Canada

Fig. 1 Current structure of drinking water governance in Canada (CCME 2004; Kayser et al. 2015)

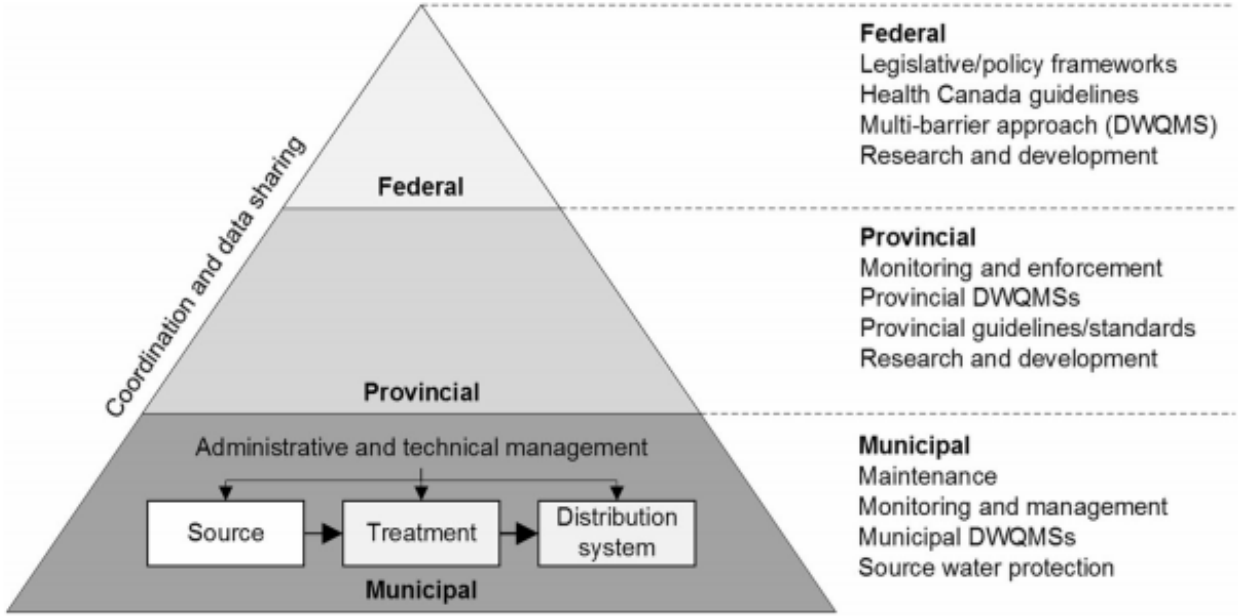

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Table 4 Applicable drinking water and source water protection legislation/policy, associated quality management frameworks, and other requirements (Hill et al. 2008; Dunn et al. 2014a, Bereskie et al. 2017a)

Province/territory and responsible ministries	Drinking water legislation/policy[a]	Source protection legislation/policy[b]	Drinking water management framework[c]	Legally binding drinking water standards[d]	Number of drinking water parameters used[e]	Required treatment[f]	Operator certification requirements[g]
Alberta (AB) • Alberta environment	• Standards and Guidelines for municipal waterworks, wastewater and storm drainage systems (1997) • Public Utilities Board Act (2000) • Water Act (2000) • Potable Water Regulation (2003)	• Water for life (Government of Alberta, 2003; Government of Alberta, 2008; Government of Alberta, 2009)	Alberta drinking water safety plan	Yes	72	Disinfection and filtration (for surface water and GUDI supplies)	Yes
British Columbia (BC) • Ministry of Environment • Ministry of Health Services	• Water Act (1996) • Water Regulation (1988) • Ground Water Protection Regulation (2004) • Water Protection Act (1996) • Water Utility Act (1996) • Drinking Water Protection Act (2001) • Drinking Water Protection Regulation (2003) • Water Sustainability Act (2016)	• Drinking Water Protection Act (2001) • Environmental Management Act (2003) • Water Sustainability Act (2016)	British Columbia Comprehensive Drinking Water Source-To-Tap Assessment	No	94	Disinfection	Yes
Manitoba (MB) • Manitoba Conservation • Manitoba Water Stewardship	• Water Rights Act (1987, 2005) • Ground Water and Water Wells Act (2001, 2003) • Drinking Water Safety Act (2002) • Water and Wastewater Facility Operators Regulation (2003) • Water Supply Commissions Act (2005)	• Environment Act (1987) • Water Protection Act (2005) • Nutrient Management Act (2008) • Livestock Manure and Mortalities Management Regulation (2008)	Manitoba Drinking Water Plan	Yes	94	Disinfection	Yes
New Brunswick (NB) • New Brunswick Environment • New Brunswick Natural Resources	• Municipalities Act (1973, 1981, 1995) • Public Utilities Act (1973) • Potable Water Regulation (1983) • Health Act (1988, 2005) • Water Act (1989, 1990, 1994, 2000, 2001, 2002)	• Clean Environment Act (1982) • Clean Water Act (2000) • Wellfield Protect Area Designation Order (2000) • Watershed Protected Area Designation Order (2001)	NA	No	94	NA	Yes
Newfoundland and Labrador (NL) • Department of Environment and Conservation	• Public Health Act (1996) • Municipalities Act (1999) • Water Resources Act (2002, 2003, 2004, 2005)	Water Resources Act (2002) • Environmental Protection Act (2002, 2005)	Newfoundland and Labrador Multi-barrier Strategic Action Plan	No	94	Disinfection	No
Nova Scotia (NS) • Nova Scotia Environment and Labor • Nova Scotia Natural Resources	• Municipal Government Act (2998, 2001, 2002, 2004) • Water and Wastewater Facilities and Public Drinking Water Supplies Regulations (2005)	• Water Resources Protection Act (2000) • Drinking Water Strategy (Government of Nova Scotia, 2002)	A Drinking Water Strategy for Nova Scotia	Yes (microbial, physical, and chemical) A esthetic parameters are not enforceable.	96	Disinfection and filtration	Yes
Ontario (ON) • Ministry of the Environment • Ministry of Natural Resources	• Municipal Water and Sewage Transfer Act (1997) • Safe Drinking Water Act (2002) • Sustainable Water and Sewage Systems Act (2002) • Ontario Clean Water Act (2006)	• Lakes and Rivers Improvement Act (1990) • Ontario Water Resources Act (2001) • Nutrient Management Act (2002) • Clean Water Act (2006)	Ontario Drinking Water Quality Management Standard	Yes	106	Disinfection and filtration	Yes
Prince Edward Island (PE) • Environment, Energy and Forestry	• Water and Sewerage Act (1988, 2003) • Environmental Protection Act (1988, 2005) • Water Wells Act (1988, 2004) • Water and Wastewater Facility Operating Regulations (2004)	• Environmental Protection Act (1988, 2005) • 10 Points to Purity (Government of Prince Edward Island, 2001) • Prince Edward Island Watershed Strategy (Government of Prince Edward Island, 2015)	Ten points to purity	No	94	NA	Yes
Quebec (QC) • Ministère du Développement durable, de l'Environnement et des Parcs	Public Health Act (2001) • Environmental Quality Act (2005) • Regulation respecting the quality of drinking water (2001)	Quebec Water Policy (Quebec Ministry of Environment, 2002) • Strategy of protection and conservation of water sources intended for human consumption (Government of Quebec, 2012) • Regulation for water intake and sources protection (Government of Quebec, 2014)	Quebec Water Policy/ Integrated Water Resources Management	Yes	83	Disinfection and filtration (above certain turbidity)	Yes

World Health Organization

UN-Water Global Assessment of Sanitation & Drinking-Water (GLAAS)

1. Be a resource for stakeholders to extend & sustain WASH services
2. Strengthen national processes to improve WASH status
3. Minimize data collection burdens & maximize existing data uses
4. Focus on areas where GLAAS is well-positioned for impacting other WASH actors
5. Ensure High quality data
6. Align with SDGs, & integration of SDG principles of universality & equity
7. Inclusive of different perspectives, national governments & development partners
8. Work with other sectors, education & health to learn from their experience

Focus Areas

World Health Organization

Enabling Environment[1]

- Access to information on what governments and development partners are doing to promote WASH allows for transparency, benchmarking and trend analysis
- GLAAS has played a unique role in monitoring the enabling environment for WASH since 2008
- GLAAS has a global reach – over 100 countries and over 25 external support agencies have participated

[1] The enabling environment refers to aspects of governance, monitoring, human resources and finance that are able to promote the delivery of WASH services.

Finance

- Understanding how much is spent on WASH by whom and for what is key to increasing spending efficiencies, improving targeting and mobilizing WASH resources
- GLAAS has shown that a lack of financial data often impedes decision-making
- GLAAS and TrackFin have been able to collect the most comprehensive and up-to-date data on WASH financing from countries and external support agencies

Sustainable Development Goals

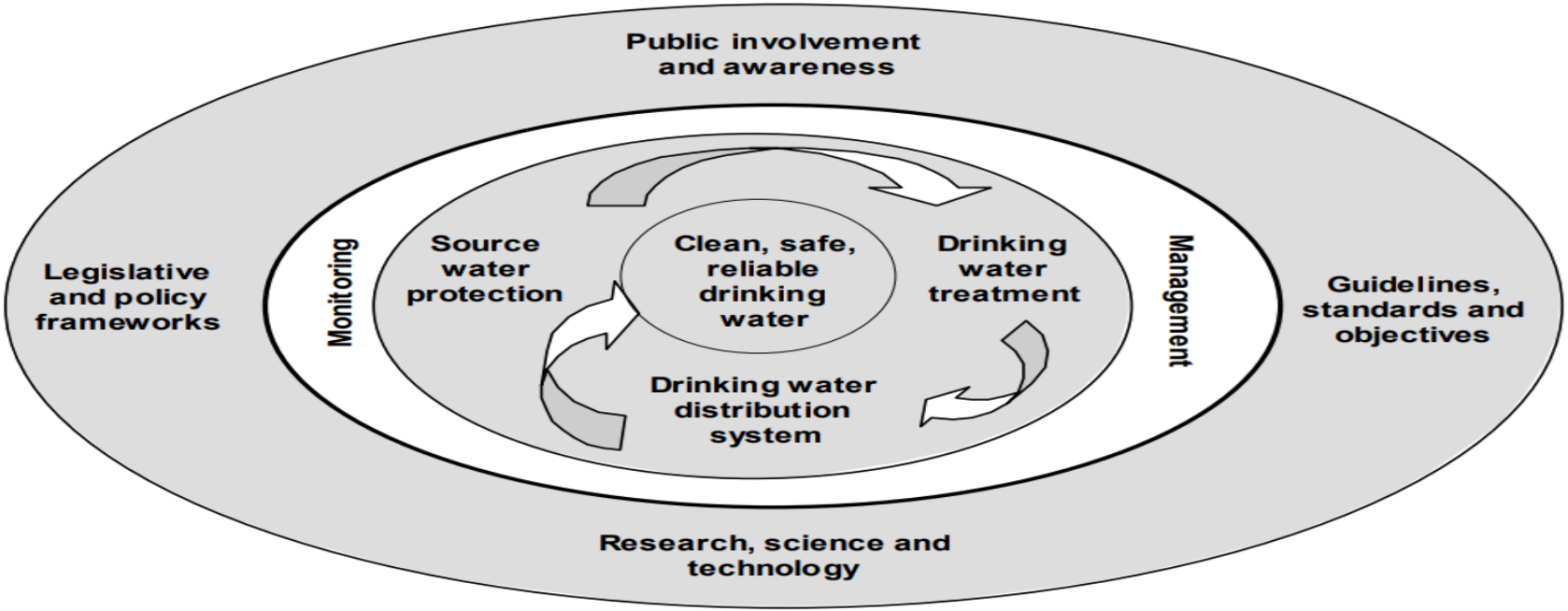
- Means of Implementation:
  With its history of monitoring the enabling environment, GLAAS is well-positioned to contribute to the SDGs
- Targets:
  As the SDGs are country-driven, monitoring countries' progress on achieving national targets will be key to assess progress towards achieving SDG 6

World Health Organization

Outputs

- Robust, comprehensive database on the WASH enabling environment, including finance, national targets, governance, monitoring and human resources
- Global, regional, country and thematic reports, highlights and briefs focused on WASH sector priorities that provide an evidence-base for partners and countries
- Contribution to better targeting and absorption of WASH funds by providing information on external support agency funding
- Information on national WASH targets classified into typologies, and national data on WASH coverage targets tracked to assess progress
- Contributions to the UN Secretary General SDG reports (data and storyline for 6.a and 6.b)
- GLAAS products and results aligned with global WASH sector priorities

Figure 2.1: Components of the multi-barrier approach



Canadian Council of Ministers of the Environment (CCME). (2002). *From Source to Tap: The multi-barrier approach to clean drinking water.* 16. Retrieved from http://www.hc-sc.gc.ca/ewh-semt/alt_formats/hecs-sesc/ pdf/water-eau/tap-source-robinet/tap-source-robinet-eng.pdf

The Mission of the WHO Water Safety Plan (WSP)

- Develop national access to safe drinking water sources from sustainable watersheds to support sanitation & hygiene (GLAAS, 2017).
- Canada currently assists rural communities with contaminated water through building & maintaining on-site water treatment facilities.
- The WHO WSP links water technicians with foreign water technicians to ensure that potential global contaminants do not flow into their watersheds.
- The solidarity of nations supporting the WHO WSP provides a global united front of water research, water protection strategies, & 24 hour online support for water emergencies (GLAAS, 2017).

- Health Canada (2014) publishes voluntary health-based guidelines for Canadian Drinking Water Quality (GCDWQ) as suggestions lacking legislation & are not legally enforced.

- Since 2011, only the Northwest Territories, had adopted 94 GCDWQ (Dunn & Harris, et al., 2015, p. 245).

- The European Union and the U.S. apply enforceable national standards with legal consequences supported by the states and provinces.

- Canada’s need for a national water policy is urgent!

SWOT Analysis of Canadian federal, provincial/territorial & municipal governance drinking water management structure

Fig. 4 SWOT analysis of the current Canadian federal, provincial/territorial, and municipal governance and drinking water management structure

	Strengths	Weaknesses
Federal	• Incorporates source protection, drinking water treatment, and the distribution network • Multiple barriers in place to prevent drinking water failures, including health-based water quality guidelines (i.e. GCDWQ)	• Broad general concepts with discrepancies among mandates and administration • Fragmentation across political boundaries • Lack of coordination between governance tiers • Low adoption rate of outdated/lenient GCDWQ • No legally binding enforcement/monitoring
Provincial & Territorial	• Freedom to incorporate drinking water management systems/elements given specific provincial/territorial needs and priorities • Some provinces have strong DWMSs in place	• Inadequate monitoring and enforcement • Lack of data sharing between provinces • Overlapping responsibilities within province/ territory
Municipal	• Ability for internal improvement • Easily changed organizational structures and/or daily procedures • Have direct communication with consumers	• Difficulty in evaluating performance • Lack of data sharing between municipalities • Lack of transparency for consumers • Generally more reactive than preventative
	Opportunities	**Threats**
Federal	• Opportunity for implementing federal supporting programs • Responsibilities on federal lands, in federal facilities, and in some First Nations communities	• Financial and human resource constraints • Tension between harmonization and subsidiarity • Water quality and quantity uncertainty into the future
Provincial & Territorial	• Most direct responsibility for drinking water management • Much room for improvement (legislative and management) with provincial/territorial freedom	• Economic pressure and market uncertainty • Provincial/territorial government pressure • Resistance to change and barriers to learning
Municipal	• Ability to coordinate with other municipalities • Ability to prioritize improvements • Directly accountable for drinking water quality and management of DWSS	• Aging infrastructure and limited financial resources • Limited financial and human resource availability • Un-trained or undertrained operators

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Resistance to National Water Policy

1. Trade relations with U.S. Transboundary Waters
2. Changes from Government to Governance
3. Conflicts with Stakeholders -Corporations
4. Indigenous Land Rights Supreme Court Ruling
5. Urgent Need for Authentic Dialogue!

Transboundary U.S. Farmed Fish Infect B.C. Waters

Current with Anna Maria Tremonti.CBC Tavish Campbell

Flood/ Water Related illnesses

Kashechewan First Nations, Ontario

Potlotek First Nation, Cape Breton

MacPhee, , N.J. (2016). Cape Breton's Potlotek First Nation protests dirty water: Thick, black liquid pouring out of taps at the Cape Breton reserve. **CBC News** Paling, E. (2016). Kashechewan First Nation's Children at Front and Centre of Recurrent Crisis. *The Huffington Post Canada*.

Collaborative Policymaking through Authentic Dialogue

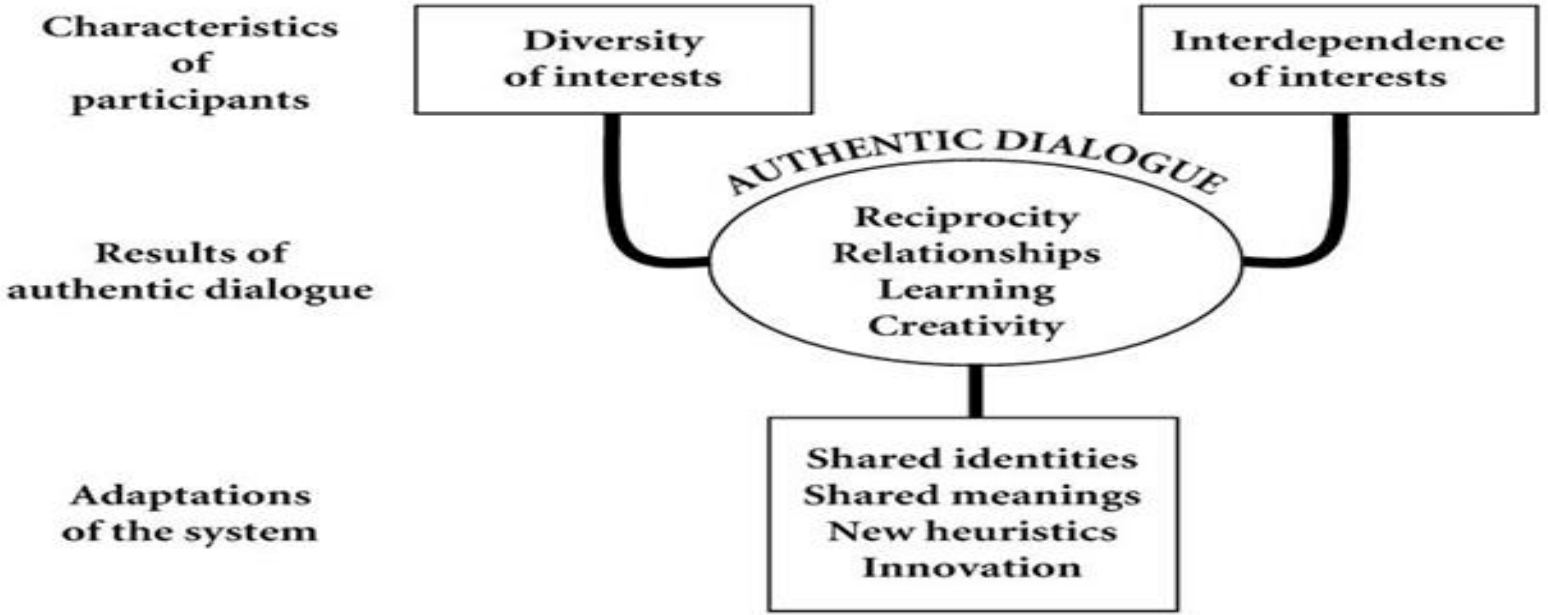


Figure 1.1 DIAD network dynamics

Hajer, M. A., & Wagenaar, H. (2003). Collaborative policymaking. *Deliberative policy analysis: understanding governance in the network society*. Cambridge, UK: Cambridge University Press. (39).

Double-Loop Learning

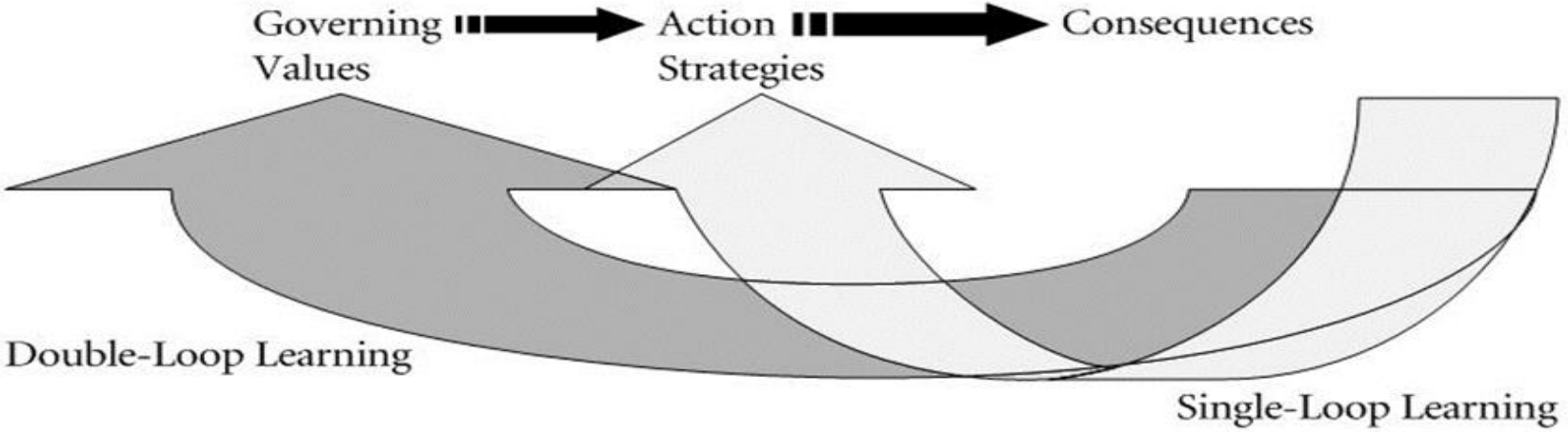
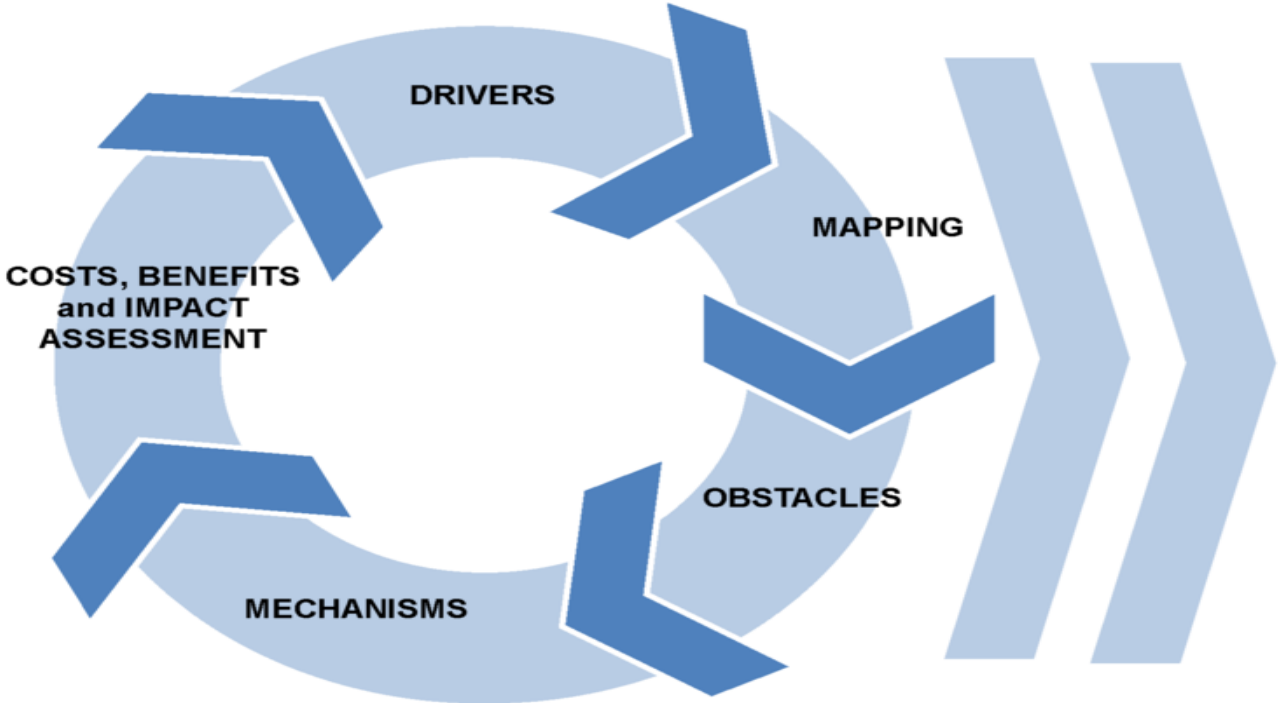


Figure 1.2 Learning in collaborative planning
Source: Argyris 1993.

Hajer, M. A., & Wagenaar, H. (2003). Collaborative policymaking. *Deliberative policy analysis: understanding governance in the network society.* Cambridge, UK: Cambridge University Press. (p. 45).

Framework for Stakeholder Engagement

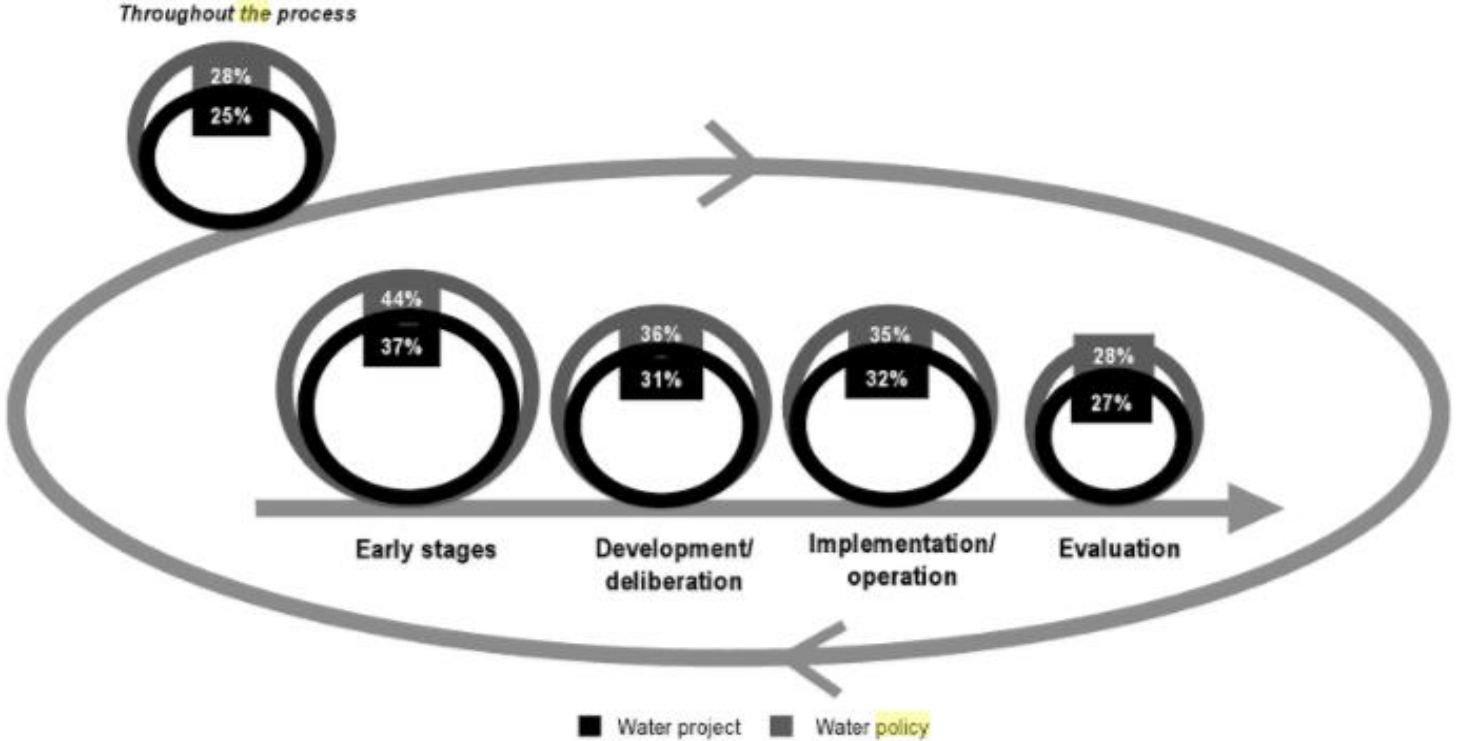


Organisation for Economic Co-operation & Development (OECD)

FRAMEWORK CONDITIONS, CHECKLIST AND SELECT INDICATORS FOR INCLUSIVE WATER GOVERNANCE

Akhmouch, A. & Clavreul, D. (2016). Stakeholder Engagement for Inclusive Water Governance: "Practicing What We Preach" with the OECD Water Governance Initiative. *Water*, *8*, (204), 5.

Involvement of stakeholders across stages of policy/project cycle



OECD, (2015). Stakeholder Engagement Mechanisms in the Water Sector, in OECD. (2015). *Stakeholder Engagement for Inclusive Water Governance*, OECD Studies on Water, OECD Publishing, Paris.

Chris Ballard Minister of the Environment Ontario

- Engages citizens on climate change, through utilizing their input to transform carbon taxes into energy saving incentives and affordable renewable energy programs (De Souza, 2017, para. 11).

- We can make positive actions on provincial and municipal levels by learning from California and Ontario (De Souza, 2017, para. 11).

- Canada's federal engagement in mixed methods stakeholder research inspires authentic dialogue to bring corporate stakeholders & Indigenous peoples into negotiation through deliberative policy analysis processes.

https://youtu.be/Fz4kzEGOMNE

Lytton First Nation installed a water treatment plant by UBC Indigenous students & RES'EAU-WaterNET,

Fort Severn Chief Paul Burke with Water Quality Monitoring Equipment from the Safe Water Project in Ontario

3-E's of Citizenship Sustainability: Equity, Environment & Economy & Peace, Order, Good Government (POGG)

"An environmentalist sees an environmental problem and says, 'Let's regulate it!' An entrepreneur sees an environmental problem and says 'How can I make money by solving it?" (Keilbach, 2009, p. 294). They collaborate for equity in the environment & economy.

The Forum for Leadership on Water (FLOW) identifies 7 priorities for federal action:

1. creating a federal water strategy;
2. prioritizing water in assessments from the impacts of energy production;
3. ensuring clean drinking water through legally enforceable drinking water standards;
4. recognizing Aboriginal water rights;
5. enforcing water protection laws
6. fostering water conservation,
7. supporting transboundary water governance; & expanding the federal government's role in water science.

(Morris et al., 2007, as cited in Bakker & Cook, 2011, p. 281)

Reinstating Canada's Navigable Waters Act can protect Canada's waters from transboundary pollution and foreign farmed fish.

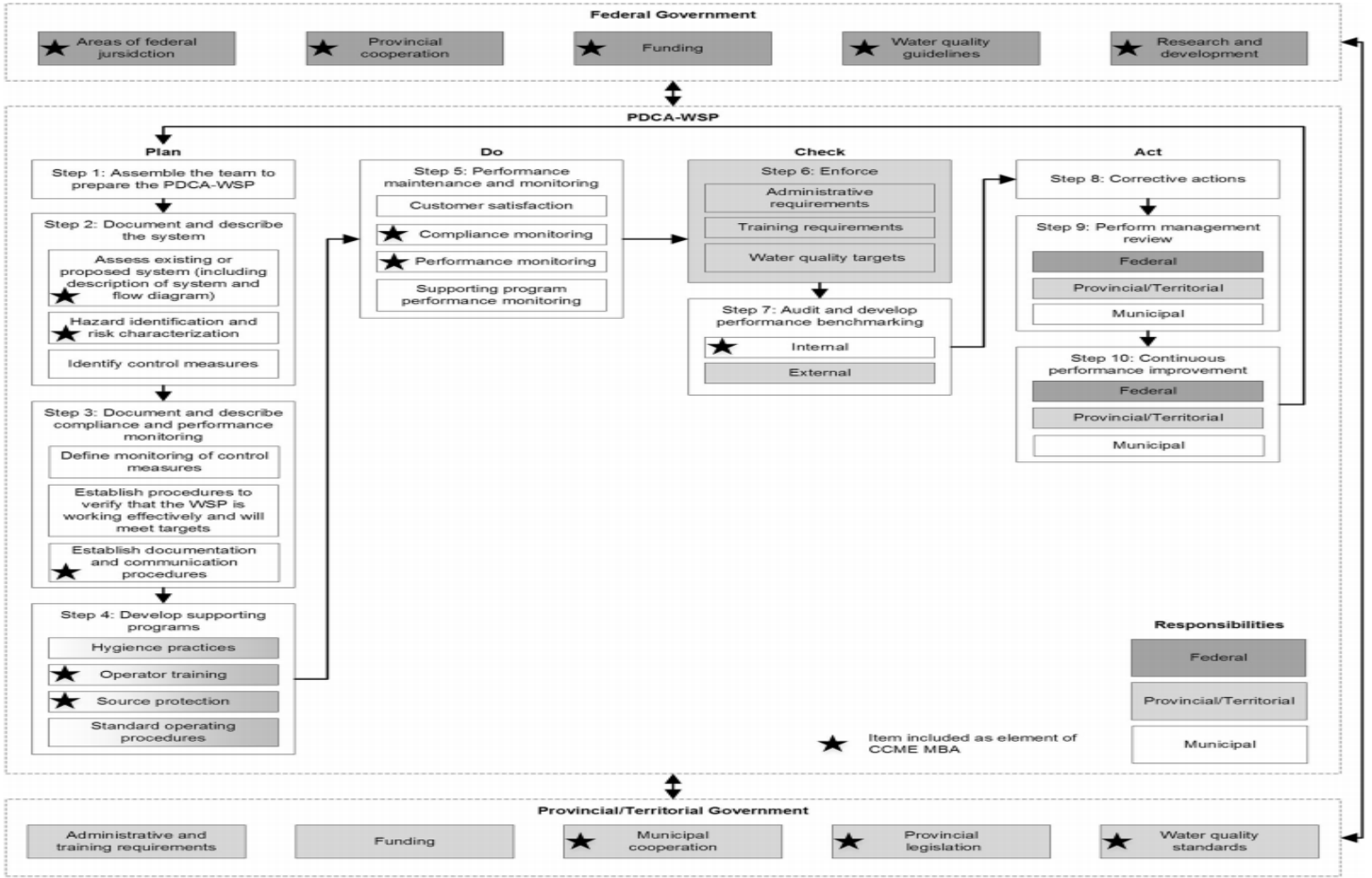


Fig. 6 Proposed PDCA-WSP framework for drinking water management in Canada

Federal Water strategy following WHO Standards with Provincial, Territorial and First Nations' Policies

- The provinces, territories, municipalities and Aboriginal communities can be collaborated with to determine and improve the enforcement of the water governance policies in Canada.

- Recent water governance initiatives have the potential to make significant changes.

- In order to protect the rights of the people directly impacted by these policies, the creation of these policies should be deliberative processes to allow for true participation by engaged citizens (Bakker & Cook, 2011, p. 287).

WHO, OECD, Stakeholders & Canada

- A mixed methods approach of quantitative data & qualitative data across the policy project cycle can encourage key stakeholders to invest in communities & replenish their watersheds.

- The WHO water quality standards and the OECD environmental performance evaluations can educate businesses on ecosystem management and water conservation while enhancing their moral reputation.

- Information acquired could then be analyzed to tailor the framework to the unique governance structure and environmental factors impacting the diverse ecosystems throughout Canada. https://canadians.org/nestle

The deliberative policy processes of
citizen forums,
mediation,
stakeholder engagement and
referendums can co-create collective reciprocity strengthening Canada as a unified nation. Through the ebb and flow of authentic dialogue the conservation of Canada's sacred waters are Canadians' responsibility of stewardship that they all mutually understand, so they will stand on guard for Canada's waters through deliberative policy analysis processes.

P.M. Justin Trudeau's national promise to protect Canada's waters can become a national water policy flowing with justice and "righteousness like a mighty stream!" (King, 1963, p. 4).

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