



Article title: Decolonizing Canadian Water Policy: Lessons From Indigenous Case Studies

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Decolonizing Canadian Water Governance: *Lessons from Indigenous Case Studies*

Abstract

Meaningful lessons about decolonizing water infrastructure (social, economic and political) can be learned if we scrutinize existing governance principles such as the ones provided by the *Organization for Economic Cooperation and Development (OECD) Principles on Water Governance* (OECD, 2021). Instead of using *only* Western frameworks to think about policy within Indigenous spheres of water, sanitation and hygiene (WaSH), the Government of Canada can look to Indigenous ways of knowing to compliment their understanding of how to govern areas of WaSH efficiently. In this paper, the term *Indigenous* encompasses First Nations, Inuit and Métis populations (Hanrahan & Hudson, 2014; Blaser, 2012). I present this paper as *a* step out of many toward decolonizing water governance in Canada. I hope to have shown in this paper that it is necessary to make space for other voices in water governance. By highlighting the dangers in the Case Studies, three lessons are apparent in this paper: 1. There needs to be an addition of Indigenous Two-Eyed Seeing in water governance; 2. Canada must strengthen its nation-to-nation praxis with Indigenous communities; and 3. There needs to be a creation of space in WaSH that fosters Indigenous voices. This is necessary such that there can be equal participation in policy conversations to mitigate existing problems and explore new possibilities.

Key Words:

Decolonization, Water, Policy, Indigenous, Ethics

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Abbreviations

WaSH – Water, Sanitation and Hygiene

OECD – Organization for Economic Cooperation and Development

PWDU – Portable Water Dispensing Unit

UNIR – Unama'ki Institute of Natural Resources

UNDRIP – United Nations Declaration on the Rights of Indigenous Peoples

OEEC – Organization for European Economic Cooperation

Introduction

Meaningful lessons about decolonizing water infrastructure (social, economic and political) can be learned if we scrutinize existing governance principles such as the ones provided by the *Organization for Economic Cooperation and Development (OECD) Principles on Water Governance* (OECD, 2021).ⁱ Instead of using *only* Western frameworks to think about policy within Indigenous spheres of water, sanitation and hygiene (WaSH), the Government of Canada can look to Indigenous ways of knowing to compliment their understanding of how to govern areas of WaSH efficiently.ⁱⁱ For the purposes of this paper, the term *Indigenous* encompasses First Nations, Inuit and Métis populations (Hanrahan & Hudson, 2014; Blaser, 2012; Metallic, 2022).ⁱⁱⁱ

While Indigenous communities in Canada make up approximately 4.3% of the overall population, they unfortunately face a large proportion of the water crises in Canada. (Hanrahan & Hudson, 2014). According to the Auditor General of Canada, one in five Indigenous communities are under “water advisories” (meaning the water is not safe for use) and “more than half of water systems in the lands reserved for Indigenous people posed a medium or high risk” (Hanrahan & Hudson, 2014; Auditor General, 2011). The above comments have resulted in Canada’s Indigenous land reserves to be compared to Low-to-Middle-Income Countries (Hanrahan & Hudson, 2014).

I argue that the problems within water governance, in Indigenous spheres, are due to colonialization. Rosie Simms et al. (2016) points out that existing issues in WaSH are systemic and due to supposed provincial and federal government ownership over all water in the Canada (Simms et al., 6, 2016).^{iv} The Federal and Provincial governments laying claim to water trivializes the “ethic of responsibility” that many Indigenous populations adhere to when interacting with water (McGregor, 2014). Deborah McGregor (2014) argues that “the major strength of First Nations involvement and input [in water governance] is the consideration of values, ethics and knowledge that provide a holistic understanding of water” (clarification added; McGregor, 499, 2014). A similar sentiment is issued by Simms et al. (2016) who write that many Indigenous communities view water as something that is spiritual, medical and the “life-blood of the land” (Simms et al, 2016). Rather than reframe existing water governance principles using Western methodologies in areas of WaSH, there must be equal participation of Indigenous expertise and ways of knowing such that altered principles can be adhered to by all transparently.

This paper aims to critique two of the 12 OECD *Principles on Water Governance* that the Government of Canada supports in order to promote decolonization within Canadian water governance.^v In section 1, I will first give an overview of the OECD Principles and the Indigenous research methodology of Two-Eyed Seeing. In section 2, I will introduce three case studies from three separate categories of Indigenous organization across Canada. Section 3 will end on an emancipatory note that will serve as a way of critiquing two of the OECD Principles.

1. Thinking Otherwise: Re-Examining the OECD Principles of Water Governance

1.1 History of the OECD and Water Colonialism

The history of the OECD starts at the end of World War II, when the *Organization for European Economic Cooperation* (OEEC) was conceived in 1948 (Taylor et al., 2019). In 1960, the OEEC extended into North America, when Canada and the United States joined, and to Australasia, when New Zealand and Australia joined (Taylor et al., 2019). This is important to

note as those four countries are often linked with British imperialism and hence the mitigation and termination of Indigenous and Aboriginal epistemes in North America and Australasia respectively (Taylor et al., 2019). The creation of the OEEC and subsequent development of the OECD after membership extended outside of Europe, are linked to colonialism. The kind of colonialism important in the context of this paper is termed *water colonialism* (Taylor et al., 2019). Water colonialism includes the “dispossession, denial or erasure, of Indigenous peoples’ management and water diversion, pollution of water as a result of states activities, destruction of water places, and inadequate drinking water and sanitation service delivery” (Taylor et al., 5, 2019).

Water colonialism is in contest with the mission of other UN organizations such as the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP). UNDRIP urges states to recognize the rights of Indigenous peoples in membership countries. In the context of water, UNDRIP recognizes that Indigenous groups’ claim to water is “substantial” and that “Indigenous peoples have the right to their own water laws, systems of water governance, and institutions, consistent with their own frameworks for water management” (Taylor et al., 5, 2019). As such, decolonization of water governance in OECD membership countries is paramount to the recognition of Indigenous rights.

1.2 OECD Principles

Instituted in 2009 by the OECD, a multi-national governmental organization dedicated to economic policy, the OECD Principles on Water Governance were created to “identify and help governments, at all levels, bridge critical governance gaps in the design and implementation of their water policies” (Akhmouch et al, 5-6, 2018). The OECD Principles focus on the “economic analysis” and “best practices” of governing water in various countries, utilizing language that is antithetical to Indigenous ways of perceiving and acting with water (Akhmouch et al, 2018). The OECD’s consideration of “territorial development” positions water management *not* as an environmental issue, but one of economics (Akhmouch et al, 2018).^{vi}

The OECD principles are promoted as an analytic tool that countries can use to formulate “neutral and flexible” solutions to water policy (Taylor et al., 2019). Emphasising the neutrality of the OECD principles is important as they are promoted as place-based and context dependent (Taylor et al., 2019). Therefore, while a country can use these principles as a guiding framework for how to deal with water governance, they must be scrutinized if they are to be used effectively in context-specific settings. It is important to note that the OECD Principles on Water Governance stand on three pillars:

1. Effectiveness: A straightforward pillar that asks whether the Principles on Water Governance are effective or not in a government’s strategic layout of water policy (Akhmouch et al., 2018).

2. Efficiency: This pillar states that an efficient water plan comes to the least cost for a society (Akhmouch et al, 2018). However, when there are two opposing ideals at play – water as an economic resource and water as lifeblood – it is hard to consider who is supposed to endure the least costs. If both societies (the colonized and the dominant) are to share equal costs, it is unclear from the principles how that is supposed to happen.

3. Trust and Engagement: The governments that employ the OECD Principles (including Canada), must build confidence and be inclusive with stakeholders (Akhmouch et al, 2018).

Governments must act with integrity while monitoring, evaluating and adjusting water governance “when needed” (Akhmouch et al., 9 & 11, 2018).

One way to achieve the goals of the OECD pillars is to include alternative ways of knowing in the conversations that shape policy. One alternative way of knowing within Indigenous research is the methodology of Two-Eyed Seeing. Two-Eyed Seeing can help evaluate at least two of the 12 OECD Principles. Specifically, I will look at Principles Four and Nine:

Principle Four: “Adapt the level of capacity of responsible authorities to the complexity of water challenges to be met, and to the set of competencies required to carry out their duties” (OECD, 2021).

Principle Nine: “Mainstream integrity and transparency practices across water policies, water institutions and water governance frameworks for greater accountability and trust in decision-making” (OECD, 2021).

Principles Four and Nine are the most urgent to be critiqued. As will be shown below in the Case Studies that are examined, there are serious gaps in trust between Indigenous and non-Indigenous communities. There is also a lack of understanding regarding the complexities surrounding areas of WaSH in Indigenous communities that Provincial Governments have yet to address efficiently. Principles Four and Nine have an added importance as they point to the problematic notion of incommensurability in policy studies that is put forward in Laurence Tribe’s paper *Ways Not to Think About Plastic Trees* (Tribe, 1974). Ethical considerations such as trust, integrity, and other kinds of value-laden competencies are not easily enumerated and so are often thrown to the wayside in policy-making as subjective interferences. Tribe characterizes these kinds of incommensurables as “fuzzy” or “fragile” and possibly problematic for policymakers that rely on “objective” (i.e., numeric) data to make policy decisions (Tribe, 1974). However, relying on *objective* data is problematic for Indigenous communities, as spirituality linked to water, land, and other natural resources cannot be easily quantified in a way that is meaningful for policy-makers. Therefore, it is prudent to question governments that utilize the OECD as an analytic tool to truly conceive of responsible authority and act with trust and integrity in water governance in a way that is beneficial to Indigenous communities. Tribe argues that, “we must therefore develop a new group of professionals sensitive to the sorts of values and issues that analyses currently tend to slight-diversity, balance, aesthetic quality, reversibility, the claims of the future-and adept at modeling policy impacts in terms of such values.” (Tribe, 1321, 1974). This claim is hasty: we do not need a group of new professionals to reckon with these non-commensurable values. Rather, we should look to community stakeholders and learn from their own knowledges to inform more robust policymaking.^{vii} One such way to do this is by incorporating Indigenous research methods such as Two-Eyed Seeing.

1.2 Two-Eyed Seeing

To mitigate the lack of understanding about Indigenous water issues in areas of governance and to foster trust between Settler and Indigenous communities, it is prudent that governments utilize an Indigenous research methodology such as Two-Eyed Seeing. Two-Eyed Seeing (*Etuaptmunk* in Mi’kmaw) was conceptualized by Mi’kmaw Elder Dr. Albert Marshall (Reid et al., 2020).^{viii} Two-Eyed seeing is a “model of knowledge” that promotes the utilization of both Western and Indigenous ways of knowing (Reid et al., 2020; Arsenault et al., 2018).^{ix} Corroborated by McGregor, Andrea Reid and colleagues state that central to Two-Eyed Seeing is an idea of

Netukulimk, or an ethic of responsibility (McGregor, 2014; Reid et al., 2020). Water scholars, practitioners and policy-makers *must* pay attention to the potential harms of current practices and policies, and how they can possibly impact future generations. Within Two-Eyed Seeing there are two principles that are adhered to:

1. “Learn from one eye with the strengths of Indigenous knowledge and ways of knowing” (Arsenault et al., 4, 2018).

2. “From the other eye with the strength of Western knowledges and ways of knowing” (Arsenault et al., 4, 2018).

As noted by Reid et al., (2020), it is not a question of “*whether*” Two-Eyed Seeing can be utilized in areas of WaSH: it is a question of how governments can transform and shape their policies to recognize Indigenous methodologies as legitimate (Reid et al., 2020; Lawless et al., 2013). In other words, how can we apply Indigenous Two-Eyed Seeing to Canadian water governance practices? The next section will address this question by examining three Case Studies.

2. Toward Decolonization

Here I will briefly refer to three Case Studies, taken from existing literature, that explain opportunities to fill water policy gaps within various levels of Indigenous organization across Canada. Once the Case Studies have been explained, it will be made clear how water governance in Canada can move toward decolonization.

2.1: Key Developments in Canadian Policy and Legislation with Respect to First Nations Drinking Water Quality from 2003-2013 (McGregor, 2014)

In 2003, the Government of Canada announced that it would create a *First Nations Water Strategy* (McGregor, 2014). The Strategy would aim to utilize resources that could improve “the safety of water supplies in First Nations communities” (McGregor, 503, 2014). By 2008 it was evident that the Strategy failed and there were many issues that still needed to be solved (McGregor, 2014). In 2010, the Government of Canada passed Bill 5-31 titled *An Act Respecting the Safety of Drinking Water* (McGregor, 2014). Bill 5-31 was promptly rejected by the Chiefs of Ontario (McGregor, 2014). Bill 5-8, a revision of Bill 5-31, claimed that the Federal Government would not “abrogate or derogate from any existing Aboriginal or Treaty rights of the Aboriginal people of Canada under Section 35 of the *Constitution Act, 1982*... except to the extent necessary to ensure the safety of drinking water on First Nations land” (McGregor, 504, 2014).^x Bill 5-8 was rejected. In June of 2013, the Federal Government brought forward the *Safe Drinking Water for First Nations Act* (McGregor, 2014). The Act suggests that all water, whether on Indigenous or non-Indigenous land, should be of equal quality (McGregor, 2014). The Chiefs of Ontario noted that there are problems with the Act insofar that the Federal Government did not provide sufficient funding for water infrastructure to First Nations communities. Since this Act is a Senate Bill, there was no funding attached (Koch Thornton LLP, 2019). Therefore, there are actually no supplies given to increase the capacity of drinking water – there are only ideas and possible financial stress to realize the goals of the Act. Further, there are potential concerns about Treaty rights being ignored (McGregor, 2014). For example, in a consultation done by *Koch Thornton LLP*, it was suggested that even if current governments act in accordance with Chiefs, this does not mean that other, future governments, will do the same: “Even in a best-case scenario where regulations are developed in full collaboration and implementation assigned to First Nation bodies, the fact that

the statute itself has no structure means a future government can purport to re-assign authority and re-write the rules of engagement without debate or consultation” (Koch Thornton LLP, 2019). This is problematic and is emblematic of the problem of non-commensurable values mentioned earlier. If Government A respects First Nations peoples’ rights to water governance, it is not the case that Government B will. Since the Federal Government, in the case of the *Safe Drinking Water Act* can override past Treaty agreements under the guise of protection it is hard to conceive of *Safe Drinking Water Act* as being entirely beneficial for Indigenous communities. In reconciling this case, the Federal Government can look to New Zealand and their treatment of Te Awa Tupua and the *Whanganui River Act*, where

The innovative dreams and actions of the iwi (tribes) at the heart of these places—Whanganui Iwi and Ngāi Tahu—along with the Crown, are positively transformative landmarks for us as a nation. These statutes, and other Treaty of Waitangi settlement statutes, endorse Māori tribal visions for knowing and caring for lands and waters and reassert a founding place for tikanga Māori (Māori law) for guiding regional natural resource governance and management (Ruru, 2018).

Within Māori law, similar to First Nations law, there is an ethic of responsibility to “do things in the ‘right’ way” (Ruru, 2018). One example of acting in the ‘right’ way with water is not mixing human waste and drinking water (Ruru, 2018). As such, in respecting the Māori and giving rights to the water, the Crown in New Zealand have conceived of the human-water relationship in a way that the Government of Canada has failed to do.

2.2: *Chiefs of Ontario 2008 Water Declaration of the Anishinaabek, Mushkegowuk, and Onkinehonwe (Arsenault et al., 2018)*

Frustrated by Provincial and Federal government’s governance of the Great Lakes, the Chiefs of Ontario sought to change existing policy (Arsenault et al., 2018). The Chiefs of Ontario attacked policy at three different levels: 1) International – *Great Lakes Water Quality Agreement*; 2) National – *Canada-Ontario Agreement Respecting the Great Lakes Water Quality Agreement*; and 3) Provincial – *Great Lakes Strategy and Great Lakes Protection Act* (Arsenault et al., 2018). In 2008, after years of deliberation amongst Indigenous Elders, the Chiefs of Ontario presented the *Water Declaration of the Anishinaabek, Mushkegowuk, and Onkwehonwe* (Arsenault et al., 2018). The Declaration, which emphasises Indigenous ways of knowing, “resulted in recognition of Traditional Knowledge in the *Great Lakes Protection Act, 2015*” (Arsenault et al., 2018). The purpose of the *Great Lakes Protect Act* is two-fold: to restore the ecological health of the Great Lakes-St. Lawrence River Basin and to increase community participation in ecological restoration (Great Lakes Protection Act, 2015). The Act also declares: “For greater certainty, nothing in this Act shall be construed so as to abrogate or derogate from the protection provided for the existing aboriginal and treaty rights of the aboriginal peoples of Canada as recognized and affirmed in section 35 of the *Constitution Act, 1982*.” (Great Lakes Protection Act, 2015). The goal of the Act, then, is to respect the rights of the First Nations communities that live in the surrounding Great Lakes area without infringing on past treaty rights. Further, the Chiefs of Ontario created the *Great Lakes Guardian Council*, a group of Indigenous and Western peoples who inform Great Lake policy in both Canada and the United States (Arsenault et al., 2018). During the inaugural meeting of the *Great Lakes Guardian Council* in 2016, the group recognized that “Indigenous perspectives on what is needed to protect and restore the water. The gifts, tools and skills that each person at the Council meeting brings to the table were acknowledged. Great Lakes restoration was described

as a cross-cultural effort” (Government of Ontario, 2016). This recognition is reflective of Two-Eyed Seeing, in that members of the *Great Lakes Guardian Council* come from a variety of nations (e.g., M’Chigeeng First Nation, Anishinabek Nation, Mississaugas of the New Credit First Nation, Chippewas of the Thames First Nation, Settlers) and industry backgrounds (e.g., Ministry of Transportation, Ministry of Environment, McMaster University, Ministry of Energy, Ontario Ministry of Municipal Affairs and Housing). The ways in which members have come to understand and be in relation with water is representative of both Indigenous and Western ways of knowing. Heightened success came in 2017 when the Government of Canada dedicated funding to create a *Great Lakes Indigenous Fund* – an initiative to support Indigenous community-based knowledge praxis to help “protect the Great Lakes” (Arsenault et al., 2018). Institutions not associated with Indigenous nations and provincial governments are unable to get funding from the *Great Lakes Indigenous Fund*. However, worries arise since the decisions for projects to be selected for funding come from *Environment and Climate Change Canada*, a Crown organization (Government of Canada, 2022).

2.3: *The Community of Black Tickle, Newfoundland and Labrador (Hanrahan & Hudson, 2014)*

The community of Black Tickle, Newfoundland and Labrador is an Indigenous land reserve created by the Government of Newfoundland and Labrador as part of their plan to centralize and resettle Indigenous communities (Hanrahan & Hudson, 2014). Without robust water infrastructure such as pipes and clean drinking water, the community relies on a Portable Water Dispensing Unit (PWDU) (Hanrahan & Hudson, 2014).^{xi} The cost of the PWDU, ~2\$/L, makes it inaccessible to many low-income community members (Hanrahan & Hudson, 2014). Distrust of the PWDU rose in the community due to its proximity to a cherished brook and the lack of funds provided by the government to sustain it (Hanrahan & Hudson, 2014). The poor placement of the PWDU means that residents often have to travel by vehicle to reach their water resource – minimizing accessibility for people who cannot walk long distances (~1-2km) (Hanrahan & Hudson, 2014). Many of the residents in Black Tickle have turned to making their own water wells instead of using the PWDU. However, these wells often become contaminated with animal waste or buried in large snow-falls (Hanrahan & Hudson, 2014). The failure to address water policy concerns created immeasurable negative public health outcomes. In 2014, after a request to the Government of Newfoundland and Labrador to fix the water infrastructure issues, residents were told they needed to put forward 30% of the overall costs (8601.77\$) and the province would put forward 70% (20,070.69\$) (Hanrahan & Hudson, 2014). The province’s 70/30 cost split was inconceivable for the residents as many are of lower socioeconomic status – barely able to afford the water in the PWDU (Hanrahan & Hudson, 2014). Much to the chagrin of the Black Tickle residents, the citizens of Pigeon Cove, a nearby non-Indigenous community, received 100,000\$ in funding when it was found out that their water pipes were contaminated during a similar time period (Hanrahan & Hudson, 2014). Appreciating these three Case Studies, an analysis can be done to provide a call-to-action to decolonize water.

3. Call to Action

Yates et al. (2017) note that in Canada, “[Indigenous] Elders felt current government initiatives around water to be limited and short sighted. When we consider water, one must consider all that water supports and all that supports water” (clarification added; Yates et al, 803, 2017). Instrumental to my paper has been an ethic of responsibility and recognition. In the above Case Studies, there were few instances where Indigenous peoples achieved respect or recognition

in water governance.^{xii} Instances of secured respect for Indigenous communities came after self-advocation and preservation from Elders. If we ought to understand Indigenous communities as having a right to autonomous action and recognition, then it necessary to embrace their perspectives. To explain how Indigenous perspectives could enhance water policy, I will critique OECD Principles Nine and Four using the above Case Studies.

3.1: Principle Nine

Residents of Black Tickle suffered after attempting to advocate for their survival – lacking funds to meet the province of Newfoundland and Labrador’s demands. According to the Unama’ki Institute of Natural Resources (UINR), “Netukulimk [the ethic of responsibility] is achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity, or productivity of our environment” (UINR, 2021). The Government of Newfoundland and Labrador, splitting the cost of repairing water infrastructure, denied the community of Black Tickle an ethic of responsibility. The Government of Newfoundland and Labrador increased the tension that exists between Settlers and Indigenous nations by providing a non-Indigenous community 100,000\$. Black Tickle residents, resorting to creating wells in the ground, harmed community nutrition and economic well-being. The community of Black Tickle showcases a fundamental flaw in Principle Nine of the OECD. The Government of Newfoundland and Labrador, maintaining a division of respect between how it treats Indigenous and non-Indigenous communities, has shown a lack of “trust in decision making” (OECD, 2021).

The Case Studies in Sections 2.1 and 2.3 show that there is a prominent distrust insofar that the Chiefs of Ontario believe the Government of Canada lacks the foresight to adhere to Treaty Rights. Shortage of trust is prominent in Section 2.3 insofar that the Province of Newfoundland and Labrador built a PDWU near a water resource that is cherished by the community of Black Tickle. Ignoring socio-cultural inferences from the community that you are working with (i.e., learning what the community views as important with respect to their cultural values), is in direct violation of an ethic of responsibility and respect. Learning what the community values when making water policy would be supported by the pillars of the OECD which foster trust and engagement. This problematic speaks to the issue of non-commensurability highlighted at the beginning of the paper. If policymakers cannot understand non-numerical values, then there is a question of whether they can adequately govern water or other natural resources effectively.

3.2: Principle Four

It is not obvious that non-Indigenous government authorities have the capacity to meet complex water governance challenges in Indigenous spheres. To meet the goals of Principle Four, a government must be able to work with all of its members. For example, Section 2.1 shows the incompetence of the Canadian government to create a Bill that satisfies the needs of Indigenous communities. In Section 2.2, Indigenous communities had to advocate for themselves, preserving their own autonomy, to create adequate governance groups in the Great Lakes area. The aforementioned is often to the detriment of Indigenous communities as the groups that are formed have to take funding from non-Indigenous sources. Thus, even in areas of self-advocacy, Settlers have influence over Indigenous funding. Within governance spheres where Indigenous ways of knowing are prevalent, it could be the case that Western systems infiltrate the direction of a project to maintain funded support. Specific concerns that ought to be taken into consideration in the future are whether or not the Canadian Government will try to steer Indigenous programs within WaSH. Referring back to Yates et al.’s (2017) sentiment: all who are supported by water in Canada are

not being supported – especially in a way that is competent, transparent, or with integrity. A challenge that remains in Canadian WaSH contexts is considering Indigenous voices as equal in governance and to further address the issues of non-commensurability. To open up possibilities for mitigating the above issues, research methodologies such as Two-Eyed Seeing must be given equal weight in shaping policy. Federal and provincial governments need to look to past treaty agreements and reformulate WaSH principles with Indigenous perspectives, giving Indigenous communities respect and recognition.

Conclusion

C-24 Chair Ambassador Keisha McGuire proclaimed, in February of 2021, that, “This year we entered the first year of the Fourth International Decade for the Eradication of Colonialism... I call on member states to renew their commitment, to strive to make this the last decade to be observed” (McGuire, 2021). I have presented this paper as *a* step out of many toward decolonizing water governance in Canada. I hope to have shown in this paper that it is necessary to make space for other voices in water governance. In order to show the above, I provided three different Case Studies that relayed various success of Indigenous organization, advocating for their voices to be heard. Finally, I provided a brief analysis that assessed the dangers of two OECD Principles of Water Governance that the Canadian government recognizes as legitimate. By highlighting the dangers in the Case Studies, three lessons are apparent in this paper: 1. There needs to be an addition of Indigenous Two-Eyed Seeing in water governance; 2. Canada must strengthen its nation-to-nation praxis with Indigenous communities; and 3. There needs to be a creation of space in WaSH that fosters Indigenous voices so that there can be equal participation in policy conversations to mitigate existing problems and explore new possibilities.

ⁱ Here, I make use of three distinct political terms: infrastructure, governance, and policy. Yet, I argue that these three ideas are interrelated and so can be discussed in conversation with one another. Policy such as the *Canada Water Act* directly influences the role of federal and provincial governments to deal adequately with water infrastructure, sanitation and hygiene. Therefore, one cannot meaningfully investigate water governance without at least mentioning each of these three political terms. Treating them as siloed could have an adverse effect on water policy discussions.

ⁱⁱ It could be argued that the federal government in Canada does not govern water – however, this is a contentious claim and is variable between provinces and bodies of water. For example, bodies of water in the Niagara region, where some of the analysis of this paper looks at, is governed by transnational, national and provincial laws. Therefore, one has to keep in mind documents such as the *Canada Water Act*, where there are clauses on provincial and federal water partnerships, when writing on water policy (Canada Water Act, 2022). A recent article by Taylor et al. also examines the role of the federal government on water policy in Canada (Taylor et al., 2019).

ⁱⁱⁱ Similar to the commitment made by Naoimi Metallic in her work (Metallic, 2022), I recognize that the titles First Nations, Métis and Inuit are colonial in nature and are umbrella terms for Indigenous peoples in Canada, rooted in the *Constitution Act*. Therefore, when appropriate, I will refer to Indigenous communities by their own names (e.g., Anishinaabek, Mushkegowuk, and Onkwehonwe)

^{iv} There are problems in terms of how the provinces view the personhood/autonomy of Indigenous communities and their legitimate claims to water. For an in-depth discussion about of this, see Gibson, 1969.

^v In this article I am using decolonization in a similar way that Taylor et al., 2019 are: I am referring to the right and recognition of Indigenous people to govern their own water and lands without or with minimal federal or provincial interference (Taylor et al., 2019). Some Indigenous nations have made progress in this regard. For example, the Syilx Nation Water Declaration argues: “All life requires siwłk^w and yet our siwłk^w supplies are quickly becoming over allocated, abused and polluted. Challenges related to siwłk^w quality, access, quantity, use and allocation have become more prevalent within Syilx Territory. siwłk^w is not being respected under externally driven government regulations and management conditions. Syilx People question not only the provincial and federal government’s

decision making authority related to the use of our *siwłk*^w but also their practices.” (Siyłx Nation *Siwłk*^w Declaration, 2014). The word *siwłk*^w means water. Importantly, this declaration also refers to the federal government’s failed involvement in water governance.

^{vi} For a more quantitative analysis of problematic human-environment interaction, see Vorosmarty et al., 2010. In this article, Vorosmarty et al. look at non-human and human environmental incidences. Incidences are described as “exposure to a diverse array of stressors at a given location [such as pollution or the mismanagement of water]” (Clarification added; Vorosmarty et al., 2010).

^{vii} For an international example of Indigenous voices influencing Australian policy in digital spaces, see Dreher et al., 2015.

^{viii} For more information of Indigenous/Western collaborations in WaSH, see: *Ohneganos “Let’s Talk Water”* – a research program led by Dr. Dawn Martin-Hill (McMaster University) (Martin-Hill, 2021).

^{ix} An alternative model of knowledge that fosters Indigenous/Western collaboration, separate from Two-Eyed Seeing, is the Co-Creation Model (Global Water Futures, 2021). Another article that explores integrating Indigenous knowledge systems with Western knowledge systems is von der Porten et al., 2016.

^x Section 35 of the *Constitution Act, 1982* supposedly recognizes and affirms the rights and autonomy of Indigenous peoples Canada (Hanson, 2009). For more information about the purpose of Treaties between Indigenous and non-Indigenous nations, see Dorries, 2017. In this article, Dorries explores how there are hidden and obfuscated racial logics in policy implementations on behalf of the Crown (Dorries, 2017). As well, Dorries provides in in-depth look at the goal of Treaties in Canadian contexts (Dorries, 2017).

^{xi} In this section I investigate the social and health impacts of the PWDU. For information about the engineering aspects of a PWDU see Dawe, 2021.

^{xii} Much of Indigenous advocacy occupies a politics of refusal (refusing the paternalism of the dominating government) insofar that communities attempt to maintain autonomy over their own well-being and culture while refusing to be dominated (Simpson, 2014).

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