

# **BLAZING A TRAIL?**

A THEMATIC ANALYSIS OF THE ATLANTIC FIRST NATIONS  
WATER AUTHORITY'S INDIGENOUS-LED APPROACH IN  
ADDRESSING WATER INSECURITY IN ATLANTIC CANADA

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**Sarah Lorenz**

Student number: 02216641

Supervisor(s): Prof. Dr. Hanne Cottyn

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## **Abstract**

Secure access to safe drinking and waste water remains a persistent issue for First Nations communities worldwide ; even in a water-rich country like Canada. Dominant explanations for this problem include funding deficiencies, colonial governance structures, and aging infrastructure. Previous research has primarily utilized participatory action research and interviews to understand the lived experiences of First Nations peoples and their strategies to address water access challenges. Few bottom-up initiatives have been implemented to counter this ongoing system. The Atlantic First Nations Water Authority (AFNWA) attempts to disrupt this cycle in Atlantic Canada. This thesis conducts a reflexive thematic analysis on the AFNWA's Indigenous-led approach to self-governance of water access. The analysis draws on articles from diverse stakeholders, including political, scientific and activist perspectives. The study reveals unique characteristics within the AFNWA's approach, such as a Full Service Decentralized (FSD) structure, a Hub-and-Spoke Model ensuring fast response mechanisms, a functional monitoring system and a funding strategy secured for at least ten years. The analysis finds that there are no comparable initiatives across Canada. Additionally, the thesis examines the complex relationship between the AFNWA and the Canadian government, characterized by ongoing conflicts due to system inequalities, such as underfunded reserve systems, while highlighting the government's support for the autonomy of the AFNWA and its commitment to long-term. This research underscores the AFNWA's collaboration with local engineers and scientists, and the emphasis on priority given to First Nations involvement through principles like Two-Eyed Seeing and guidance from an Elders Advisory Lodge. It further points out skepticism within First Nations communities regarding this approach. Finally, the thesis discusses the potential adaptability of the AFNWA model to other regions in Canada, contributing valuable insights for future Indigenous-led initiatives in water governance.

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## List of Abbreviations

Atlantic Canada Water Works Association	ACWWA
Assembly of First Nations	AFN
Atlantic First Nations Clean Water Initiative	AFNCWI
Atlantic First Nations Water Authority Inc.	AFNWA
Atlantic Policy Congress of First Nations Chiefs Secretariat	APC
Aboriginal Peoples Television Network	APTN
Aboriginal Affairs and Northern Development Canada	AANDC
Canadian Association of Physician for the Environment	CAPE
Crown-Indigenous Relations and Northern Affairs Canada	CIRNAC
Centre for Water Resource Studies	CWRS
Environmental Noxiousness, Racial Inequities and Community Health	ENRICH
First Nations Clean Water Act of 2023	FNCWA
First Nations Clean Water Initiative – Atlantic Canada	FNCWI-AR
First Nations Financial Management Board	FNFMB
First Nations Health Authority	FNHA
First Nations Infrastructure Institute	FNII
First Nations Clean Water Initiative	FNWA
First Nations Water Management Strategy	FNWMS
First Nations Water and Wastewater Action Plan	FNWWAP
Halifax Regional Municipality	HRM
Indigenous and Northern Affairs Canada	INAC
Indigenous Services Canada	ISC
Indigenous Traditional Knowledge	ITK
International Labour Organization	ILO
Office of the Auditor General of Canada	OAGC
Ontario Clean Water Agency	OCWA
Office of the High Commissioner for Human Rights	OHCHR
Queen’s University’s Office of Indigenous Initiatives Canada	OIIC
Plan of Action for First Nations Drinking Water	PAFNDW
Prince Edward Island	PEI
Public-Private Partnership	PPP or P3
Supervisory, Control, and Data Acquisition	SCADA

Sustainable Development Goals	SDGs
Service Delivery Transfer Agreement	SDTA
Safe Drinking Water for First Nations Act of 2013	SDWFNA
United Nations Declaration on the Rights of Indigenous Peoples	UNDRIP
Wilfrid Laurier University	WLU

## 1. Introduction

*"We need to connect with the water in ways that you [non-Indigenous people] probably don't really understand unless you are without your water, like we were for months, just a couple of years ago, in Indian Brook. Or like the people of Potlotek right now, for that matter.*

*You take for granted that there will always be clean tap water"*

*– Dorene Bernard, co-organizer of the Mi'kmaq Water Symposium (Devet, 2016).*

### 1.1 State of the Art

In Canada, water is arguably the most important natural resource. The state holds "7% [seven percent] of the world's renewable water" (Environment and Climate Change Canada, 2024), accounting to "the third-largest renewable freshwater supply in the world" (Aliakbari & Stedman, 2018). According to the World Bank, the country "serves as a global model for stability, sustainable prosperity, and economic inclusion" (World Bank, 2024). 99% of the Canadian population uses safely managed drinking water services (World Bank Open Data, 2022b) and has access to at least basic sanitation services (World Bank Open Data, 2022a). These numbers have remained high for decades: In the last 20 years, the percentage of people having access to drinking water services has risen from 98 % in the year 2000 up to 99% in 2022 (World Bank 2022b).

Considering these statistics, it seems peculiar that an industrialized nation like Canada is confronted with a water crisis. Nevertheless, it remains an undeniable fact that reliable access to water is a pressing concern for remote communities in Canada, particularly among First Nations. This problem is not recent; it has persisted since 1876, when the British Crown enacted the Indian Act (Bartlett, 1978, 581ff.). This resulted in a reserve system that has led to ongoing systemic discrimination in accessing safe water for First Nations (Hanson, 2009c).

### 1.2 Objectives

This thesis aims to contribute to understanding and addressing the water crisis in Canada on various levels. Firstly, it provides a comprehensive contextualization that uncovers the specific challenges leading to inadequate access to safe drinking water for First Nations communities in Atlantic Canada. This will help recognizing how variations in geography, infrastructure, and governance contribute to disparities in water access among different Indigenous communities. Furthermore, the study explores if and how Indigenous-led water governance can bring about change in this context. A pioneering initiative in this regard is the Atlantic First Nations Water Authority Incorporation (AFNWA), which sets a precedent for self-governance of Indigenous communities in Canada hoping it "will be blazing a trail for others to follow" (Charlton, 2020). The purpose of this study is to evaluate the AFNWA's effectiveness in improving water access and security for First Nations in Atlantic Canada. This

evaluation is conducted as a case study and analyzed using Braun and Clarke's model of a reflexive thematic analysis (Braun & Clarke, 2012).

Lastly, one objective of this thesis is to draw attention to the in academic discussions often-overlooked region of Atlantic Canada and to highlight the necessity of debating and addressing persistent top-down power structures. It also aims to emphasize the importance of bottom-up initiatives for achieving self-governance. However, I acknowledge that issues faced and solutions implemented by Indigenous communities in Atlantic Canada may differ from those of other regions. Therefore, I do not claim generalized findings within this work.

### **1.3 Research Questions**

Through this analysis, the thesis seeks to answer the following research questions:

- a) Why did the AFNWA choose its strategies and (how) does it address historical factors?
- b) How does this approach differ from other approaches, and in what ways does it create conflicts or cooperation with other perspectives, including those from Indigenous communities, scientific communities, and political bodies?
- c) What are the perceived implications of this strategy for sustainable water resource management and what lessons can be drawn from the AFNWA's experience for future similar initiatives?

### **1.4 Structure of the Thesis**

To answer the posed questions, I first situate the topic within the academic discussion. I then contextualize the problem in the broader history of Indigenous government relations in Canada, with a specific focus on water access and security in Atlantic Canada. Afterward, I explain my epistemological and ontological stance, providing the theoretical framework, including the concepts of slow violence, environmental racism and water insecurity, used in this research.

In the methodology section, I address sensitive considerations, outline my positionality, and specify the data collection and analysis methods. I then delve into the case study of the AFNWA, starting with the contextualization of the region and the AFNWA within this debate. This is followed by a thorough reflexive thematic analysis. In the findings section, I explain in detail what the analysis revealed, highlighting the different outcomes and clarifying any unclear themes. Before drawing a conclusion, I discuss these findings in relation to the historical context and the guiding concepts of the thesis, examining their implications, potential lessons, and limitations.



## 2. Literature Review

The issue of inadequate and unreliable access to clean water for Indigenous communities receives a lot of attention within the academic discourse. I delineate three primary emerging perspectives in defining the roots of the problem and approaches in addressing this challenge: the scientific view attributes the problem to engineering flaws and suggests technological solutions; the governance perspective focuses on regulations and funding, and First Nations communities advocate for equal legislation, sustainable funding, and self-governance while highlighting the structural impositions of a colonial settler state. Additionally to these viewpoints, scholars employ various concepts to explain the water crisis, which I will organize and include in this review. The main concepts in the academic discourse are water governance, environmental justice, water insecurity, and water quality.

It is crucial to emphasize that Indigenous communities and other stakeholders are not homogeneous groups. Each proposed category, which was grouped together for clarity, contains inherent heterogeneity and possible internal tensions. While I acknowledge these diverse stances, I will adhere to the main arguments prevalent in academic discussions for clarity.

First, Environmental researchers like Suzanne von der Porten and Nicole J. Wilson use water insecurity and water governance as key concepts to explain the issues stemming from persisting colonial structures (Porten & Loë, 2013; Wilson et al., 2021). Porten and Loë claim that historically established treaties, still in effect today, significantly impact current governance structures, hindering self-governance for First Nations and excluding them from decision-making processes (Porten & Loë, 2013, p. 1).

Rachel Arsenault, an Environmental Studies scholar from Wiikwemkoong Unceded First Nation, advocates for “using Indigenous research methodologies to reconfigure existing water governance frameworks, [...] [and] to encourage innovative, adaptable solutions, rooted in Indigenous epistemologies, which can better provide clean water and ensure cultural survival to Indigenous communities for the long-term” (Arsenault et al., 2018, p. 13). Similarly, activists, such as the grassroots organization The Indigenous Foundation, utilize water governance to highlight that the fundamental causes of the water crisis are rooted in the historical processes of settling traditional First Nations territories. These scholars concur that the persistent lack of assured access to safe water is attributed to ongoing settler governance and the financial challenges stemming from governmental regulations (Yenilmez, 2021). Analyzing potential enduring (water) colonialist structures to scrutinize both historical and contemporary colonial practices affecting unequal access to water resources is, according to Environmental and Indigenous governance scholars Wilson and Inkster, crucial to enable an exploration of the repercussions of colonization on land and water rights, resource distribution, and decision-making processes (Wilson & Inkster, 2018). Wilson,

Professor in Environment and Geography at the University of Manitoba, views water insecurity experiences by Indigenous peoples as “distinctly shaped by settler colonialism” (Wilson et al., 2021). Moreover, Yenilmez contends that First Nations communities, who are directly impacted by these issues, have not been adequately represented in discussions aimed at addressing these circumstances (Yenilmez, 2021a). This perspective is instrumental in revealing structural inequalities. Baiijus and Patrick, both with a background in Geography, second this, framing it as “a ‘political problem’ attached to historical injustices” (Baiijus & Patrick, 2019, p. 2). These researchers attribute the water crisis to socio-political challenges and thus, argue for solutions that address these underlying issues.

Environmental scientist Michael Mascarenhas analysed the water situation for First Nations communities in southwestern Ontario and proposed to link neo-liberalism with the concept of environmental justice (Mascarenhas, 2007). His work supports the perception that “neo-liberal reforms introduced in the mid-1990s were particularly discriminatory against Canada’s indigenous peoples, serving to exacerbate historical disparities in health, environment pollution, and well-being” (Mascarenhas, 2007, p. 565). A need for self-governance of water and increased community capacity is voiced by scholars such as sociology professor Jerry White (White et al., 2012, p. 19). Nachet et al., with a political science and geography background, second this understanding. According to these scholars “Indigenous Environmental Justice connects environmental contamination and destruction with settler-colonial processes of land dispossession. Within this framework, justice can only be brought about through Indigenous political, cultural and economic self-determination, resurgence, and decolonization of land” (Tuck & Yang, 2012, quoted in Nachet et al., 2022, p. 3).

Health and Humanities scholars Sarkar et al. link water insecurity with health, analyzing “how water insecurity is causing an infectious outbreak, stress and muscular-skeletal injuries” (Sarkar et al., 2015, p. 9). When analyzing the situation of the Black Tickle First Nations community in Labrador, Atlantic Canada, Sarkar et al. argue that water insecurity leads to “a high intake of cheap sugary beverages as an alternative to water, particularly among children” (Sarkar et al., 2015, p. 9). Therefore, it makes “them vulnerable to other serious adverse health outcomes, such as obesity, diabetes, gastritis and stomach cancer and influenza” (Sarkar et al., 2015, p. 9). Environmental Studies scholar Tessa Latchmore supports that notion. In her work on establishing a new framing for local Indigenous water security in Canada by incorporating both Indigenous Knowledge as well as Western Science, she discusses the effects of water insecurity on human health (Latchmore et al., 2018, p. 893). She claims,

“water has both direct and indirect impacts on health. [...] Access to potable water is a key element for safeguarding health and wellbeing, and water and waste water infrastructure are critical features in the provision of safe drinking water. Proper treatment, maintenance and regulations are measures to decrease the likelihood of waterborne illness and thus a water secure community” (Latchmore et al., 2018, pp. 900–901).

Examining measures taken by the Canadian government in addressing water access challenges reveals inconsistencies in state actions. Initiatives such as the Safe Drinking Water for First Nations Act of 2013 (SDWFNA) or the First Nations Clean Water Act of 2023 (FNCWA) demonstrate a commitment to legislative solutions<sup>1</sup>. Despite these efforts, the Office of the Auditor General of Canada (OAGC) criticizes several actions, for instance the development of the SWFNA, citing a lack of meaningful consultation with First Nations (OAGC, 2021). The evaluation concludes that the Indigenous Services Canada (ISC) has not provided sufficient support to ensure safe access to safe drinking water, highlighting a gap between promises and implementation and showcasing internal tensions within the state's approach (CIRNAC, 2023; OAGC, 2021). The Canadian government's promise in 2015 to end drinking water advisories on reserves by March 31, 2021, while showing progress, remains unfulfilled as of August 2024 (ISC, 2024g). At the beginning of 2015, "at least 1838 drinking-water advisories were in place [...] in communities across Canada, including 129 First Nations" (Eggertson, 2015, p. 488). In November 2021, this number decreased to a total of 978 drinking water advisories (Our Living Waters, 2023). The persistence of drinking water advisories, as reported by medical journalist Laura Eggertson (2015) and the Canadian network Our Living Waters (2023b), raises questions about the effectiveness of government pledges.

Another relevant perspective is articulated by professionals in the fields of Engineering, Public Health, and Environmental Science. Epidemiologist and Community Health professor Lalita Bharadwaj and Social Psychologist Lori Bradford (2018) argue that the problem lies in management and infrastructure, stating

"Poor drinking water quality on reserve is also related to poor quality source water; inadequate access or quantity of water; a lack of funding for infrastructure, training, and maintenance; inadequate or inconsistent disinfection; inadequate distribution and operational issues; high risks of contamination due to rural and remote locations of reserves; gaps in regulatory frameworks; and negative human risk perceptions for treated water which compels communities to seek out other sources" (Mascarenhas, 2007; quoted in Bharadwaj & Bradford, 2018).

This is seconded by the OAGC, criticizing the Government's management regarding First Nations, claiming that safe access to clean drinking water is a challenge because of organizational issues: "Most First Nations water systems are small, and some are in remote communities that are not always accessible by road. These circumstances present unique challenges, such as managing high capital and operating costs, finding and retaining qualified water system operators, and getting supplies and materials" (OAGC, 2021, p. 3).

In exploring potential solutions, an institutional embodiment of this scientific academic lens in the context of water access in Atlantic Canada is Dalhousie University's "Centre for Water Resources Studies" (CWRS, 2024a). This research center is dedicated "to address water

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<sup>1</sup> For a detailed analysis of legal actions towards First Nations access to water in Canada, see Chapter Three.

issues facing Atlantic Canada through applied research” (CWRS, 2024a). The CWRS accounts the root problem of the water crisis of First Nations to water governance and “issues with both human resource and financial capacity” as well as “the lack of a central regulatory body and standards to follow” (CWRS, 2024b).

While this represents an essential perspective, a technocratic approach has its limitations. Technological solutions, if not complemented by broader socio-political considerations, may overlook the socio-cultural contexts and community-specific needs (Climate Nexus, 2021). Additionally, the financial, logistical, and regulatory challenges outlined by both Bharadwaj and Bradford (2018) and the OAGC (2021) underscore the shortcomings of implementing solutions solely based on scientific and technological advancements and the complexity of the subject.

In addition to historical and structural factors, financial constraints play a pivotal role in water disparities among First Nations communities in Canada (OAGC, 2021, p. 4). The OAGC (2021) emphasizes the inadequacy of funding provided by the Government. Many First Nations communities in their quest for reliable drinking water “rely on diverse water systems” (OAGC, 2021, p. 3). Systems serving five or more households or public facilities are categorized as public systems and receive funding from ISC (ISC, 2024b). However, a significant challenge arises for individual households relying on systems such as wells, as these do not receive departmental funding (OAGC, 2021, p. 3). This is seconded by other scholars like Walters et al. (2012). Environmental scientist Dr. Dan Walters found in a study on First Nations drinking water risk in Ontario: “Despite the financial and technological investments in First Nations water systems, there are significant differences in service standards among First Nations and non-First Nation communities in Ontario” (Walters et al., 2012, p. 21). This reveals a systemic issue seconded by a number of studies on water access for Indigenous communities in Canada (i.e. Boyd, 2011; Bradford, Bharadwaj, et al., 2016; Bharadwaj & Bradford, 2018; Patrick, 2011). Walters et al. question the approach of multi-barrier protection to ensure reliable water access. Multi-barrier approach includes considering “source, distribution, treatment, monitoring, and management” of water (Walters et al., 2012, p. 1). Despite appearing promising, the study identified resource deficiencies, including fiscal or technical constraints that hinder a successful long-term implementation of this approach to sustainably managing drinking water access (Walters et al., 2012, p. 2).

The funding issue is crucial in addressing water access challenges. Therefore, White et al. (2012) argue for the need of sustainable development, including a long-term commitment to funding (White et al., 2012, p. 19)

Additionally, research has been conducted on tripartite approaches on water management in Canada (Bruhn, 2018). These incorporate Indigenous communities and the federal government, but also provincial or municipal levels of water governance. Political Scientist

Jodi Bruhn debates the question “whether they mark an overlooked instance of multi-level governance, or simply represent a further variation on the devolution of administration, ongoing since the 1970s” (Bruhn, 2018, p. 4). While Bruhn’s work focuses on the sectors First Nations policing, child welfare, and education, it emphasizes the “great diversity in both the character and the purpose of agreements—among regions and even within sectors” (Bruhn, 2018, p. 25).

The preceding discussion only grapples with a few of the problems and actors related to the issue of lacking water access for First Nations in Atlantic Canada. Several studies, from the field of psychology (Bradford, Bharadwaj, et al., 2016) to engineering (Black & McBean, 2017) agree on the need for national Indigenous-led strategies and collaborative measures. Black and McBean advocate for “a cohesive, Indigenous-centred approach to the provision of safe drinking water in order to address the community-specific needs” (Black & McBean, 2017, p. 251).

Concluding, scholars and activists agree on multiple factors leading to the current state of Indigenous peoples lacking access to safe drinking water. This literature review reveals a complex puzzle involving persisting colonial injustices, governance structures hindering self-governance as well as funding challenges leading to negative effects like health implications. Dr. Heather Castleden, Geography researcher, argues that the sole focus on either one perspective is insufficient because the dependence on Western scientific approaches overlooks the wisdom in “Indigenous knowledge systems and relational practices” related to water found throughout the country” (Castleden et al., 2017). This is a crucial and often overlooked aspect of the discussion.

Indigenous Traditional Knowledge (ITK) plays a crucial role in finding solutions to the water crisis, particularly because First Nations have a deep-rooted relationship with water.

The AFNWA states:

“Water is sacred. We all come from water and it is the source of life for all living things. [...] Historically and today, First Nations believe in the shared ownership of land and water, rather than individual ownership. [...] As water is alive both spiritually and physically, it is an important part of many gatherings including ceremonies to honour the water spirits and practices that take your troubles away. Offerings can come from, be made into, or be dedicated to water” (AFNWA, 2024b).

Therefore, a comprehensive approach integrating both technocratic solutions and socio-political considerations is essential in addressing the diverse challenges related to water access in Indigenous communities. This is yet to be accomplished. “While there have been some attempts to incorporate ITK into conventional water management in Canada, many efforts made to date have not been sufficient” (Finn, 2010, p. 10). As Spence and Walters argue, “solutions and focus must lie with the social world” (Spence & Walters, 2012, p. 16). Based on the findings of this review, discussing the challenges and outcomes of indigenous-

led initiatives to gain reliable water access is needed. This discourse will be the focus of this research.

### **3. Historical Contextualization<sup>2</sup>**

The literature review identified governance regulations rooted in settler colonialist structures as a major issue affecting water access for First Nations in Atlantic Canada, as well as the rest of the country. Therefore, this chapter will discuss the most important legal developments since the late 19<sup>th</sup> century. Notably, information on Indigenous peoples' rights prior to 2013 is not directly accessible on official Canadian government websites. Legal developments published before that date have been archived, making them difficult to locate through web searches. It becomes evident that the legal framework remains vague and fails to protect First Nations' access to safe water. As MP Lenore Zann, advocating for Bill C-230, summarizes: "The time has come for us to act to redress the problems of the past and make sure they do not continue. Surely it should be enshrined as a human right for all Canadians to have clean air, water, and earth" (Zann, 2020a).

When possible, I included specific developments in the Atlantic Canada region. However, there is a scarcity of literature on the Atlantic Provinces.

#### **3.1 Early Stages: The British Empire and the Indian Act**

The struggle for water rights for Indigenous communities in Canada goes back to the 19<sup>th</sup> century with the rule of the British Empire. The European colonizers enacted multiple legislations to assert control over Indigenous peoples on Canadian ground. With the aim of "civilizing Indigenous groups", treaties like the Indian Act were dictating Indigenous way of life, forcing Western values on them (Leslie, 2002, p. 24).

The implementation of the Indian Act of Canada (also known as the Constitution Act) in 1876 was the most significant and far-reaching policy in the development of water regulatory frameworks in Indigenous territories (Bartlett, 1978, 581ff.). This legislation became "the principal instrument through which federal jurisdiction over Indians and native people has been exercised during the last one hundred years" and beyond (Bartlett, 1978, p. 581). The Indian Act declares federal governments jurisdiction over the lands of First Nations, called "reserves" (Leslie, 2002, p. 23). Those "reserves" are "land[s] set aside by the Canadian government for use by First Nations" (The Canadian Encyclopedia, 2024). The reserve system remains in effect in present-day Canada. The Indian Act "sets out the degree of control and authority that the Minister of Indian Affairs has over the use of reserve lands", thereby denying Indigenous peoples ownership and self-determination of the reserves (Hanson, 2009d). According to Waldron, due to this reserve system, Indigenous communities

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<sup>2</sup> See "Appendix G: Chronology of Legislative Actions of Water Rights in Canada for First Nations" for a visualization of the timeline.

in Canada “are more likely to reside in places where they are impacted by poor air quality and water contamination from polluting industries, as well as future climate devastation resulting from rising sea levels, raging storms and floods, and intense heat waves” (Waldron, 2021). In a 2016 published newsletter by the Ditidaht First Nation, located in the south of Vancouver Island, they argue:

“ ‘Our’ reserves were established by the federal government with little consultation with us on how much we needed. At present, they are only ‘ours’ because the federal government says they are. The Indian Act says they are held by the federal government ‘for the use and benefit of the Indians’, but ownership and the uses and benefits are still controlled by Ottawa” (Ditidaht First Nation, 2016, p. 3).

Thus, the Indian Act denied self-governance and self-control of lands to all Indigenous peoples in Canada. This continues to pose significant challenges for First Nations in Canada not only due to the cultural value of nature for Indigenous people which is disregarded by the Indian Act (Human Rights Watch, 2016; Hanson, 2009c). Reserves are frequently situated in regions with limited natural resources and inadequate infrastructure, presenting economic and environmental hardships. Moreover, “[r]eserves fall under federal rather than provincial or municipal jurisdiction levels of government”, which traditionally oversee services, and regulations for non-reserve communities (Hanson, 2009d). In 1951, the Indian Act was to be revised, but the resulting Indian Act of 1951 looked quite similar to the original legislation. It lifted “the excesses of government control of local affairs on the reserves and of cultural prohibitions” (Bartlett, 1978, p. 586) but it “in no way [...] conferred any power resembling self-determination or self-government upon the Indians” (Bartlett, 1978, p. 587).

Beyond the Indian Act, the British Empire implemented regulations that perpetuated unequal treatment of Indigenous peoples, such as the classification of communities into more and less advanced categories. The Indian Advancement Act of 1884 “focus[ed] mainly on the bands of eastern Canada, [and was] designed to promote municipal-style government for the more advanced Indian groups” (Leslie, 2002, p. 25). Over the course of the 20th century, multiple complaints and reports were filed to lift those regulations without success (Bartlett, 1978, p. 588). These factors of land management influence the water rights of Indigenous peoples. Jurisdiction over reserves remains in effect today and extends beyond land. All treaties and regulations, also regarding water access, established since the enactment of the Indian Act, are constrained by its provisions.

“[I]n 1970, the Canada Water Act was the Canadian government’s way to ensure the cooperation of provinces and territories to deliver and develop adequate water infrastructure, sanitation and hygiene across the country” (McKibbin, 2023). According to the Government of Canada, it “provides the framework for cooperation with the provinces and territories in the conservation, development and use of Canada’s water resources” (Government of Canada, 2016, p. i). However, it also reinforces the government’s assertion of its ownership of water

resources and its rights to monitor all progress of provinces in formulating water governance approaches (McKibbin, 2023).

### 3.2 National Developments in Water Rights Since the Late 20<sup>th</sup> Century

Over the past three decades, both positive and negative developments occurred in water governance for Indigenous peoples in Canada. The Canadian Government has undertaken initiatives to fulfill its “goal of reconciliation to repair the legacy of past injustices” (Anaya, 2013), quoted in (Mitchell & Enns, 2014, p. 2). Examples are the apology to former students of Indian Residential Schools in 2008 (CIRNAC, 2008) and the resulting creation of the Truth and Reconciliation Commission (CIRNAC, 2024a). However, many of such actions did not tackle water injustices for First Nations.

The Indian Act was redrafted multiple times. In 1982, one consolidation of the Constitution Act was implemented, containing amendments like the addition of “*the Canadian Charter of Rights and Freedoms* and other provisions, including the rights of Indigenous peoples” (Minister of Justice Canada, 2024, p. ii). However, according to Erin Hanson, Anthropology researcher at the University of British Columbia, the inclusion of Indigenous rights only came about through protests led by Indigenous peoples (Hanson, 2009a). The initial consolidation of the Constitution Act of 1982 referred little to Aboriginal rights, thus

“Aboriginal groups across Canada became concerned that, with the transfer of constitutional powers from Britain to Canada, established agreements affirming Aboriginal rights and title would no longer hold legal weight. Aboriginal groups were also concerned that they would no longer be viewed as autonomous decision-makers on a federal level, and they saw the potential for the patriation to be yet another assimilationist policy” (Hanson, 2009a).

Only after two years of campaigning against the legislation on national and international level did the Canadian government consent to incorporate Indigenous rights into the Constitution Act of 1982 (Hanson, 2009a).

In 1985, the Canadian Parliament announced further amendments to the Constitution Act. The provisions allowed “bands the ability to control their own membership by establishing band membership codes” (Morellato, 2006, p. 1). However, Indigenous and Northern Affairs Canada (INAC) “provides funding to bands only for Status Indians, not for band members” (First Nations Studies, 2009; Adler, 2014). Therefore, even though bands have this autonomy over their membership, the federal sources they can access are based on criteria set by the federal government (First Nations Studies, 2009).

Despite this progress, injustices persisted, such as insufficient funding resulting in deteriorating infrastructure (Arsenault, 2021), failure to enforce regulations and monitoring mechanisms (Boyd, 2011), as well as jurisdictional ambiguity between different levels of and Indigenous communities (Fryer & Leblanc-Laurendeau, 2019). An example for these systemic challenges is the prevalence of drinking water advisories. In February 1995, the first



boil-water advisory was implemented in Neskantaga First Nation (ISC, 2024d). According to the Canadian Government, “[d]rinking water advisories are public health protection messages about real or potential health risks related to drinking water. [...] The advisories can take 3 forms: Do not consume, Do not use and Boil water” (Environment and Climate Change Canada, 2022). Boil water advisories constitute 98% of all drinking water advisories each year (Environment and Climate Change Canada, 2022). Advisories are distinguished by their duration. Short-term advisories are lifted within one year. Those persisting beyond this timeframe are classified as long-term drinking water advisories (ISC, 2024e). Communities have the authority to issue advisories as they deem necessary (ISC, 2024e). This system of advisories was implemented to raise awareness about water safety issues but has instead become a source of frustration and intensified a sense of abandonment among First Nations (Gallacher, 2023). The Neskantaga First Nation in Ontario has been under a water advisory for over 29 years and, thus, is “Canada’s longest consecutive boil water advisory” (Gallacher, 2023). Although this being the longest existing, it is by far not the only community that has been dealing with contaminated or inaccessible water for years. These water advisories have far-reaching implications for the affected people (Stefanovich & Jones, 2021). Advisories often are issued in small “communities of 500 or fewer people” but can impact areas with up to 5,000 residents (Environment and Climate Change Canada, 2022, p. 7)

In the beginning of the 21st century, the Canadian Government began to prioritize the water situation for First Nations: “A 2001-2002 assessment found that the quality of almost three quarters of drinking water systems in First Nations’ communities were at significant risk” (Auclair & Simeone, 2010, p. 1; Simeone & Troniak, 2012, p. 1). Further, it acknowledged that by 2003, many First Nations communities had already been without access to safe drinking water for over a decade (CIRNAC, 2007). Thus, in the same year, the Chrétien administration authorized the implementation of the “First Nations Water Management Strategy” (FNWMS) (CIRNAC, 2007). The program was created to “address urgent issues related to drinking water and wastewater in First Nations communities” (CIRNAC, 2007). The FNWMS “involved a federal investment of CAD \$1.6 billion over 5 years (2003 to 2008)” to enhance water quality and access for First Nations (Morrison et al., 2015, p. 353). While this strategy resulted in enhanced monitoring, reporting and response systems, it did not tackle underlying injustices (Cameron & Coates, 2023, p. 24).

Thus, the Plan of Action for First Nations Drinking Water (PAFNDW), an enhanced FNWMS, was introduced in 2006 (Coates & Cameron, 2023). The Honorable Jim Prentice, then Minister of Indian Affairs and Northern Development and Federal Interlocutor for Métis and Non-Status Indians, declared it to be an essential step “to ensure that all First Nations reserves have access to clear, safe drinking water” (INAC, 2006). As part of the PAFNDW, the Government of Canada “committed an additional \$60 million between 2006 and 2008 to

further its aims“ (Coates & Cameron, 2023). According to Cameron and Coates “the panel also noted a problematic gap between the federal government’s cost estimates and the actual amount of funding needed to bring First Nations drinking water systems up to an acceptable standard” (Coates & Cameron, 2023).

Since the PAFNDW did not achieve the desired outcomes, the First Nations Water and Wastewater Action Plan (FNWWAP) was launched in 2008 (Simeone & Troniak, 2012, p. 3). With the FNWWAP, the Canadian Government committed to an intensive investment program. “From 2008 to 2012, the Government of Canada invested nearly \$556 million in the FNWWAP, and a total of nearly \$1.4 billion on all water and wastewater activities” (CIRNAC, 2013, p. iii). The goal of the FNWWAP does not essentially differ to the preceding strategies. It is “to support First Nation communities on reserve in bringing their drinking water and wastewater services to a level and quality of service comparable to those enjoyed by other Canadians living in communities of similar size and location” (CIRNAC, 2013, p. iii). This program is still listed under the current Water and Wastewater Projects of the Government of Canada (CIRNAC, 2024b). The developments implemented by the Canadian Government during the 2000-2010 decade did improve the overall water service conditions for First Nations. However, these advancements did not lead to equal quality and access to water for First Nations compared to non-Indigenous people. According to the civil engineers Mofizul Islam and Qiuyan Yuan

“significant improvement [has been made] in 2011 when 98% of the Canadian First Nations houses received wastewater services in comparison to only 50% in 1978. However, 1,777 First Nations houses did not receive any wastewater services. [...] The overall high-risk and medium-risk wastewater systems have reduced from 14 and 51% in 2011 to 6 and 41% in 2014–2015, respectively. The Government of Canada committed to provide \$4.2 billion for the 10-year period (2011–2021) against the estimated cost of \$6.3 billion” (Islam & Yuan, 2018, p. 1).

In 2010, Bill S-11, also called the Safe Drinking Water for First Nations Act<sup>3</sup>, was presented as the first legislative initiative to address First Nations water insecurities<sup>4</sup> (Auclair & Simeone, 2010). The bill declared three primary responsible departments for “delivering safe drinking water on reserves: the Department of Indian Affairs and Northern Development, Health Canada, and Environment Canada” (Auclair & Simeone, 2010, 1f.). Bill S-11 “died on the order paper as a result of the federal election in 2011, and has not been re-introduced” (Boyd, 2011, 89f.; Simeone & Troniak, 2012, p. 1). According to the House of Commons Hansard #174 of the 41<sup>st</sup> Parliament, member of the Liberal Party Carolyn Bennett, representing Ontario electoral district, voiced that Bill S-11 “was sharply criticized by first nations and NGOs for ignoring the expert panel recommendations and for claiming sweeping

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<sup>3</sup> The full official name of Bill S-11 is “An Act Respecting the Safety of Drinking Water on First Nation Lands” Library of Parliament Canada (2024).

<sup>4</sup> Some sources refer to the bill as “Bill 5-31” ( McKibbin (2023, p. 6) or “Bill S-31” (Mcgregor (2014, p. 504). However, in official documents by the Government of Canada, the Safe Drinking for First Nations Act is only referred to as “Bill S-11” (Auclair and Simeone (2010).

jurisdiction without consultation” (House of Commons Canada, 2012b). Therefore, Bill S-8, a revised version of Bill S-11, was introduced in 2012. This new Safe Drinking Water for First Nations Act was designed to respond to the criticism. The legislative summary of Bill S-8 states:

“While Bill S-8 retains several of the features of the former Bill S-11 [...], the proposed legislation would address the application of those [federal] regulations, as they relate to, among other things, source water; the liability of First Nations for non-band-owned water systems; the application to self-governing First Nations; and agreements with, and powers of, third parties” (Simeone & Troniak, 2012, p. 1).

However, Bill S-8 failed to meet its objectives and did not bring about significant improvements for First Nations. Many First Nations criticized the act as “almost an exact replica of a previous Bill, [...] which was met with widespread opposition from First Nations” (Chiefs of Ontario, 2012). Carolyn Bennet seconds that, claiming “Bill S-8 has most of the same flaws as its predecessor and does not seem to have taken first nations concerns into account” (House of Commons Canada, 2012b).

Until 2013, legal actions implemented by the Government of Canada have proven disappointing for First Nations. A pattern of persistent injustices emerges: Despite some improvements, water regulations are either not legally binding, or exclude First Nations’ voices from decision-making. Additionally, First Nations do not have full governance over their water resources, nor is there a reliable system in place to ensure the quality of their accessible water (Bradford, Ovsenek, & Bharadwaj, 2016).

According to the Canadian Government, the first significant legal development was implemented in 2013 with the signing of the SDWFNA (ISC, 2024c). Previously failed initiatives are not mentioned on any Government website (ISC, 2023b). The SDWFNA indicates “that all water, whether on Indigenous or non-Indigenous land, should be of equal quality” (McKibbin, 2023, p. 6). However, the act was objected by many First Nations. Some of these protests referred to “lack of adequate, predictable and sustainable funding; lack of recognition of Aboriginal rights; potential infringement of Aboriginal and treaty rights; lack of protection of source water; [and] insufficient engagement on issues that directly affect First Nations” (CIRNAC, 2023). However, the major issue was that First Nations were excluded from all stages of the act’s development, thereby the voices of Indigenous communities, who are most affected by water insecurity, were ignored (Hajdu, 2024). According to the Assembly of First Nations, the SDWFNA “fails to respect First Nation authority and concerns” by excluding Indigenous voices from any policy consultations (Assembly of First Nations, 2019, p. 9). As a result, the SDWFNA was repealed in 2022 (CIRNAC, 2023).

Further activist initiatives, while not immediately legally binding, have substantially influenced the development of water access management for First Nations in Canada. In 2012, “the Idle No More Movement, a grassroots political strategy started on Facebook by four Indigenous women in Saskatchewan in 2012” (Morgan, 2023). The movement was a union “among

Treaty People in Manitoba, Saskatchewan, and Alberta protesting the Canadian government's dismantling of environmental protection laws, endangering First Nations who live on the land" (Idle No More, 2020). Idle No More aims to advance social justice and to ensure the respectful protection of the environment (Wotherspoon & Hansen, 2014, p. 22). The movement was a response to the Bill C-45, which the founders of Idle No More viewed as "a direct assault on the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)" (Woo, 2013, p. 184). Bill C-45, the Jobs and Growth Act<sup>5</sup>, was, for instance, proposed to "implement certain tax measures" and amend acts like the Indian Act (Division 8 of Part 4) "to modify the voting and approval procedures in relation to proposed land designations" (House of Commons Canada, 2012a). However, according to legal historian Grace Li Xiu Woo, C-45 denied several Indigenous rights. Examples are the exclusion of Indigenous peoples from involvement in federal fishery policies, or the eradication of state supervision of a majority of Canada's lakes and rivers (Woo, 2013, p. 184). This resulted in additional negative consequences: "Waterways and Indigenous territories were suddenly vulnerable to the highly contentious Northern Gateway Pipeline proposed to bring oil from Alberta's tar-sands to the Pacific coast" (Woo, 2013, p. 184). The Idle No More initiative gathered attention beyond Indigenous communities. "Through peaceful demonstrations, teach-ins and rallies, Idle No More demands Canada repeal parts of legislation that affirm colonial actions [...] and asks that existing environmental protections be upheld" (Morgan, 2023).

In 2015, Justin Trudeau became Prime Minister of Canada. During his election campaign, he pledged "to lift all boil water advisories within five years of coming to office" (Stefanovich & Jones, 2021). However, in December 2020, when it became clear that the government would not be able to uphold this promise by 2021, it announced to invest additional \$1.5 billion "to accelerate work to lift all long-term drinking water advisories on reserves, and \$114.1 million per year ongoing thereafter to support daily operations and maintenance for water infrastructure on reserves" (ISC, 2020b). In a progress update on ending water advisories in March 2021, the Government of Canada claimed to have lifted 175 short-term and 101 long-term drinking water advisories since 2015 (ISC, 2021). However, this equals 58 remaining long-term advisories on reserves (ISC, 2021).

Dr. Indgrid Waldron, a professor at Dalhousie University's Faculty of Health in Halifax, collaborated with former Nova Scotian MP Lenore Zann to legally address environmental racism<sup>6</sup> in Canada. In 2015, they presented private member's Bill 111, the Environmental Racism Prevention Act, to the Nova Scotian Parliament (Bill 111, 2015). Private member's

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<sup>5</sup> The official title is "A second Act to implement certain provisions of the budget tabled in Parliament on March 29, 2012 and other measures" House of Commons Canada (2012a).

<sup>6</sup> Environmental Racism is detailed discussed in Chapter 4.3.1, as a key concept guiding this research.

bills “concern matters of a private nature or of special interest to specific corporations and individuals” (House of Commons Canada, 2024a). Bill 111 was rejected after its first reading, “but within Nova Scotia it generated a lot of discussion and interest in the topic” (Devet, 2020). Particularly, the realization that water quality for Indigenous communities remains substandard compared to non-Indigenous territories due to insufficient government follow-through emerged (Devet, 2020). Beze Gray, a Two-Spirit member of Aamjiwnaang First Nation, underscores the broader environmental injustices faced by First Nations, worsened by industrial activities and inadequate consultation:

“There is not a single part of our territory, including our bodies, that has not felt the impact of these industries that give us [...] water pollution, making their way through ecosystems and into living beings. [...] We disproportionately face respiratory illness and rare cancers in our community [...]. As Indigenous people our language, culture, and knowledge is based on the land. If our land is impacted, our people and our way of living are impacted as well” (Bergamo & Yates, 2020).

In March 2021, Waldron and Zann revised the provincial bill into a federal one (Park, 2021). Private member’s Bill C-230, “known as the National Strategy to Redress Environmental Racism Act”, passed the second reading in the House of Commons (Butler, 2021). This legislation would hold the Canadian government accountable to “examine links between environmental hazards, race, socio-economic status, and health impacts, and to include racialized communities in environmental decision-making processes” (Butler, 2021). This would involve a strategy to secure “access of affected communities to clean air and water, and amendments to federal laws, programs and policies” (Devet, 2020). However, after the second reading, Bill C-230 was rejected. Nonetheless, it “was the first of its kind in Canada that aimed to address harms caused by environmental racism and promote environmental justice across the nation” (Park, 2021).

The bill was once again revived in November 2021. This time, federal Green Party leader Elizabeth May tabled Bill C-226<sup>7</sup>, “with the same wording as it had during the previous parliamentary period” (Morgan, 2023).

The creation of a federal bill to address environmental racism highlights a recurring pattern of Indigenous communities being unequally treated in water access. Legal developments that aim to address these issues often prove inadequate or fail to become institutionalized. This contradicts the promises the Canadian government made by UNDRIP. As Dr. Jane McArthur, Toxics Program director at the Canadian Association of Physician for the Environment (CAPE), states: “If Canada is truly committed to upholding the principles of [...] [UNDRIP], if we’re truly trying to get at truth and reconciliation, we need to be addressing this and calling it what it is — which is colonization” (Wentzell, 2022) .

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<sup>7</sup> Official name is an “Act respecting the development of a national strategy to assess, prevent and address environmental racism and to advance environmental justice” House of Commons Canada (2024b).

Since 2021, the Canadian government has enacted legal actions representing advancements in water access for First Nations. In November 2021, Senate Government Bill S-5, the Strengthening Environmental Protection for a Healthier Canada Act<sup>8</sup>, was introduced (House of Commons Canada, 2021). For the first time, a “law ensures that every Canadian has the right to a healthy environment” (Morgan, 2023). Bill S-5 was officially decreed into law on June 13, 2023 (House of Commons Canada, 2021).

Further, in December 2023, Bill C-61, the First Nations Clean Water Act<sup>9</sup>, was proposed as an enhanced and revised version of the 2013 act (ISC, 2023c). This would “recognize and affirm the inherent right of First Nations to self-government in relation to water, source water, drinking water” (ISC, 2023c) as well as “operate independently of the Indian Act” (ISC, 2023c). It is the first government proposal to include these recognitions. It remains to be seen whether the act will have a positive impact on access to clean water for First Nations. Kristina Michaud, political spokesperson for the Bloc Québécois commends the bill but stresses:

“It is pretty unbelievable, not to say absurd, that in 2024 we still need to pass legislation to ensure that first nations across Canada have access to clean drinking water. Canada is not a developing country. It is a G7 country. Nearly 20% of the world's freshwater reserves are in Canada. It is extremely surprising that in 2024 more has not been done about this” (Michaud, 2024).

### **3.3 International Developments in Water Rights Since the 21<sup>st</sup> Century**

In addition to developments on the national scale, the international legal framework for water rights has significantly evolved over the past 20 years. In 2007, UNDRIP was proposed by the UN General Assembly. It “represents an important development in the recognition and internationalization of indigenous rights, as it provides an international rights standard for 148 member nations” (Mitchell & Enns, 2014, p. 3). Further, as the first document of its kind that “was drafted with the extensive participation of the affected population”, it signified an important milestone for the recognition of Indigenous rights (Mitchell & Enns, 2014, p. 3). UNDRIP aimed to support fundamental rights which had previously been disregarded by states (Mitchell & Enns, 2014, p. 3). However, while 143 nations were in favor of the declaration, four nations voted against UNDRIP. The opposing parties were Australia, New Zealand, the United States and Canada. Canadian Ambassador John McNee argued that Article 32/1 raised concerns. This clause states that

“States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other

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<sup>8</sup> Bill S-5 is officially named “An Act to amend the Canadian Environmental Protection Act, 1999, to make related amendments to the Food and Drugs Act and to repeal the Perfluorooctane Sulfonate Virtual Elimination Act” House of Commons Canada (2021).

<sup>9</sup> The official title of Bill C-61 is „An act respecting water, source water, drinking water, wastewater and related infrastructure on First Nation lands” House of Commons Canada (2023).

resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources” (OHCHR, 2007, Art. 32/2).

Specifically the call for free, prior and informed consent worried the Canadian Government, stating that “the provisions in the Declaration on lands, territories and resources were overly broad, unclear, and capable of a wide variety of interpretations, discounting the need to recognize a range of rights over land and possibly putting into question matters that have been settled by treaty” (UNGA, 2007). The Canadian Government argued that the formulation of the declaration was against the country’s domestic law (UNGA, 2007).

The same is true for the 1989 International Labour Organization (ILO) C169 declaration, which “recognizes Indigenous peoples’ right to self-determination within a nation-state, while setting standards for national governments regarding Indigenous peoples’ economic, socio-cultural and political rights, including the right to a land base” (Hanson, 2009b). As of 2024, Canada has not ratified the convention and is thus not bound by its enforcement mechanisms (ILO, 2024). Nevertheless, “ILO Convention No. 169 has informed domestic and international approaches to indigenous rights” and is often referenced by UN treaty bodies, suggesting it reflects customary law (Drek et al., 2013, p. 272).

In November 2010, the Government of Canada changed its position on UNDRIP and “formally endorsed [...] [it] in a manner fully consistent with Canada's Constitution and laws” (INAC, 2010), to “reconcile and strengthen [its] [...] relationship with Aboriginal peoples in Canada” (INAC, 2010). However, it specifically stated, that, as a declaration UNDRIP is and will not be legally binding, rather it is viewed “as an important aspirational document” (INAC, 2010). Nonetheless, as a member of the UN, Canada has to adhere to common standards (Mitchell & Enns, 2014, p. 7).

The same year, the UN General Assembly adopted the human right to water. With this institutionalization, the signing states can be held accountable for upholding this right. “International human rights law obliges States to work towards achieving universal access to water and sanitation for all, without any discrimination, while prioritizing those most in need” (OHCHR, 2024). The right to water includes “availability, accessibility, affordability, quality and safety; and acceptability” (OHCHR, 2024). Canada did not sign the resolution. Boyd summarizes, the state “has a history of blocking international efforts to recognize the right to water” (Boyd, 2011, p. 85). However, this did not represent a cohesive stance within the country. Quebec, as the only region in Canada, has enshrined water as a human right in its legislation (Boyd, 2011, p. 86). In 2007, the Northwest Territories acknowledged the right but did not incorporate it into federal legislation (Boyd, 2011, p. 86). In 2013, Canada reversed its position and voted in favor of recognizing the human right to water (Busby, 2016, p. 11).

On a positive note, the 2030 Agenda for Sustainable Development was adopted unanimously by the UN in 2015 (ISC, 2024a). Among 16 other goals, it includes Sustainable Development Goal (SDG) 6: “Ensure availability and sustainable management of water and sanitation for

all” (ISC, 2024a). However, as of June 2024, Canada has yet to enshrine water as a human right in its domestic legislation. Additionally, the SDGs face criticism from scholars because monitoring the implementation of these goals is challenging because they are not legally binding (Swain, 2018, p. 342). Furthermore, scholars like economics professor Ranjula Bali Swain argue that the SDGs are articulated too broadly, complicating efforts to measure their implementation (Swain, 2018, p. 343).

To conclude, since the early 2000s, various policy and legislation efforts attempted to address water inequities for First Nations. Despite some progress, Canada has often obstructed efforts to ensure water rights for First Nations both domestically and internationally. Significant disparities in access to clean water for Indigenous communities persist, particularly in areas such as water governance and “location, accountability, cost and financing, operators, technical standards, population growth, control and oversight, and funding” (AFNWA, 2022b, 15f.). These issues highlight the ongoing need for advocacy and reform.

#### **4. Theoretical Framework**

This research is exploratory in nature. As Saunders et al. (2009) explain, “the purpose of exploratory research is to find out ‘what is happening,’ ‘seek new insights,’ and ‘assess phenomena in new light’ “ (quoted in Makri & Neely, 2021, p. 3). Thus, this study is not grounded on a specific theory. However, Audrey Danaher’s framework of social determinants of health can provide a “more systemic focus” (Waldron, 2021). These determinants involve “values, beliefs, worldviews, culture, and norms; governance; laws, policies, regulations, and budgets [and] institutional practices that impact hierarchical patterns of advantage and power relations” (Heller et al., 2024, p. 357). This framework indicates that “a responsive and effective community sector can contribute to reducing health disparities” (National Academies of Sciences, Engineering, and Medicine, 2016). Because this research’s case study involves a “not-for-profit organization whose mandate is to work with and provide services to communities to meet local needs,” it aligns well with this framework (Danaher, 2011, p. 3). Furthermore, the framework emphasizes that understanding the social determinants of health is essential in addressing the structural causes of inequality, and that this must be developed “not just at the policy level, but deep in affected communities” (Danaher, 2011, p. 2). While this is useful, I will utilize it as a supplementary perspective rather than a guiding framework. Although it addresses social injustices, it primarily focuses on health disparities (Heller et al., 2024, p. 361). However, this study considers broader social and political factors critical to understanding and addressing the water crisis in Indigenous communities.



Additionally, this study acknowledges the relevance of Critical Theory (CT). As defined by Robin Celikates and Jeffrey Flynn, CT is “a family of theories that aim at a critique and transformation of society by integrating normative perspectives with empirically informed analysis of society’s conflicts, contradiction, and tendencies” (Celikates & Flynn, 2023). CT is a social theory aiming to assess and transform society (Lee Yow Fui et al., 2011, p. 129). It investigates “issues such as exploitation, asymmetrical power relations, distorted communication, and false consciousness” (Lee Yow Fui et al., 2011, p. 129). While this research does not adopt CT as its guiding framework, its focus on gaining “insights into the forces of domination operating within society in a way that can inform practical action and stimulate change” is relevant to the themes explored in this study (Celikates & Flynn, 2023). According to Blackwell, CT “value[s] modified subjectivity, that the researcher and society are influenced by their own perceptions and experience but that these are manipulated by power structures, e.g. culture, politics, race, gender, class and the mass media” (Ryan, 2018, p. 11).

#### **4.1 Ontology**

This study adopts a relativist ontology perspective, which claims that research processes and findings are influenced by the researcher’s subjectivity, including their experiences, cultural background, or gender (Levers, 2013). As Levers states, “reality is human experience and human experience is reality” (Levers, 2013, p. 2). In other words “[r]eality from a relativist perspective is not distinguishable from the subjective experience of it” (Guba & Lincoln, 2005, quoted in (Levers, 2013, p. 2). This philosophical approach seeks to uncover the multiple realities, which “can be explored and meaning made of them or reconstructed through human interactions between the researcher and the subjects of the research” (Chalmers et al., 2009; quoted in Otoo, 2020, p. 78). In the narrow sense, relativist ontology includes participant observation, focus groups, or interviews. However, for this study, articles and news releases are coded and interpreted to uncover the multiple perspectives on the subject. This aligns with qualitative research which aims for a thorough understanding of social environments from the research participant’s viewpoints (Bloomberg & Volpe, 2015; quoted in Otoo, 2020, p. 78). This perception challenges the “the scientific-realist assumption that reality is out there to be discovered” (Otoo, 2020, p. 78). Instead, subjective understandings of the issues are valid and require thorough engagement (Levers, 2013, p. 2).

#### **4.2 Epistemology**

My epistemological stance aligns with interpretivism, which posits that the way one reads human actions and experiences influences one’s understanding of the world ” (Sol & Heng, 2022, p. 92). This perspective underscores the essential role of the researcher, claiming there is no universal reality (Sol & Heng, 2022, p. 92). Furthermore, interpretivism

acknowledges “the indispensable subjectivity in the research process”, often involving “smaller sample sizes as opposed to the positivist approach” (Sol & Heng, 2022, p. 93). The interpretivist perspective takes into account the “complexity of each individual of the world and corresponding explanations” (Junjie & Yingxin, 2022, pp. 11–12). It centers around understanding and explaining the implications of human realities (Fossey et al., 2002; quoted in Yetiş & Bakırlioğlu, 2023, p. 3). Therefore, views that consider objective reality as existing independent of human experiences are considered overly simplistic. This is because multiple meaning can exist simultaneously and there is no such thing as objective reality (Denzin & Lincoln, 2005, p. 5; quoted in Junjie & Yingxin, 2022, pp. 11–12). Instead, in “the interpretive paradigm, knowledge is relative to particular circumstances—historical, temporal, cultural, subjective—and exists in multiple forms as representations of reality (interpretations by individuals)” (Benoliel, 1996, p. 407; quoted in Levers, 2013, 3). Rather than seeking universal truths, “[k]nowledge produced by the interpretive paradigm has limited transferability as it is usually fragmented and not unified into a coherent body” (Scotland, 2012, p. 12). Therefore, with an interpretivist perspective, I do not aim to generalize the findings of this thesis but rather to explore diverse perspectives and experience within the specific context of water insecurity in Atlantic Canada.

### **4.3 Concepts**

#### **4.3.1 Environmental Racism**

This study is guided by three main concepts. The first, which is essential in the specific context of examining water-related challenges in Canada, is the concept of Environmental Racism. It refers to “the disproportionate location and greater exposure of indigenous, Black and other racialized communities to polluting industries and other environmental hazards” (Zann, 2020b). Dr. Ingrid Waldron, Faculty of Health professor at Dalhousie University and the executive director of the Environmental Noxiousness, Racial Inequities and Community Health (ENRICH) Project based in Atlantic Canada, “studies the intersections of health, race, and socioeconomic status in communities affected by environmental pollution” (Butler, 2021). The concept has been implemented in the early 1990s but it received more awareness in Atlantic Canada through Waldron in 2012. She established the ENRICH Project to “address the impacts of environmental racism on Mi’kmaw and African Nova Scotian communities in Nova Scotia” (The ENRICH Project, 2024). The advancement in Waldron’s application of the concept is marked by its emphasis on analyzing decision-making processes instead of merely assessing outcomes (The ENRICH Project, 2024). According to Métis/Cree author Erin Marie Kosmo and Kanaka Maoli<sup>10</sup> A.M. Kahealani Pacheco, Environmental Racism can be understood as the “disproportionate impact of environmental hazards on people of color” (Kosmo & Pacheco, 2015, p. 15). Closely connected but

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<sup>10</sup> Na Kānaka Maoli is the political correct term for “the indigenous people of Hawai’i” Kenui (2003).

different is the concept of Environmental Justice, which is used by scholars as a concept discussing inequalities for First Nations as a response to environmental racism (Konsmo & Pacheco, 2015, p. 62). According to Mascarenhas, “[t]his ‘new’ form of environmental governance has broadly reduced legitimate opportunities for First Nations to participate in environmental governance that affects their health and welfare” (Mascarenhas, 2007, p. 565). This study focuses on Environmental Racism, which can be explored through an analysis of how historical discriminatory policies, economic disparities, and inadequate representation in decision-making processes contribute to the environmental injustices, like water pollution and or unreliable access to water, faced by Indigenous communities (Venkataraman et al. 2022).

According to Waldron,

“Environmental racism helps to explain the unequal impacts of hazards. [...] [It] is the idea that marginalized and racialized communities disproportionately live where they are affected by pollution, contamination, and the impacts of climate change, due to inequitable and unjust policies that are a result of historic and ongoing racism and colonialism” (Waldron, 2021).

Environmental Racism is often regarded as a subset of the broader climate change issue, but Waldron advises against this association. She emphasizes that Environmental Racism is a distinct problem involving “contaminated water, [...], polluted air [and] [...] the facilities or projects that create contaminated water, and polluted air, so completely different issues. But where they intersect is that interestingly, the same communities that tend to be most impacted by climate change are the exact same communities that are disproportionately impacted by environmental racism” (Morgan, 2023). According to Waldron, “environmental racism is sustained over generations through environmental policy that disregards the priorities of affected communities” (Butler, 2021). The concept is useful for examining the impact on marginalized communities lacking political influence to oppose harmful environment practices affecting their resources such as water due to their exclusion from decision-making entities (Waldron, 2021; Dhillon & Young, 2009, p. 24). Environmental Racism helps analyzing the historical and systemic dimensions of the issue, particularly how marginalized communities are disproportionately exposed to environmental hazards.

### **4.3.2 Slow Violence**

A related key concept is Rob Nixon’s Slow Violence. Nixon, Humanities and environment professor, introduces it as an approach that “exacerbates the vulnerability of ecosystems and of people who are poor, disempowered, and often involuntarily displaced, while fueling social conflicts that arise from desperation as life-sustaining conditions erode” (Harvard University Press, 2024). Particularly interesting for this research is the concept of time in relation to “the relative invisibility of slow violence” (Dawson, 2011). Nixon defines slow violence as “a violence that is neither spectacular nor instantaneous, but instead incremental, whose

calamitous repercussions are postponed for years, decades, or centuries. Emphasizing the temporal dispersion of slow violence can change the way we perceive and respond to a variety of social crises” (Dawson, 2011). Compared to the concept of Structural Violence, which would also be applicable to the situation of First Nations in Atlantic Canada, slow violence “is less static and offers ‘broader, more complex descriptive categories of violence enacted over time’” (Davies, 2022). According to Nixon, it is imperative to examine violence on varying scales and paces in the context of gradual change. However, Nixon argues that Structural and Slow Violence are inherently linked, thus, considering only one diminishes the concept’s depth (Davies, 2022). This concept allows for a nuanced examination of how long-term, gradual repercussions and systemic issues contribute to the ongoing situation of water insecurity, providing awareness of the types of solutions required to address both immediate and enduring challenges effectively.

### **4.3.3 Water Insecurity and Water Governance**

Lastly, I draw on the interrelated concepts of (Household) Water Insecurity and Water Governance. Water Insecurity describes “the inability to benefit from affordable, adequate, reliable and safe water” (Tallman et al., 2024, p. 1036). Moreover, it asserts a “level of risk [which] is not tolerable. Such risks include those associated with access to water, for example, for water supply and sanitation, irrigation, industry and ecosystem services, etc.” (Umma Habiba et al., 2013, p. 7). Nicole Wilson argues that “water insecurity experienced by Indigenous peoples is distinctly shaped by settler colonialism” (Wilson et al., 2021). For instance, Baskut Tuncak, UN special rapporteur in toxic chemicals asserted in 2019, that in Canada “Indigenous people are disproportionately affected by toxic exposures” and suffer from inadequate governance actions by the Canadian government (Lee & McLeod-Kilmurray, 2022). Therefore, the concept of water insecurity seeks to reveal the disparities in access to safe and reliable water, essential for maintaining a healthy way of life (Jepson et al. 2017; quoted in Miller et al., 2020, p. 321).

Water Governance, on the other hand, includes a “range of political, social, economic, and administrative systems that are in place to develop and manage water resources and the delivery of water services at different levels of society and for different uses” (Tortajada, 2010, p. 299). Governance has multiple definitions but it typically involves “multi-level participation beyond the state” (Tortajada, 2010, p. 298). Therefore, “governance considers the relations between those who govern and those who are governed” (Miller et al., 2020, p. 321).

Miller et al. propose to consider these two concepts jointly “because water insecurity may be a pathway through which poor water governance impacts human health” (Miller et al., 2020, p. 321). In other words, “improvements in water governance hold promise for the

improvement of both water insecurity and well-being” (Miller et al., 2020, p. 330). By combining water insecurity and water governance, a comprehensive understanding of the multifaceted water challenges faced by First Nations can be achieved.

## **5. Methodology**

### **5.1 Sensitive Considerations**

This study focuses on standards of living for Indigenous peoples. When discussing marginalized groups, two emerging concerns are wrongful definitions and homogenization. Historically, Indigenous peoples have been othered from society (Joseph, 2021). Therefore, it is essential to use sensitive and accurate language to avoid perpetuating these stereotypes. Indigenous peoples are not a homogenous group. In Canada, there are three Indigenous identities: Métis, Inuit and First Nations (Sawchuk, 2011). I follow the definitions proposed in the Terminology Guide by Queen’s University’s Office of Indigenous Initiatives (OIIC), located in Kingston, Canada. According to this guide, “Indigenous” is the appropriate term to refer to these communities equally. It has evolved as “the preferred term” for many since it “has been associated more with activism than government policy” (OIIC, 2024). The term “First Nations” refers to people from “[m]ost, but not all, reserve-based communities in Canada” (OIIC, 2024). Furthermore, it “can be applied to individuals, but, technically refers only to those who have Indian status under Canadian law as part of a recognized community” (OIIC, 2024). “Mi’kmaq” or “L’nuk” is the biggest First Nation community in Atlantic Canada<sup>11</sup>: Métis or Inuit are never First Nations: Métis are an Indigenous and Aboriginal Canadian group that have only recently been acknowledged “as ‘Indians’ under Canadian law” (OIIC, 2024). Inuit are “another Aboriginal group, historically located in the Arctic and legally and culturally distinct from First Nations or legally-defined Indians and Métis” (OIIC, 2024; CBU Library, 2024). This study focuses on First Nations in Canada.

Lastly, Queen’s University advises to avoid the term “native” as it is a historically derived word with colonial implications. The similar principles apply to terms like “Our Native People”, “Native Canadian”, “Indigenous Canadians”, or “Indian” (OIIC, 2024). Referring to the latter, the Canadian Government argues: “Today, the term “Indian” is used mostly in a legal sense. Most other uses are discouraged and considered offensive” (Library and Archives Canada, 2024). Although not all of these terms have negative associations, by adopting those, I would be “reinforcing a false narrative” and thus I will not use them in this study (OIIC, 2024). The wording “Indian” or “Native” will only occur in this study when directly quoted or referring to an official organization or context established earlier (Newfoundland & Labrador Public Libraries, 2024).

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<sup>11</sup> The spelling „Micmac“ is an outdated term (Newfoundland & Labrador Public Libraries (2024).

Further, it is essential to differentiate between the term colonialism, colonality, colonial and colonization. According to Maldonado-Torres, “[c]olonialism denotes a political and economic relation in which the sovereignty of a nation or a people rests on the power of another nation, which makes such nation an empire” (Maldonado-Torres, 2007, p. 243). Thus, it can be understood as a practice of acquiring control over another country or region, and exploiting it economically (Longley, 2021). Colonality describes the enduring effects of colonialism that persist even after the formal end of colonial rule. It “refers to long-standing patterns of power that emerged as a result of colonialism, but that define culture, labor, intersubjective relations, and knowledge production well beyond the strict limits of colonial administrations. Thus, colonality survives colonialism” (Maldonado-Torres, 2007, p. 243). The adjective “colonial” expresses all things “relating to a colony or colonialism” (Cambridge Dictionary, 2024), while colonization is “the act or practice of appropriating something that one does not own” (Merriam-Webster Dictionary, 2024). Together, these terms provide a comprehensive framework for analyzing the historical and ongoing impacts of colonial experiences on First Nations communities in Atlantic Canada.

## **5.2 Positionality**

As a non-Indigenous scholar from Germany, I approach the topic of water insecurity for First Nations in Atlantic Canada with a recognition of my position as an outsider to the communities I am studying. My background and identity shape the lens through which I view and analyze this subject, and I am attentive to the sensitivities involved in addressing issues that deeply affect First Nations peoples. I am aware of the risk of perpetuating the marginalization of Indigenous voices in my research and am committed to mitigating this by carefully contextualizing the sources I refer to. In the Data Collection section, I explain my efforts to engage directly with First Nations speakers through interviews. Unfortunately, I was unable to gain access to participants from within Indigenous communities. This may be for the better, given the vast firsthand experiences already documented in Western literature, resulting in a sentiment among Indigenous peoples of having been “researched to death” (C. Moore et al., 2017, p. 3). Given these limitations, I relied on existing literature and sources authored by Indigenous scholars to inform my analysis. By foregrounding these perspectives, I aim to respect and amplify Indigenous voices as much as possible within the scope of this study. My intention is to contribute to the discussion of water security in a way that acknowledges the crucial insights and experiences of First Nations peoples, while recognizing the inherent limitations of my outsider status.

## **5.3 Case Study Approach**

In this research, I analyze the Indigenous-led water authority AFNWA as a case study vital to the water access situation for First Nations in Atlantic Canada. Establishing the parameters

of a case study approach is essential. Generally, “[a] case study is a research approach that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context” (Crowe et al., 2011, p. 1). However, the issue is more multi-faceted and complex. For this research, I follow Simons’ definition, describing a case study as “an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a ‘real life’” (Simons, 2009, p. 21; quoted in Simons, 2014, p. 457). It “enables the researcher to answer ‘how’ and ‘why’ type questions, while taking into consideration how a phenomenon is influenced by the context within which it is situated” (Baxter & Jack, 2008, p. 556).

Furthermore, this study aligns with educational psychologist Robert E. Stake’s stance that “a case study is not a methodological choice, but rather a choice of what is to be studied – by whatever methods we choose to study the case” (Starman, 2013, p. 32). This study does not solely focus on the AFNWA. To understand the implications, effects and socio-political importance of the case, it is crucial to embed it in its environment. Therefore, I conducted a thematic analysis that investigates data from the AFNWA as well as the broader theme of water issues for First Nations in Atlantic Canada. I follow Yin’s (2003) definition of an explorative case study which is defined as “used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes” (quoted in Baxter & Jack, 2008, p. 548).

To effectively analyze the case, I delineate the research area to “ensure that [...] [the] study remains reasonable in scope” (Baxter & Jack, 2008, pp. 546–547). Establishing these boundaries helps “indicate the breadth and depth of the study and not simply the sample to be included” (Baxter & Jack, 2008, p. 547). The delineation is explained in detail in the data collection techniques and sampling method section.

### **5.3.1 Data Collection Techniques and Sampling Method**

While this research employs a qualitative approach, it entails quantitative characteristics, as the thematic analysis includes numerical data. Nevertheless, the analysis focuses on examining the socio-cultural implications of a First Nations-owned approach through an in-depth exploration of the involved perspectives. To thoroughly examine water governance and access issues for First Nations in Atlantic Canada, my initial approach involved seeking insights by conducting interviews with key stakeholders directly affected by or involved in addressing the crisis. I reached out to various institutions with formal and informal interview requests via e-mail. In November 2023, I contacted ISC, the AFNWA, and the CWRS. These interview partner choices represented three streamline perspectives: a natural science expertise (CWRS), political oversight (ISC), and Indigenous community activism (AFNWA). Unfortunately, I did not receive any responses at that time. In February 2024, I sent follow-up

requests which also went unanswered. By May 2024, I extended my outreach to include additional organizations such as the non-profit organization Canada Water Network, the newspaper Water Canada, the initiative Water Movement, the Atlantic Canada Water and Wastewater Association (ACWWA) and the Atlantic Policy Congress of First Nations Chiefs Secretariat (APC). I received no responses except from the AFNWA, who initially expressed openness to dialogue but subsequently did not follow up further.

However, since these issues have been extensively addressed through various methodologies, it might be preferable to explore alternative methods. A wide range of scholars pursued fieldwork and participatory action research (i.e. Hanrahan et al. 2014; (Black & McBean, 2017) (Waldner et al., 2017). Given the sensitive nature of the topic, obtaining firsthand information and collaboration are crucial (Porten & Loë, 2013). However, due to the extensive literature available, additional fieldwork and interviews may be less valuable and potentially exploitative. Addressing knowledge gaps by examining existing research data could be more beneficial (C. Moore et al., 2017, p. 3).

Thus, I reevaluated my methods. I opted to conduct a thematic analysis by examining online accessible relevant newspaper articles and documents by the mentioned contacted stakeholders. To guide my research effectively, I compiled a list of keywords to locate appropriate literature.

<b>Keywords (with Synonyms) for Literature Search</b>	
#1	<b>First Nations</b> First Nations Peoples OR Indigenous peoples OR Indigenous communities OR Indigen* OR Aboriginal OR First Nation*
#2	<b>Water</b> Drinking water OR water quality OR drink water OR safe water OR fresh water OR tap water OR water access OR wastewater
#3	<b>Atlantic Canada</b> OR Atlantic Provinces OR Atlantic OR Maritimes OR Maritime Provinces OR Nova Scotia OR New Brunswick OR Newfoundland Labrador OR Prince Edward Island
#4	<b>AFNWA</b> OR Atlantic First Nations Water Authority OR Atlantic Water Authority OR First Nations Water Authority OR First Nations Organization OR First Nations Initiative
#5	<b>Challenge*</b> OR limitation* OR barrier* OR tension* OR obstacle* OR problem*
#6	<b>Outcome*</b> OR effect* OR result OR* test* OR consequence* OR expectation*

*Table 1: Compiled List of Keywords.*

Between Juny 05, 2024, and June 09, 2024, I conducted a literature search using various combinations of these keywords. I narrowed the timeline to finds from 2011 – 2024. For instance, searching for a combination of #1, #2, and #3 on Google News yielded 73 results, of which only 32 were relevant to my research. Many results were unrelated, covering topics like fishing rights, indigenous art, awards and events such as the North American Indigenous Games. This issue of irrelevant results occurred frequently. Similarly, a search using keyword #4 produced 64 finds, with only 23 being useful due to overlapping results between the initial



and subsequent prompts. In addition to this search, I conducted a targeted search for publications by specific relevant stakeholders on their official websites. Utilizing the Dalhousie University Libraries' list of Indigenous news sources, for this study I selected three out of eight proposed outlets: Ku'ku'kwes news, a newspaper focusing on Indigenous news in Atlantic Canada, Mi'kmaq Maliseet Nations News, a First Nations owned monthly newspaper covering the Mi'kmaq people in Atlantic Canada; and the Aboriginal Peoples Television Network (APTN) (Dalhousie University Libraries, 2024). Furthermore, I included information from the Canadian Government, specifically via the ISC and CIRNAC, along with insights from The Council of Canadians, a non-profit organization advocating for clean water (The Council of Canadians, 2019).

I searched for articles using combinations of the specified keywords on all mentioned sources. Many entries overlapped with those found via the keyword search, especially from APTN and Ku'ku'kwes News. Lastly, to gain insight into the operations of the AFNWA, I examined documents available on their official website. I incorporated all seven documents listed under "AFNWA Documents" plus the July board report from each operating year and the January report of 2024, as this was the only report of this year available at the time. The chosen reports spanned the years 2020 to 2024, accounting to five reports. This selection was made randomly due to the substantial number of reports released annually, ranging in length from 10 to 350 pages, making a comprehensive analysis in the scope of this thesis unfeasible. Furthermore, I included the three available annual reports (2020/21, 2021/22, 2022/23) of the AFNWA in the analysis. News releases published by the AFNWA were incorporated in the study, but were already identified through the initial Google Search. This data collection resulted in a list of 88 items for the thematic analysis.

While technically all chosen articles can be accessed worldwide, I did not classify all of them as inter(-national) coverage. I made several distinctions as part of the sampling method, one of which concerns coverage. Newspaper and Press releases with inter(-national) coverage are those targeting an international audience, whereas regional coverage primarily addresses a specific, localized target group. For example, Ku'kuk'wes News is an independent newspaper covering news from Atlantic Canada's First Nations communities. Some articles are accessible online, but this does not imply they have international reach. I did not distinguish between national and international audiences because, for instance, releases from the Canadian Government are equally important for both national and international readers.<sup>12</sup> This classification method ensures that the analysis takes into account the different levels of reach and influence of the sources, providing insight into the impact of the AFNWA's approach in various contexts.

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<sup>12</sup> For the distinction of data into regional and national coverage, see Appendix F.

### 5.3.2 Data Analysis Procedure

To analyze the gathered data, I conducted a reflexive thematic analysis using the research software NVivo. This analysis followed the six-phase process outlined by Braun and Clarke because it allows for flexibility in exploratory research (Braun & Clarke, 2012). First, all data were compiled into a single project in NVivo. As Byrne notes, “[w]hile the six phases are organised in a logical sequential order, the researcher should be cognisant that the analysis is not a linear process of moving forward through the phases” (Byrne, 2021, p. 1398).

In line with Braun and Clarke’s guidelines, I started with Phase One: familiarising myself with the data. This involved “reading and re-reading of the entire dataset”, which comprised the 88 selected texts for the thematic analysis (Byrne, 2021, p. 1398).

In Phase Two, I generated initial codes. Codes are “shorthand descriptive or interpretive labels for pieces of information that may be of relevance to the research question(s)” (Byrne, 2021, p. 1399). Systematically reviewing each article, I created and redefined codes from a blank set, coding relevant information as detailed as possible to identify overarching themes in later steps. This process is also known as “inductive coding” because it “allows a user to code a textual unit (e.g. paragraphs, sentences, words) that is close to (i.e. the basic or lowest level) the data without being predicated on any theory, construct or concept” (Chandra & Shang, 2019, p. 101). Byrne emphasizes that “[t]hrough repeated iterations of coding and further familiarisation, the researcher can identify which codes are conducive to interpreting themes and which can be discarded” (Byrne, 2021, p. 1400). Moreover, Byrne asserts that there is no limit to the number of codes that can apply to a single piece of data, noting that “any data item can be coded in multiple ways and for multiple meanings” (Byrne, 2021, p. 1402). This approach was integral to my analysis. For example, the statement “For the first time in Canada, Indigenous peoples will operate and manage the service delivery for water and wastewater, key elements for self-determination” (SaltWire Opinion, 2022) was coded both for “Indigenous Expertise to the Forefront” and as one argument supporting the “Yes” side of whether this approach is new.

Phase Three of the process “begins when all relevant data items have been coded” (Byrne, 2021, p. 1403). During this phase, individual codes were compiled into themes to interpret the “aggregated meaning and meaningfulness across the dataset” (Byrne, 2021, p. 1403). Related codes were grouped into themes or sub-themes (Byrne, 2021, p. 1403). Additionally, I followed the proposition of creating a “miscellaneous theme (or category) to contain all the codes that do not appear to fit in among any prospective themes” (Byrne, 2021, p. 1403).

I encountered the issue described by Byrne, where “with too many themes the analysis may become unwieldy and incoherent, whereas too few themes can result in the analysis failing to explore fully the depth and breadth of the data” (Byrne, 2021, p. 1403). This resulted in a lengthy process of creating and deleting themes to identify the essential topics.

Reviewing potential themes is Phase Four of Braun and Clarke's six-phase process of thematic analysis. This involved revising constructed themes and codes as necessary, focusing on the relationship between the data items informing the themes and the overall data set (Byrne, 2021, p. 1404). Revision here denotes "[t]hemes are assessed as to how well they provide the most apt interpretation of the data in relation to the research question(s)" (Byrne, 2021, pp. 1404–1405). Characteristic of qualitative research, the process is not linear and involves frequent back-and-forth transitions between phases two, three and four.

In the fifth phase, themes are organized in relation to data set and the research question(s) (Byrne, 2021, p. 1407). Braun and Clarke advise to "identify which data items to use as extracts when writing up the results of the analysis" in this step (Byrne, 2021, p. 1407). I present data extracts illustratively in charts, with themes (items) represented on the X-axis and the number of references coded to each theme on the Y-axis. Each theme is color-coded for clarity. The discussion section provides a detailed analysis of the identified themes, linking them to the theoretical arguments discussed earlier in this study (Byrne, 2021, p. 1407). Furthermore, I examine the codes to understand what has been specifically said on the matter and by whom, linking these insights to the research questions and the previously stated theoretical framework.

The last phase contains producing the report. According to Braun and Clarke "the write-up of qualitative research is very much interwoven into the entire process of the analysis", emphasizing the non-linear nature of the process (Byrne, 2021, p. 1409). At this stage, I establish an order for presenting the themes to ensure they connect logically, "building a cogent narrative of the data" (Byrne, 2021, p. 1410).

#### **5.4 Limitations**

I encountered limitations during both data collection and analysis. For instance, access to the full range of articles from Mikmaq Maliseet News was restricted by a paywall. Additionally, the 88 articles varied significantly in length, potentially biasing the analysis, because longer documents like an 80-page AFNWA report produce more codes than shorter news releases. To enhance transparency, I compiled a comprehensive list of all sources detailing their number of coding references associated with each finding. This study does not aim to provide an exhaustive presentation of sentiments towards the AFNWA. The data selection might have differed if collected at a different time, using another search platform, or through a different VPN. Furthermore, some news outlets use identical wording, suggesting the use of the same press releases. For example, both the AFNWA and ISC described the Service Delivery Transfer Agreement (SDTA) on November 7, 2022 with the same language like "milestones" and "transfer of responsibility for the operation, maintenance, and capital upgrades of all water and wastewater assets in participating First Nations to the Indigenous-

led AFNWA” (ISC, 2022; AFNWA, 2022c). This overlap indicates a pre-agreed release, suggesting that we should be cautious about overinterpreting these terms as reflecting true sentiments of either party. Especially understanding the government’s perspective, given the historical context, would be highly informative, but this similarity constraints such insights.

## **6 Case Study**

### **6.1 Atlantic Canada and First Nations**

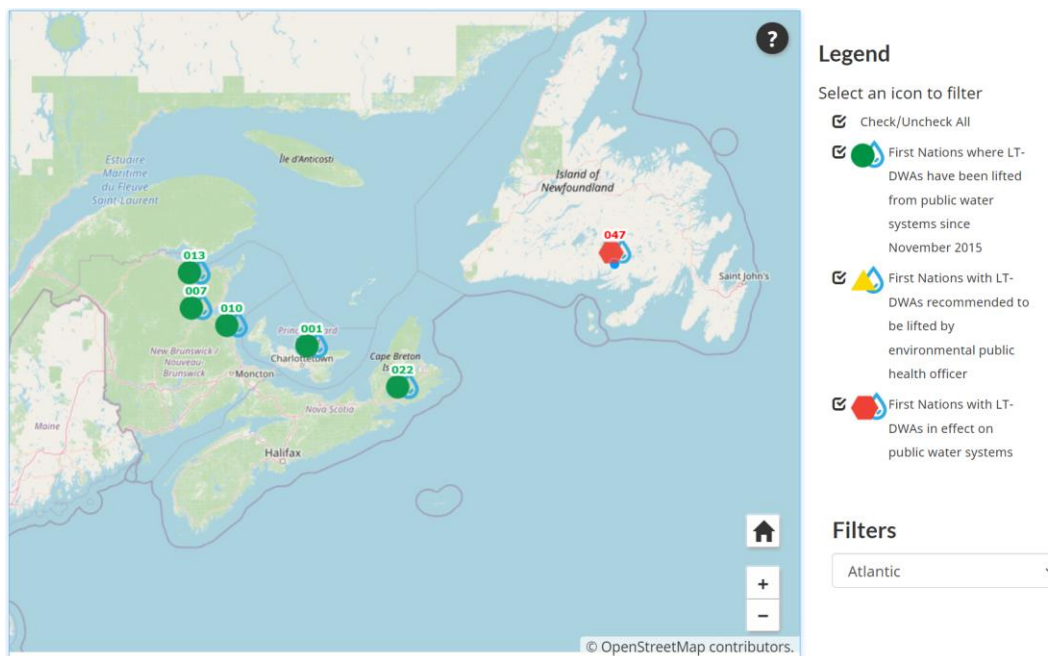
This research focuses on the region on the east coast of Canada called Atlantic Canada. It comprises the provinces “Newfoundland, Prince Edward Island [PEI], Nova Scotia and New Brunswick” (Parks, 1965, p. 76). Since 2001, the province Newfoundland is officially known as Newfoundland and Labrador, although the island of Newfoundland and the mainland portion of Labrador have long before been considered parts of the same province (Baker, 2003, p. 25). In some sources, the region of Atlantic Canada is also referred to as “the Maritime provinces” or the “Maritimes” (Parks, 1965, p. 77). According to the Canadian government, there is a distinction between the terms Atlantic Canada and Maritime Canada. The former refers to the entire region, while the latter excludes Newfoundland and Labrador (Natural Resources Canada, 2019).

A 2021 Population Census “counted more than 1.8 million (1,807,250) Indigenous people in Canada, making up 5% of the country’s total population (Statistics Canada, 2022). First Nations make up the largest group with 1,048,405 people. Atlantic Canada accounts for 7.6 % of the First Nations population in Canada (Statistics Canada, 2022). Between 2016 and 2021, the Indigenous population experienced a growth rate of 9.4%, which is almost twice as fast as the rate of the non-Indigenous population over the same timeframe (Statistics Canada, 2023). Indigenous groups are, on average, younger than non-Indigenous groups, Therefore, with a large population, a fast growth rate, and a younger age profile, Indigenous peoples represent a significant demographic within Canada (Statistics Canada, 2023).

Atlantic Canada is home to 34 First Nations communities. Nova Scotia inhabits 13 First Nations communities (Office of L’nu Affairs, 2018). The largest First Nations community in Nova Scotia are the Mi’kmaw, or Lnu (Waldron, 2021). Among the Mi’kmaq bands in Nova Scotia, the most populated is the Eskasoni First Nation (Eskasoni Mi’kmaw Nation, 2024). According to the Aboriginal Affairs and Northern Development Canada (AANDC), there are “16,245 registered Indians in Nova Scotia and of these, 5,877 live off-reserve” (Office of L’nu Affairs, 2015). This is the most recent number available. Since 2017, AANDC has been replaced by two new departments: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), responsible for Indigenous peoples, treaties, agreements and reconciliation, and ISC, which oversees education, social programs, fiscal relationships and water services in First Nations communities (INAC, 2024). Approximately 17,510 First Nations people live in New Brunswick, with 10,098 residing on reserve and 7,412 living off reserve (New Brunswick

Canada, 2024). This translates to a total of 16 First Nations communities in New Brunswick (Indigenous Affairs New Brunswick, 2024). Two First Nations communities are located on PEI (Indigenous PEI, 2023). Out of 1,234 people, 40,9% or 494 individuals, live on reserve (Statistics Canada, 2021). Lastly, Newfoundland and Labrador has 19,080 registered First Nations people, with 12,8% people living on reserve (Statistics Canada, 2021). These live in three First Nations communities. Atlantic Canada's First Nations "community populations range from 35 to 3,700 people" (Reed et al., 2013, p. 13).

Since the implementation of long-term drinking advisories, First Nations communities in Atlantic Canada experienced eight such advisories, with seven having been lifted (ISC, 2024b). The most recent advisory, implemented in Miawpukek First Nation in Newfoundland and Labrador in 2022, is still ongoing (see Figure 1).



**Figure 1: Long-Term Drinking Water Advisories in Atlantic Canada as of 31.07.2024.**  
<https://www.sac-isc.gc.ca/eng/1620925418298/1620925434679#wetTableMain>.

This situation reflects to Nixon's Slow Violence because "effects of unsafe drinking water accumulate over years, and intersect with other failures such as inadequate nutritional support and the underfunding of Indigenous child welfare and education, producing the health crises we see in Indigenous communities" (Midzain-Gobin, 2021).

## 6.2 The Atlantic First Nations Water Authority Inc.

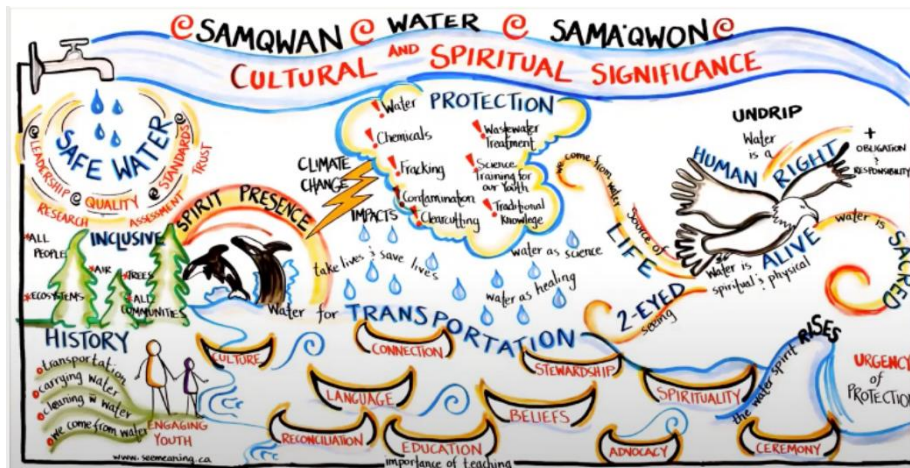
The historical contextualization section highlights that self-governance for First Nations in Canada has been substantially constrained. The AFNWA is the first of its kind in Canada that addresses that issue by establishing an "independent, Indigenous-led water utility" with the mission to "provide, safe, clean drinking water and wastewater in all participating First Nations communities in Atlantic Canada, delivered by a regional water authority owned and

operated by First Nations” (AFNWA, 2022b, p. 70).

The evolution of the AFNWA involved over fifteen years of planning and collaboration. According to the AFNWA Business Plan of 2022, “the vision for a water utility by First Nations, for First Nations, was first discussed in forums established by the Atlantic Policy for First Nations Chiefs Secretariat [APC] as early as 2003” (AFNWA, 2022b, p. 11). The following years saw a deterioration in water access and security for First Nations, as highlighted in the historical contextualization. The formalization of a First Nations-owned water utility began in 2009, in cooperation with the APC and Graham Gagnon, Director of the CWRS (Charlton, 2020). It took an additional eight years of research and planning until the APC “tendered a project that would include cost estimates to be generated for the AFNWA as a functioning utility” in 2017 (AFNWA, 2022b, p. 11).

Initially, the organization intended to operate as a public-private partnership. A public-private partnership (PPP or P3) is defined as “a contract between a public sector entity and a private sector entity that outlines the provision of assets and the delivery of services” (Office of the Auditor General of British Columbia, 2012, p. 1). In 2015, Simon Osmond, a senior policy analyst from the APC, proposed the creation of the “First Nations Clean Water Initiative” (FNWA) for Atlantic Canada. This would entail that the “band would do a temporary surrender the land and assets tied to the water systems to the FNWA. In turn, FNWA [...] would oversee water and wastewater operations for the bands. And under a P3 model, FNWA would sub-lease the land to the private company over a 25 year agreement” (Patterson, 2015). However, water privatization was deemed unsuitable due to concerns articulated by Emma Lui of the Council of Canadians, who noted such models have a poor track record: “P3s in other regions, in other countries, other municipalities, have caused some serious problems in price increases for water. We see a decrease in water quality” (Patterson, 2015).

Therefore, in July 2018, the APC, in collaboration with various engineering companies such as Halifax Water, the Ulnooweg Development Corporation, which is an Atlantic Canada based not-for-profit organization that focuses on Indigenous communities businesses, and the CWRS, officially incorporated the AFNWA (Googoo, 2018). The vision of the AFNWA is to “to be a recognized leader for the delivery of water and wastewater services to First Nation communities across Canada” (AFNWA, 2022b, p. 70; AFNWA, 2021a, p. 4).

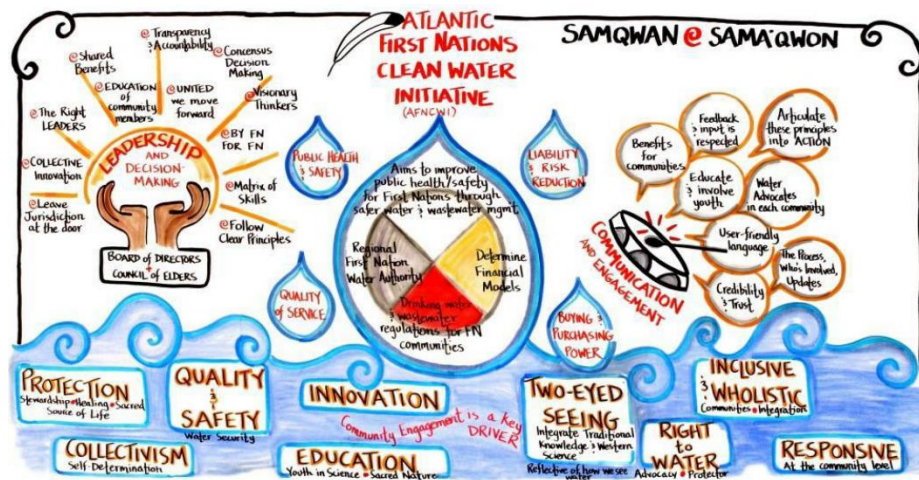


**Figure 2: Storyboard of Cultural and Spiritual Significance of Water to be Incorporated in the AFNWA.**  
 Source: Toronto Metropolitan University (2020). Urban Water TMU Seminar on the Atlantic First Nations Water Authority.  
<https://www.torontomu.ca/water/urban-water-management--governance/outreach/carl-yates/>.

On October 28, 2020, Carl Yates, then interim CEO of the AFNWA, held a seminar at Toronto Metropolitan University discussing the work of the AFNWA. During this seminar, Yates emphasized the importance of ITK within the AFNWA framework (Toronto Metropolitan University, 2020). He presented a storyboard, developed by Elders in a workshop, which illustrates the foundational principles of First Nations cultural and spiritual traditions (see Figure 2). The storyboard incorporates the concept of Two-Eyed Seeing, which integrates both Indigenous and Western perspectives (AFNWA, 2020b, p. 4). On the right side, a dove is depicted with the phrase “water is a human right” inscribed above it, and the statement “water is alive” written below (Fig. 2). It symbolizes the duality of the physical and spiritual aspects of water united in the AFNWA. Yates notes that First Nations adopt a more holistic approach to water compared to non-Indigenous populations, an aspect that has been absent from discussions on water security before (Toronto Metropolitan University, 2020).

Figure Three illustrates the key components of the Atlantic First Nations Clean Water Initiative (AFNCWI), the predecessor of the AFNWA. These emphasize two-eyed seeing, leadership and decision-making by both Elders and technical experts, and balancing service quality with a relationship to nature. Together, these components contribute to intergenerational equity, a core principle for First Nations, who believe “each new generation is responsible to ensure the survival of the seventh generation” (Clarkson et al., 1992, p. 3). This principle is integral to the long-term asset program of the AFNWA (Toronto Metropolitan University, 2020).

As of July 2024, 12 First Nations communities are members of the AFNWA, including Eskasoni First Nation. Additionally, 19 participated in the long-term asset plan and the Supervisory, Control, and Data Acquisition (SCADA) monitoring system (AFNWA, 2024e)



**Figure 3: Key Components of the AFNWA Structure.**

Source: Toronto Metropolitan University (2020). Urban Water TMU Seminar on the Atlantic First Nations Water Authority. <https://www.torontomu.ca/water/urban-water-management---governance/outreach/carl-yates/>.

### 6.3 Findings

This study aims to understand the impact of an Indigenous-led organization in addressing water insecurity. Therefore, the thematic analysis focused on identifying the motivations behind the strategies, differences in operations compared to other initiatives, potential cooperations and conflicts, as well as possible lessons learned. This section presents the findings of the analysis<sup>13</sup>.

#### 6.3.1 Creation of the AFNWA

Through the thematic analysis, seven themes emerged as rationales for the creation of the AFNWA. A total of 157 coding references across 50 out of the 88 files addressed these.

These overarching identified themes are Lack of Resources, Improving Self-Governance, Equal Water Standards, Lack of Indigenous Knowledge, Lack of Effective Governance, Building Trust, and Colonial Past<sup>14 15</sup>. With 65 coding references, the most frequently mentioned reasons were Lack of Resources and Improving Self-Governance. The third most cited reason, with 22 references, was the Lack of Indigenous Knowledge in Water Governance approaches. Lack of Indigenous Knowledge was fourth with 16 references. Lack of Effective Governance was coded five times, and three mentioned Building Trust. The theme with the fewest mentions, with only two references, was addressing the Colonial Past. Some of these overarching themes include various sub-themes.

Lack of Resources mainly refers to the Lack of Long-term Funding (25 references), but also includes the Aging Infrastructure of water services (10), Low Wages for the workers (9), Chronic Underfunding (10), Insufficient Support to Cover the Needs (7), Overworking (6) and the issue of Making First Nations Compete with Each Other for Funding (3).

<sup>13</sup> For detailed source distribution, see App E: Coding References.

<sup>14</sup> See Appendix A1: Rationale for the Strategies of the AFNWA.

<sup>15</sup> See App. E3 for source distribution.



Lack of Indigenous Knowledge includes sub-themes such as the AFNWA advancing in Listening to Community Needs (1 reference), using Appropriate Language (1), Creation of an Indigenous-led Board of Directors (1), Incorporation of ITK Corporate Values (9), an Elders Advisory Lodge (7), Two-Eyed Seeing (1), and Implementing Training guided by Indigenous Knowledge (1).

Equal Water Standards contains progress in Addressing Knowledge Gaps in Water and Wastewater Services(1), the Creation of a Risk Management Framework (1), Improved Level of Service (1), Improving Water and Performance Standards (2), and the Creation of a Monitoring System (1).

### **6.3.2 Strategies of the AFNWA**

The thematic analysis further revealed the strategies of the organization. The newspaper articles and government reports named various characteristics that make the AFNWA stand out<sup>16 17</sup>.

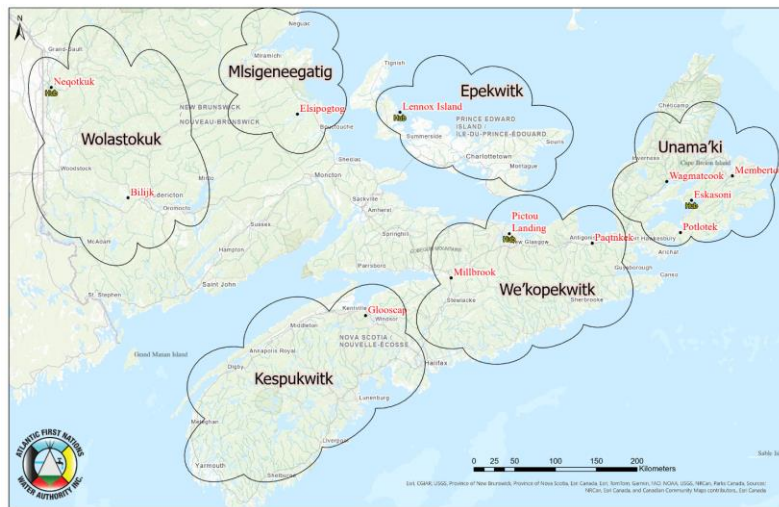
Among these, Long-Term Funding is the most frequently cited, with 63 references. This theme includes multiple facets, such as improvements in pay scales, government agreements, long-term business plans, cost calculation strategies, and support by various institutions. These aspects will receive more attention in the discussion. The creation of a Hub and Spoke Model as a unique characteristic of the AFNWA was second-most mentioned with 49 coding references. Third in place is an effective Monitoring System with 36 references. The “FSD” (Full Service Decentralized) strategy received 28 mentions. Combined with the Hub and Spoke model, they represent the largest group of mentions in this section. The FSD approach is distinct from, but overlaps with the characteristics of the hubs and spoke model. The FSD structure was chosen by the AFNWA out of four options, seen as “the most aligned to their cultural and spiritual considerations” (AFNWA, 2021b, p. 5) and “to provide the highest level of service and direct benefits to the communities served” (Halifax Water, 2017, p. 31). The AFNWA argues that the FSD “corporate structure is a radical departure from the status quo” (AFNWA, 2022b, p. 68) and “[t]his approach will not go where others have tread but instead blaze a trail for others to follow” (AFNWA, 2021b, p. 5). Moreover, the Hub-and-Spoke-Model is the operation model of the AFNWA. “This type of system arranges operations into a network of service zones with *hubs* that centralize expertise and operational knowledge in geographically compatible locations close to communities (*spokes*) and their community-based operators” (AFNWA, 2024c). Hubs are supposed to be a maximum distance of a 2.5 hour drive away from the communities to

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<sup>16</sup> See App. A2: Unique Characteristics of the AFNWA.

<sup>17</sup> See App. E2 for source distribution.

ensure a fast response system and secured support (AFNWA, 2022b, p. 15). Figure 4 shows the six service zones of the hub-and-spoke model.



**Figure 4: Service Areas of the Hub-and-Spoke-Approach.**

Source: AFNWA (2024). Service Delivery Through a 'Hub-and-Spoke' System. <https://www.afnwa.ca/communities/service-delivery>.

The original hub-and-spoke model was created “during a workshop with chiefs, elder, and operators” (see Fig. 5) (Gould, 2022, p. 53). In this model, the hubs are represented by “colored wigwams [...]”; the larger, yellow wigwam represents the AFNWA headquarters in Millbrook, a Mi'kmaq community in Nova Scotia” (Gould, 2022, pp. 52–53).



**Figure 5: Original FSD Hub-and-Spoke Model**

Source: Gould (2022). Atlantic First Nations Water Authority: A Utility Created by and to Serve First Nations, p.53. <https://awwa.onlinelibrary.wiley.com/doi/pdf/10.1002/awwa.1885>.

Other characteristics standing out are the Prioritization of First Nations (19 references), Capacity Building (7), Regional Approach (3), Self-Determination (2), and a Faster Response Mechanism (2)

### 6.3.3 Uniqueness

While the AFNWA argues that it presents a new concept, the thematic analysis does not clearly support this claim<sup>18 19</sup>. The analysis reveals division of opinions, with some sources arguing that it is indeed a new approach, while others contend that it is not. It should be noted that categorizing these perspectives as “yes” or “no” is an oversimplification.

Five references in two files argue that the concept is not entirely new<sup>20</sup>. One of these references is the AFNWA itself. In its 10-Year Business Plan, the organisation states “the idea of a water and wastewater utility owned and operated by First Nations, for First Nations, is not a new concept” (AFNWA, 2022b, p. 9). The plan further indicates that the AFNWA follows best practices and parts of it are modeled after other established frameworks. For instance, the Hub and Spoke Model “has been used successfully in other areas in Canada, most notably by the Ontario Clean Water Agency [OCWA]” (AFNWA, 2022b, p. 39). Additionally, certain, not specifically defined, governance structures were adopted from the Halifax Regional Municipality (HRM) (Meloney, 2018).

On the other hand, four documents mentioned ten coding references arguing for the uniqueness of the initiative<sup>21</sup>. However, the majority of these stem from the AFNWA, so the objectivity of this result should be questioned. In the same business plan, in which the organization stated it not to be a new concept, it defines its corporate structure as “a radical departure from the status quo” (AFNWA, 2022b, p. 68). In its 2020-21 Annual Report, Chief Wilbert Marshall, Board Chair of the organization, says it is a “significant first in Canada for our people” (AFNWA, 2021a, p. 6). In an AFNWA-conducted “survey across Canada”, they found “no directly comparable national precedents that exists for the delivery of water and wastewater service by one First Nation governing body” (AFNWA, 2021a, p. 32).

However, several alternative initiatives in Canada aim to address the water crisis<sup>22</sup>. Many of these are explained in the AFNWA Business Case, highlighting that they stem from diverse origins. Two files and ten references mention a filtration system from Brewal Ireland Ltd., an Irish company, which promised to “remove manganese and iron from the lake water” (Weeks & Mansfield, 2017b; Googoo, 2017). There are grassroots First Nations approaches, such as a First Nations-owned spring water company in New Brunswick (Samson, 2022) and a community-based water management committee in Alberta, which “brings together community members, leadership, consultants, academics and non-profits” (Black & Swampy, 2021).

In 2013, the First Nations Health Authority (FNHA) was implemented in British Columbia as “the first provincewide health authority of its kind in Canada”, with the aim “to improve the

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<sup>18</sup> See App. A3: Is the Approach of the AFNWA New?

<sup>19</sup> See App. E1 for source distribution.

<sup>20</sup> See App. A4: No-Answers in Detail.

<sup>21</sup> See App A5: Yes-Answers in Detail.

<sup>22</sup> See App. B1: Alternative Initiatives to AFNWA.

health and well-being of First Nations and Aboriginal people in British Columbia (AFNWA, 2022b, p. 32) (Bulwer, 2014). Although not explicitly focused on water security, the “AFNWA was informed by the establishment of the FNHA and the Health Canada's First Nations Inuit Health Branch - Pacific Region as they provided an important milestone for First Nations” (AFNWA, 2021b, p. 32).

An example of federal government support is the provision of portable showers in regions lacking water access (K. Moore, 2016). When looking at these alternative initiatives alongside the AFNWA, it becomes evident that the organization, with its comprehensive governance structure and long-term planning, represents a pioneering approach in Canada.

#### **6.3.4 Conflicts**

The AFNWA receives both support and challenges from various stakeholders. The thematic analysis revealed more cooperation than conflict<sup>23</sup>. While 24 coding references in 14 files uncovered struggles, 147 references across 42 files mentioned conflicts with actors. To understand this in detail, I examined the origins of the issues, stemming from two main sources: the Canadian Government and the “Atlantic Canada Population”, with concerns primarily voiced by First Nations in the region<sup>24</sup>. More issues were raised by First Nations than by the Government<sup>25</sup>.

The issues voiced by First Nations are primarily categorized as Distrust (8 references), Doubt in Transformational Change (5), Financial Burden (4), and Satisfaction with the Status Quo of Water Access and Safety (2)<sup>26</sup>. Distrust refers to doubts towards initiatives like the AFNWA due to past broken promises by the Government. For instance, Potlotek First Nations Chief Marshall stated “his community is skeptical, because water has been shoddy on and off for decade” (Zoledziowski, 2020). Additionally, Gregg Brewer, a water operator in Tobique First Nation in New Brunswick remarked that “the AFNWA is a bit of an experiment” (McSheffrey et al., 2021).

Doubt in Transformational Change refers to the AFNWA presenting a local solution rather than one adaptable to other regions. For instance, Chernos notes, “[t]he AFNWA is a really great example of how it can work within a regionalized context, though it’s not necessarily something that can work in all regions” (Chernos, 2022b). Consequently, some First Nations, like those in PEI, hesitate to join the AFNWA, arguing that “water issues [...] are unique to the province and the band councils are still trying to determine if it makes sense to be a participant in a regional authority” (Day, 2020).

A major concern is the Financial Burden, which aligns with the historical challenges in water access for First Nations in Canada. There is skepticism about secured funding for water

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<sup>23</sup> See App. C1: Conflicts vs Cooperation with the AFNWA:

<sup>24</sup> See App. E4 for source distribution.

<sup>25</sup> See App. C2: Conflicts with the AFNWA.

<sup>26</sup> See App C3: Conflicts with First Nations in Detail.

services in the future. We'koqma'q First Nation Chief Googoo expressed doubt about joining, citing financial uncertainties: “[W]ho’s going to pay for it (in the future)? Will the bands have to individually pay for it to function or will they be putting metres on peoples houses?” (Zoledziowski, 2020). Roache seconds these concerns, stating „Some think the model may leave First Nations paying for their own drinking water. [...] And the questions are pouring in. [...] ‘Is it going to be privatized? Will you be paying for your water? So you have to give up your inventory and all that? Whose responsibility is it going to be? Whose neck is on the line?’ ” (Roache, 2015).

Additionally, some communities are satisfied with their current water situation and are reluctant to risk joining an organization with uncertain long-term effects. For example, We'koqma'q First Nation Chief Rod Googoo “did not sign on to the AFNWA because the water in his community is already adequate and he is working with Inverness County on wastewater treatment” (Zoledziowski, 2020).

It is important to note that these critiques stem from a limited number of sources, raising questions about how representative these sentiments are.

The conflicts surrounding the AFNWA highlight the strained relationship between First Nations and the Canadian Government, which in part contributes to the explanation why the AFNWA was created<sup>27</sup>. One major issue is the perceived Lack of Systemic Support, voiced by First Nations with two coding references. John Paul, executive director of the APC, expressed dissatisfaction: “ ‘Why nothing was done to come up with a plan or execute a plan to solve this problem is very frustrating’ ” (Weeks & Mansfield, 2017b).

Additionally, there is exasperation with government involvement. Balpataky states: “As First Nations are more actively deploying their own governance locally, regionally, and nationally, a growing body of Canadian leaders are advocating for the federal government to get out of the way” (Balpataky, 2018). One reference highlights the lack of transparency in project plans and funding from the federal government (Weeks & Mansfield, 2017a). This aligns with resentment among First Nations band members towards accepting government money due to its colonial past (Googoo, 2019).

### **6.3.5 Cooperation**

The analysis revealed extensive collaboration with various stakeholders. For clarity, these actors were categorized into four main groups: Political, Activist, Scientific, and Engineering<sup>28</sup>. The presence of both political and activist perspectives indicates that stakeholder positions are nuanced and not strictly binary. The category “Scientific” gathered the highest number of references, with 55 coding references. “Political” cooperation was second most referenced, with 49 mentions, followed the “Engineering” theme with 40

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<sup>27</sup> See App. C4: Conflicts with the Canadian Government in Detail.

<sup>28</sup> See App. C5: Cooperation with the AFNWA in Detail.

mentions. Collaboration with the “Activist” perspective, the least referenced, was mentioned 17 times in the analyzed data.

#### **6.3.5.1 Scientific Cooperation**

“Scientific” cooperation reveals three primary partners: “Dalhousie University, the “CWRS”, and the “First Nations Infrastructure Institute (FNII)”. “Dalhousie University”, based in Halifax, is cited 24 times, while CWRS, a research center within Dalhousie is mentioned 17 times<sup>29</sup>. FNII is referenced four times. Although CWRS is part of Dalhousie, some sources distinguish between the two, leading to their separate classification.

CWRS has been central in the formation of the AFNWA, contributing research and analyses on water issues in Atlantic Canada. It further is responsible for developing drinking water compliance monitoring regulations (AFNWA, 2022b, p. 24) and proposed interim oversight arrangements until a national supervisor is established (AFNWA, 2022b, p. 40). Additionally, CWRS is essential in capacity building (Dalhousie News, 2023).

As noted by Dalhousie University, the institution “was the natural choice, [...] since it already had a long-established relationship with the First Nations focused on water safety” (Riley, 2024). Dalhousie conducts studies on improving water quality. (Riley, 2024). The university is further developing a course “focused on integrating Indigenous Ways Knowing into traditional engineering curriculum” (Riley, 2024).

FNII is tasked with creating a comprehensive water wastewater infrastructure plan (AFNWA, 2022b), described by the AFNWA as an “infrastructure master plan for the community” (AFNWA, 2023a).

#### **6.3.5.2 Political Cooperation**

The political cooperation between the Canadian government and the AFNWA is marked by key Governance Agreements, with 21 coding references highlighting this collaboration<sup>30</sup>. 14 references indicate a general aim to Enhance the Relationship between the Government and First Nations through the AFNWA. Funding Support is cited in eight references, while five references discuss a New Drinking Water Legislation. Three codes highlight a shift towards Solution Seeking-behavior between First Nations and the Canadian government.

The governance agreements involve two main accords between the AFNWA and the Canadian government, resulting in a novel governance structure. In June 2020, both parties signed a framework agreement acting as “a catalyst to make the whole enterprise possible” (Chernos, 2022b). This non-binding agreement affects “funding, liability and authority for the delivery of water and wastewater services, including funding for operations and capital project delivery in Participating First Nations communities that have signed Band Council

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<sup>29</sup> See App. C6: Scientific Cooperation in Detail.

<sup>30</sup> See App. C7: Political Cooperation in Detail.

Resolutions (BCRs) agreeing to become members of the AFNWA” (AFNWA, 2020a, p. 3). On November 7, 2022, the AFNWA signed a Service Delivery Transfer Agreement (SDTA) with the Ministry of ISC (ISC, 2022). Enabling First Nations “to now officially join the water authority after receiving approval from their community members” (ISC, 2022), this date marked a precedent in Canada, establishing the AFNWA as “the first Indigenous Water Utility in the country” (ISC, 2022). The AFNWA defines the legally binding SDTA as “a significant milestone in advancing reconciliation” (AFNWA, 2022c). It transferred the “responsibility for the operation, maintenance, and capital upgrades of all water and wastewater assets in participating First Nations to the Indigenous-led AFNWA” (ISC, 2022; ISC, 2023a).

An Enhanced Relationship is described both by political organs as well as by the AFNWA. According to ISC, “the Government of Canada and First Nations communities are working in partnership to build long-term solutions that support sustainable access to safe, clean drinking water and restore trust in the water supply” (ISC, 2021). AFNWA’s interim CEO Carl Yates corroborated this stating, “[ISC] has shown commitment to this framework agreement. This is the most I’ve seen to date and they’re certainly staring us in the eyes” (Meloney, 2020), and that “ISC has been very co-operative to date” (McSheffrey et al., 2021).

Funding Support has also been enhanced. Previously, ISC covered 80% of maintenance funding (AFNWA, 2020a, p. 1). Therefore, “First Nations community leadership groups such as Chief and Councils must assume 20% of the costs for water infrastructure, and operations and maintenance, and are additionally tasked with monitoring water safety and ensuring the presence of trained operators” (Bradford, Bharadwaj, et al., 2016, p. 1). With the establishment of the AFNWA, this arrangement has shifted to include long-term funding commitments. “The federal government has committed about \$257 million in funding, including \$173 million over 10 years for operations” (Baker III, 2022; ISC, 2023a). This includes both an initial sum (McSheffrey et al., 2021), and ongoing funding from ISC, meeting precisely the requested amount (CBC News New Brunswick, 2022). Furthermore, “AFNWA’s funding will flow from ISC, but it will have autonomy over how the money is spent” (McSheffrey et al., 2021).

A New Drinking Water Legislation refers to the 2023 proposed “First Nations Drinking Water and Wastewater Legislation” that “will allow for First Nations develop regulatory standards” (AFNWA, 2023b). This has been praised by both the ISC and the AFNWA. The Honourable Patty Haidu, Minister of ISC stated, “[c]reated with First Nations, this legislation is the foundation of clean and safe drinking water for generations to come. It establishes the rights and supports that should have always been there for First Nations” (ISC, 2023d). The AFNWA expressed support, recognizing it as “a step in the right direction and a unique opportunity for First Nations self-governance” (AFNWA, 2023b).

Solution Seeking implies governmental support to “assess the assets and needs related to water infrastructure and management, and to develop a long-term strategy to improve water and wastewater services” (Reynolds, 2022).

### **6.3.5.3 Engineering Cooperation**

In the thematic analysis, engineering organizations emerged as an important part of the AFNWA<sup>31</sup>. Technical Experts, with 10 coding references, refer to different experts that are not further named, for instance, “three ex-officio technical experts” are mentioned as part of the Board of Directors of the AFNWA (AFNWA, 2024d). Thus, it is possible that in some cases it overlaps with other engineers mentioned by name.

Halifax Water, was referenced six times, The company played a crucial part in drafting the AFNWA. They “were contracted to develop corporate structure options for the AFNWA drawing from national experience, industry best practices, and workshops with First Nations stakeholders to incorporate First Nations’ culture and value” (AFNWA, 2022b, p. 11). They were also leading in proposing four corporate structures out of which the FSD was chosen (AFNWA, 2022b, p. 11).

The First Nations Financial Management Board (FNFMB), mentioned four times, has taken the responsibility as the “economic oversight agency” (AFNWA, 2022a, p. 23). The AFNWA chose FNFMB because of “their familiarity with First Nations and their deep understanding of financial matters related to the First Nations Fiscal Management Act” (AFNWA, 2022b, p. 25). Dillon Consulting was mentioned three times and created the AFNWA’s Asset Management Plan “for each community which describes the water and wastewater infrastructure, condition (remaining service life), and capital projects required to replace and repair the assets over the 10-year planning horizon” (AFNWA, 2022a, p. 16).

Eramosa Engineering Inc. was referenced three times as well. The administration cooperated with Dillon Consulting on the Asset Management Plan (AFNWA, 2022b, p. 31), but also initiated the SCADA Plan (AFNWA, 2021a, p. 17). SCADA “is a critical software and hardware platform that monitors water and wastewater system operations in real time [..]. It also captures and stores historical data, which operators can review to analyze trends and optimize system performance” (AFNWA, 2023a, p. 14). According to Yates, some communities previously lacked a SCADA system entirely, while others have advanced systems that are not fully used (Chernos, 2022b).

The ACWWA accounts for one coding reference. It works together with the AFNWA in providing its Water Supply Guidelines, which “have been accepted in most Atlantic provinces and can serve to standardize design guidelines and approaches” (AFNWA, 2022b, p. 24).

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<sup>31</sup> See App. C8: Engineering Cooperation in Detail.



One coding reference hinted at cooperation with Other Provinces, because “constructive’ feedback was taken from technical service providers in other provinces” (Meloney, 2020).

#### **6.3.5.4 Activist Cooperation**

Lastly, intensive cooperation with activist stakeholders was found<sup>32</sup>. The APC was mentioned most often with four times. It is one of the founding partners of the AFNWA; it developed “a comprehensive water strategy for the Atlantic region” (Charlton, 2017). Along with the CWRS, the APC created the First Nations Clean Water Initiative – Atlantic Region (FNCWI-AR) (APC, 2020, p. 29), a project that “played a key role in the development of the AFNWA in 2018, which included community engagements that informed the design of its ‘hub and spoke’ delivery model” (Charlton, 2020). The FNCWI-AR was one of the trailblazers of the AFNWA (Charlton, 2020).

The Assembly First Nations (AFN) was referenced twice. It is a “national advocacy organization that works to advance the collective aspirations of First Nations individuals and communities across Canada on matters of national or international nature and concern” (Assembly of First Nations, 2024). The AFN collaborates with the AFNWA, for instance, through “utility is a frequent presenter at the [...] (AFN) Annual Water Summit and a guiding voice in the development of a new Safe Drinking Water for First Nations Act” (AFNWA, 2024a, p. 3).

Tuma Young was referenced once in the Board Report of the AFNWA of January 2024. It is the only person mentioned as a collaborator of the AFNWA. Young is “the first Mi’kmaq speaking lawyer in Nova Scotia history” (AFNWA, 2024a, p. 3). He collaborates with the AFNWA in ensuring “First Nations language and traditional knowledge is at the forefront of the research” by providing “language and culture guidance, specifically mentor ship for trainees working on Nujo’tme’k Samqwan Safety Planning with a focus on linguistics analysis for interpreting Mi’kmaq values from traditional language” (AFNWA, 2024a, p. 3).

Lastly, Ulnooeweg Development Corporation was coded in one source, mentioned as an authority important in the creation of the AFNWA, next to Halifax Water and the APC (Googoo, 2018).

#### **6.3.6 Positive Expected Outcomes**

In the thematic analysis conducted using NVivo, 53 out of 88 files discussed expected positive outcomes from the AFNWA, which identified 14 characteristics<sup>33</sup>. Negative expected outcomes are not explained in the findings because they are congruent with the described emerging conflicts. The most frequently mentioned theme with 74 references was Self-

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<sup>32</sup> See App. C9: Activist Cooperation in Detail.

<sup>33</sup> See App. D1: Expected Positive Outcomes.

Governance. Most stem from CBC news<sup>34</sup>. They depict self-governance as being a “strong component” of the AFNWA and that this is “the ability to break the government of Canada’s funding cycle” (Meloney, 2019). Self-determination as a positive outcome is seconded by SaltWire (SaltWire Opinion, 2022).

Indigenous Expertise is at the Forefront in the AFNWA’s operational and corporate structure, highlighted in 69 references. Carl Yates declared “‘We have a clear mandate to hire a First Nations workforce to the fullest extent possible, from the senior management team, office staff, to the operators in the field’ ” (Campbell, 2020). Further, the Elders Advisory Lodge is essential in ensuring the AFNWA aligns with “First Nations values, culture and knowledge” (Charlton, 2020). Elders offer guidance “to the Board through an ex officio advisory committee” with the Chair attending Board meetings as a non-voting member (AFNWA, 2022b, p. 16). Moreover, the “term ‘Lodge’ was chosen by the Elders because traditionally a lodge is where one seeks wisdom and sound advice” (AFNWA, 2022b, p. 16). Further, the references emphasize that the authority is committed to close cooperation with First Nations communities to integrate their expertise its service delivery framework (Charlton, 2020).

The approach of the AFNWA was described 45 times as a Model for Indigenous Water Sovereignty, the same amount as Incorporation of Indigenous and Western Knowledge. The former was mainly defined by Water Canada and CBC. Water Canada illustrates the hope placed in the AFNWA across various Canadian regions, such as in British Columbia: “ ‘It’s something we’ve discussed for this area as well, but we haven’t been able to get it working,’ Brown [operations and maintenance manager with Lytton First Nation] says. ‘I’m hoping that they’ll make the booklet and blaze the path for us to follow’ ” (Chernos, 2022b). Water Canada further describes it as “a model which could be scaled up nationally” (Balpataky, 2018). This perspective is reflected in various sources (Zoledziowski, 2020; Meloney, 2018). The AFNWA depicts itself as pioneering in “First Nations-led water and wastewater service provision, and seeks to produce policy, practice, and precedent that can be used by other First Nations communities and organizations to move toward selfdetermination and celebrate First Nations relationship with water” (AFNWA, 2024a, p. 3). Chief Ross Perley of Neqotkuk, vice chair of the board of the AFNWA, acknowledges the widespread issue of long-term boil water advisories in other First Nations bands and expresses hope that the authority can serve as a guiding model for change in communities across Canada (Baker III, 2022). Perley argues that while it took the AFNWA 15 years to establish, he trusts other regions will achieve similar outcomes more quickly (Baker III, 2022). John Paul from the APC, regards the AFNWA’s approach as “a learning opportunity for the rest of Canada”, suggesting that it could inspire a shift from isolated community efforts to a more unified management model (Meloney, 2018).

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<sup>34</sup> See App. E6 for source distribution.

Incorporation of Indigenous and Western Knowledge represents a significant advancement to other initiatives, as evidenced by the established unique characteristics above. This approach reflects to “Two-Eyed Seeing”, which incorporates both Western and Indigenous Knowledge (Balpataky, 2018). While “science sees nature as an object; the Aboriginal lens sees nature as a subject” (Donovan, 2022; Dalhousie University & Health Populations Institute, 2022, p. 121). However, Two-Eyed Seeing can be superficial, if not genuinely applied. To genuinely integrate both Indigenous and Western knowledge equally, traditional knowledge holders are paid equally to non-Indigenous consultants (Donovan, 2022). Ryan Dunbar of the Kingsclear First Nations asserts that the AFNWA will not develop engineering solutions without a thorough “understanding of Indigenous land use and traditional ways of life” (Salah, 2022).

Additionally, Capacity Building and Training emerged as significant, with 43 references. According to John Paul, consistent education and training are “key to the model’s success” (Balpataky, 2018). Important to mention is the AFNWA’s approach to train local water operators rather than hiring external staff (ISC, 2022). Furthermore, the plan includes training “a new generation of Indigenous and non-Indigenous engineers and other professionals to ensure the water authority’s long-term success. This will include 20 graduate and postdoctoral research trainees, 15 undergraduate interns, and 35 First Nations high school students in Mi’kmaq and Wolastoqey communities” (Riley, 2024). One asset of the authority is integrating employees from the First Nations water and wastewater sector into its operations (Meloney, 2018).

Secure Funding was coded 37 times, reflecting a positive outlook on the AFNWA’s potential to provide stable financial support. The government has allocated \$172 million to the AFNWA in the 2022-23 federal budget, ensuring funding for the authority until 2032 (Chernos, 2022b). The aspect of long-term funding is “the product of more than a decade of planning and collaboration between Atlantic Indigenous chiefs, ISC and stakeholder groups, and focuses on sustainable services for ‘seven generations’, rather than taking it year-by-year, at the mercy of budgets determined in Ottawa” (McSheffrey et al., 2021). Additionally, the AFNWA has an agreement with the Canadian government to extend support if more communities join. Yates anticipates that the authority will acquire more funding jointly than communities would individually (McSheffrey et al., 2021). This ensures reliable maintenance and response capabilities for any system issues without the constant concern of underfunding (CBC News New Brunswick, 2022).

The AFNWA’s potential to provide a Long-Term Solution was referenced 27 times, which links to the stability provided by long-term funding. The sentiment of security is attributed to the authority’s ability to “allow chiefs and band councils to set long term priorities for their water

infrastructure, which is difficult to do with the current, year-by-year budgeting from Indigenous Services Canada (ISC)” (Meloney, 2019).

Support by First Nations and Non-First Nations appeared in 24 references. Despite few direct quotes from First Nations peoples, support for the AFNWA is evident, with 15 First Nations communities from Atlantic Canada initially joining the authority, representing 61% of the region’s First Nations population (AFNWA, 2021b, p. 4). Moreover, additional communities have expressed interest in joining the AFNWA (AFNWA, 2021b, p. 4). The authority will manage water and wastewater services for up to 4,500 households and businesses across 19 First Nations (Day, 2020). The Non-Indigenous population of Atlantic Canada further supports the AFNWA, with 85% of 1,450 surveyed Atlantic Canadians “feel that First Nations should have an independently owned and operated utility” (SaltWire Opinion, 2022). Furthermore, 79% support ongoing federal funding for the AFNWA, with 95% of the participants being “non-Indigenous, stating that ‘mainstream society’ also believes in the Atlantic First Nations Water Authority” (SaltWire Opinion, 2022).

Enhanced Water Quality was noted 17 times in the thematic analysis. The AFNWA’s Business Plan states that it aims to “bring service to levels comparable to leading utilities in Canada” (AFNWA, 2022b, p. 9). Several sources discuss improved water quality to match that of non-Indigenous communities (K. Moore, 2022; Chernos, 2022b; Meloney, 2018).

Improved Working Conditions as a theme was referenced 13 times, highlighting employment opportunities and a higher pay scale. The AFNWA aims to create jobs within communities and inspire more First Nations youth to enter professions in STEM (Charlton, 2020). Furthermore, the AFNWA’s compensation policy is “based on skills-based pay. The more certification you get, the more we pay you” (Chernos, 2022b). The policy also includes a “formal pay structure” with “time and a half for overtime and double time on statutory holidays, just like everybody else does” (Chernos, 2022b). The compensation rates are “competitive with regional municipal markets” to prioritize those maintaining the systems (Chernos, 2022b).

12 coding references were linked to the theme “Monitoring System”. Most of these refer to the SCADA system as “designed to collect, analyze, and visualize data pertaining to every water and wastewater system, from reservoirs and pumping stations to pressure reducing valve chambers and treatment plants” (Chernos, 2022b).

The term Higher Efficiency was also referenced 12 times. Indigenous communities independently develop specific responses without having to wait for government intervention (Zoledziowski, 2020). For instance, “calculations performed by the Mitacs interns [...] [enabled] the authority [...] to identify [...] chlorine concentration contact time [in one community]” which led to a prompt boil water advisory and the initiation of a solution to address the issue (Dalhousie News, 2023).

Secure Water Access and Ensuring Health Standards were each coded only once.

## **7. Discussion**

### **7.1 Creation of the AFNWA**

The findings of the thematic analysis revealed several key insights. For one, the colonial past did not emerge as a major factor in the creation of the Indigenous-led initiative to self-govern water access, neither did an effort to build trust within the community. As stated in the findings, colonial legacy was only referenced twice in the analyzed documents. Both occurred in the 2020-21 Annual Report of the AFNWA, where the organization states, “[t]he Atlantic First Nations Water Authority has been in the making since 2009 when Chiefs in Atlantic Canada made the decision to explore options for a First Nations owned utility to deliver water and wastewater service in their communities This was in recognition that the colonial approach was not working and a new direction was needed” (AFNWA, 2021a, p. 5). The analyzed documents did not explicitly reference concepts such as Slow Violence or Environmental Racism. However, the emerged reasons for the creation suggest these issues may underlie its formation. Yetiş and Bakırlioğlu argue that “slow violence is also about how the effects of violence are experienced, perceived and defined” (Yetiş & Bakırlioğlu, 2023, p. 2). This supports the notion that, while direct references to slow violence were absent, the concept may still have implicitly influenced the authority’s creation. The revealed motivations, for instance the lack of resources and effective governance or the desire to improve self-governance, indicate an approach to addressing systemic issues like Environmental Racism and Slow Violence.

Improving self-governance has emerged as one of the most significant issues or hopes for First Nations communities in terms of water access, alongside the lack of resources. This issue was consistently highlighted across various sources. Therefore, it might be surprising that self-governance was not revealed as a major part of the unique characteristics of the authority. As Balpataky emphasizes: “It is very important to build capacity, to take ownership and chart their destiny through their own advancement of knowledge and operational expertise’ ” (Balpataky, 2018). This sentiment underscores the critical appeal by First Nations communities to develop their own capabilities and to manage their water resources independently. Journalist Jim Day further supports this by stating, “[t]his First Nations-led initiative directly supports the advancement of self-determination for communities while strengthening control and management of water and wastewater infrastructure on reserves” (Day, 2020; ISC, 2020a). Therefore, while stakeholders view an Indigenous self-determination approach as crucial, the discrepancy in its lack of mention as a unique characteristic implies that the AFNWA is not contributing to this aspect.

On the other hand, as revealed in the historical contextualization, the persistent lack of resources is a significant problem, which underscores why the AFNWA chose to create an

authority to solve this issue. The reasons for lack of resources are consistent with historical explanations: Chronic underfunding (Black & Swampy, 2021), making First Nations communities compete with each other for resources (Zoledziowski, 2020), low wages (Chernos, 2022a) and inadequate performance by the Canadian government (Barrera, 2018). A major issue with current funding from the government is that “First Nations communities currently receive individual funding on a year-by-year basis, something Yates said makes it difficult for them to focus on strategic planning” (Reynolds, 2022). Therefore, the AFNWA’s strategy to secure funding that spans seven generations represents a significant and unprecedented commitment to long-term planning for First Nations (McSheffrey et al., 2021). However, given the relatively short lifespan of the AFNWA, it remains uncertain whether it can meet these promises. An in-depth analysis in the coming years will be essential to evaluate the effectiveness and sustainability of the AFNWA’s long-term funding approach.

Elevating water standards to equal levels as for non-Indigenous communities was another rationale emerging from the analysis (Chernos, 2022b). These codes do relate to each other; the lack of resources might be the illness, while the quest for equal water standards might be seen as a symptom. Although the desire for equal standards was mentioned less frequently than resource shortages, it is likely a fundamental underlying issue driving advocacy for secure funding. Thus, this finding might not accurately reflect its importance to the AFNWA’s objectives.

To understand why the AFNWA chose its strategies, it is essential to interpret meanings derived from the data on its characteristics and the responses to whether the approach of the AFNWA is novel.

## **7.2 Uniqueness and Strategies of the AFNWA**

The thematic analysis portrays the AFNWA as an unique authority in addressing the water crisis in Canada. However, it also reveals the existence of a few alternative initiatives. These are often narrower in scope or differ in their approaches. For instance, an Irish company implemented a filtration system in New Brunswick (CBC News New Brunswick, 2022), while the Samson Cree Nation in Alberta established a community-based committee for water management (Black & Swampy, 2021). Furthermore, not included in the analysis, ISC provides a list of other First Nations approaches to water governance. ISC identifies initiatives underway in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Atlantic Canada (ISC, 2024f). In Atlantic Canada alone, there are four initiatives listed. Besides the AFNWA, the “Confederacy of Mainland Mi’kmaq signed a framework agreement [...] in 2023” towards self-determination, the “Union of Nova Scotia Mi’kmaq” developed an initial model for housing services, the “North Shore Mi’kmaq Tribal Council” implemented an initial phase of developing “a water and wastewater delivery hub”, and the APC is research

on housing needs and improving the housing services delivery (ISC, 2024f). Most of these initiatives are categorized as initial engagements with studies underway. Therefore, one could argue that the AFNWA is unique in its scope in Canada.

As revealed through historical contextualization, governance issues and resulting underfunding are main contributors to water insecurity for First Nations in Canada. Various stakeholders claim that inadequate water access and quality stem from governance regulations. Therefore, a significant improvement from past conditions appears to be that the AFNWA has a comprehensive plan and resources for long-term funding. This refers to higher salaries for local operators and secured income sources for the authority over a ten-year period (AFNWA, 2024a, p. 2). Again, codes that overlap, such as “[t]he AFNWA’s funding will flow from ISC, but it will have autonomy over how the money is spent” (McSheffrey et al., 2021), refer to both funding and self-governance. In general, funding seems to be adequately addressed by the AFNWA, resolving what has historically been the biggest issue.

Governance regulations have been identified to be one of the root issues in the water crisis. Hanson elucidates this by stating, “[n]on-reserve communities are regulated by provincial and municipal governments, which have systems in place to deal with waste disposal and air and water monitoring. Reserve communities, on the other hand, fall under the jurisdiction of [...] [INAC], as stipulated in the Indian Act” (Hanson, 2009d). Additionally, Bradford, Okpalauwaekwe et al. highlight that “[p]rovincial water regulations do not apply to Indigenous communities. A complex tri-departmental federal structure consisting of Aboriginal Affairs and Northern Development Canada, Health Canada and Environmental Canada shares responsibility for safe delivery of drinking water” (Bradford, Bharadwaj, et al., 2016, p. 1). Therefore, it is noteworthy that the AFNWA’s emphasis on self-governance of First Nations is not listed as a distinctive feature. This oversight could stem from the sources used in the analysis or the coding process. For instance, the Hub-and-Spoke model, the FSD structure, and a functional monitoring system implicitly suggest enhanced governance regulations. The Hub and Spoke Model, according to OCWA, is “the most efficient to deliver services. With effective communication across hubs, this model promotes knowledge exchange, access to technical resources, and consistent practices across the Authority” (OCWA, 2021, p. 15). Thus, the decentralized hub and spoke system is indicative of self-governance.

Prioritization of First Nations through Two-Eyed Seeing or the implementation of an Elders Advisory Lodge emerged as significant characteristics of the AFNWA’s strategy. However, when examining the sources that support this claim, it becomes evident that most of these are derived from AFNWA documents. Therefore, while the AFNWA does not explicitly focus on remedying the colonial past and instead emphasized technical advancements, it places considerable importance on resolving historical rooted issues by prioritizing First Nations approaches. This commitment to incorporating Indigenous perspectives and ITK into water

management strategies is reflected in the concept of Two-Eyed Seeing, the Elders Advisory Lodge and the corporate values of the AFNWA. Despite this, the predominance of AFNWA-sourced information highlights a gap in understanding how these initiatives are perceived by First Nations communities.

This insight aligns with capacity building and training initiatives conducted by the AFNWA for local operators, bringing together communities on a transregional level and training First Nations members (AFNWA, 2022b, p. 45). However, none of the analyzed First Nations newspaper or journalist releases referred to these being important features of the AFNWA. This suggests that while the AFNWA's efforts are extensive, they may not fully resonate with or are recognized by the communities they aim to serve. Therefore, broader engagement and feedback for First Nations peoples is needed to ensure that their perspectives are adequately represented and integrated in the water management framework of the AFNWA.

Nonetheless, the findings show that the analyzed sources agree the FSD Hub-and Spoke model combined with long-term secure funding distinguishes the strategy of the AFNWA from other initiatives in Canada. These elements not only address immediate water insecurity issues but also provide a sustainable and adaptive framework for long-term improvements in water.

### **7.3 Collaboration and Conflicts**

The analysis reveals a predominance of positive expected outcomes over negative ones concerning the AFNWA. There appears to be substantial support for the concept of a First Nations-owned and operated organization from all stakeholders. The analysis highlighted the collaboration between Indigenous organizations, engineering authorities, scientists and political bodies partner with the AFNWA. Interestingly, support from activist stakeholders, such as First Nations, did not emerge as the major group. This may be due to the selection or accessibility of data, as the majority of the analyzed sources are not from First Nations newspapers. Furthermore, there seems to be significant support from Atlantic Canada's First Nations because "[i]mmediately joining the authority on its journey are 15 First Nations, nine from Nova Scotia, four from New Brunswick and two from Prince Edward Island" with more joining in the years after (Campbell, 2020). This is also important when looking at the collaboration partners. First Nations did not emerge as a prominent group of cooperators however this might be due to the distribution of available sources for the analysis. What did emerge as significant is that many local stakeholders are involved in the AFNWA, supporting the expectation of the AFNWA to include as many local operators as possible. This approach includes already qualified staff and incorporates local expertise.

Furthermore, the Non-First Nations population of Atlantic Canada emerged as supportive towards Indigenous self-determination and self-governance (SaltWire Opinion, 2022). This



widespread support from the Indigenous and non-Indigenous population underscores the broader societal recognition to self-governance.

On the other hand, the conflicts that emerged stem primarily from the population of Atlantic Canada. These reveal skepticism, stemming from several concerns: general distrust (McSheffrey et al., 2021), doubt about to promise of funding (Zoledziowski, 2020), uncertainty about whether this initiative could truly bring about change (Black & Swampy, 2021), and a general perception of an acceptable current water situation (Zoledziowski, 2020). Since these concerns are mainly expressed in media and First Nations sources, this might provide a more accurate picture of the prevailing sentiments. The AFNWA appears to offer hope; however, due to decades of unfulfilled promises, many remain skeptical until positive results are observed. This skepticism underscores the need for the AFNWA to not only articulate its goals clearly but also demonstrate concrete progress to build trust and credibility within the community.

The Canadian government plays a complex role in this discussion. Historically, the government has often been viewed as an obstacle to First Nation's development, reinforcing colonial structures, particularly in the realm of water management. This is seconded by the government being identified as the principal source of conflict with the AFNWA. Whereas the population of Atlantic Canada expressed skepticism but generally support the authority, the government is frequently depicted as a hindrance. For instance, "a growing body of Canadian leaders are advocating for the federal government to get out of the way" (Balpataky, 2018). Furthermore, issues such as a lack of transparency in funding (Barrera, 2018) and insufficient systemic support (Mitacs, 2023) are underlined as significant barriers.

On the other hand, the Canadian government, specifically ISC, emerges as a major support partner for the AFNWA. A specific focus is placed on the framework (FNII, 2023) and transfer agreement (ISC, 2022) that ISC and AFNWA signed, which grants overriding authority to the AFNWA. Additionally, while the AFNWA advocates for self-governance it remains dependent on funding from the Canadian government. The analysis revealed that the government has promised and followed through on providing necessary funding (CBC News New Brunswick, 2022). According to the Canadian government „[t]he Government of Canada and First Nations communities are working in partnership to build long-term solutions that support sustainable access to safe, clean drinking water and restore trust in the water supply" (ISC, 2021). This dual role underscores the complex relationship between the government and First Nations communities. On one hand, there are legitimate concerns about the government's past actions and current transparency. On the other hand, the government's involvement and support are crucial for the AFNWA's success.

However, it is important to consider the context in which the selected articles were produced, as they might reflect bias in the analysis. There is no concrete guideline dictating the

frequency or themes of news releases by the Canadian government. Nonetheless, it is possible that one motivation for their publication is to gain legitimization and public trust by demonstrating a commitment to open governance. The incentive of these articles has to be considered in all sources. For instance, the AFNWA will most likely focus less on negative information and aim to boost its standing. Therefore, the limited availability of First Nations newspapers is a significant difficulty, as it restricts the diversity of perspectives and depth of understanding.

Engineers and Scientists emerged as important contributors to the success, not only in its creation but also in its ongoing operations and future plans. According to Charlton in a Dalhousie News publication, “AFNWA represents not only a possible path to have clean water in First Nations communities, but also an opportunity for those communities to develop STEM-based training goals that will see First Nations engineers, scientists, operators and other trained individuals solving water challenges for their communities” (Charlton, 2020). However, these findings should be discussed in light of the sources stating this, which predominantly include AFNWA and Dalhousie University documents. Dalhousie is a significant partner of the AFNWA, primarily because Dr. Graham Gagnon, a key figure in the AFNWA, is affiliated with the university. This association suggests that these sources may introduce some bias. Nevertheless, support for the AFNWA from the engineering and scientific communities is confirmed by other sources as well. For instance, Ku’ku’kwes news highlights the involvement of engineers (Googoo, 2018), while the non-profit national research organization Mitacs refers to natural and social scientists (Mitacs, 2023). These additional references lend credibility to the claim that the AFNWA collaborates with technical support.

Therefore, overall, it appears that the AFNWA enjoys substantial support from all analyzed levels of stakeholders. However, there remain significant issues, particularly regarding the relationship with the Canadian government. While the AFNWA aims for greater autonomy, it currently depends on funding from ISC. The extent to which the water authority can achieve complete independence from ISC, remains uncertain.

#### **7.4 Looking Forward**

Examining frequently mentioned short-term positive (expected) outcomes, several lessons can be drawn for future similar initiatives. One notable outcome is the emphasis on self-governance, which emerged as a key positive result. Given that self-governance aligns closely with the primary goal of secure funding, this is unsurprising. Day from SaltWire highlights this by stating, “[t]his First Nations-led initiative directly supports the advancement of self-determination for communities while strengthening control and management of water and wastewater infrastructure on reserves” (Day, 2020). This is seconded by various sources, including journalist articles (Zoledziowski, 2020), Dalhousie University (Riley, 2024),

and Indigenous newspapers (Googoo, 2018). The sources agree that the AFNWA could serve as a model for other communities in terms of self-governance (CBC News New Brunswick, 2022). Dalhousie research Megan Fuller summarizes this sentiment by noting " 'the community here is learning to trust their water, but all AFMWA communities are learning what it means to own and operate their own Indigenous utility' " (MacDonald, 2023).

Moreover, incorporating Indigenous expertise at the forefront of water management is a novel and impactful approach other communities could learn from. Chief Marshall with the AFNWA emphasizes this, stating: "We have smart, trained people. [...] No one can run and maintain our areas better than we can" (Zoledziowski, 2020). Prioritizing Indigenous knowledge adds a vital aspect of autonomy to the water insecurity discussion. As Yates argues, it "should be a water authority by First Nations for First Nations" (Balpataky, 2018). This marks a significant departure from previous initiatives. Research from Wilfrid Laurier University (WLU) supports this perspective, highlighting that "the contributions of Indigenous peoples to the Canadian economy are immense if we can just ensure the equity and justice they need to excel" (WLU, 2024). For meaningful change in the water situation, First Nations communities must be included in decision-making bodies (WLU, 2024; Salah, 2022). John Millar, executive director of Water First, reinforces this point, noting "Indigenous peoples need to be 'in the driver's seat' when it comes to water systems management, both in terms of exposing problems and implementing solutions" (Zoledziowski, 2020). Additionally, using an approach like "Two-Eyed Seeing" emerges as crucial in understanding the issue and breaking the cycle of water insecurity. Bringing together Western and Indigenous knowledge arose as a potential key solution. Eskasoni Elder Albert Marshall describes this concept, stating, "[t]he big difference there is that science sees nature as an object; the Aboriginal lens sees nature as a subject. Because it's through the language, it teaches you that everything is alive, physically and spiritually" (Donovan, 2022). Marshall believes that Mi'kmaw science could counterbalance Western science, providing a more holistic understanding of environmental issues (Donovan, 2022). This aligns with a focus on Indigenous capacity building. As Melony notes, "many employees that currently work in the [First Nations] water and wastewater industry actually get transferred with the hard assets to this authority. [...] That puts it in a good spot to take the [First Nations] traditional values as well as the technical abilities" (Meloney, 2018). This emphasis on capacity building ensures that the knowledge and skills of Indigenous employees are retained and integrated into the new water governance structures.

A long-term approach that provides a reliable and sustainable framework for communities is crucial for self-determination (SaltWire Opinion, 2022). Establishing trust and continuity in water management systems ensures that community members feel confident in the reliability and effectiveness of these initiatives. According to several sources, functional monitoring

systems have improved significantly with the AFNWA, especially with the implementation of the SCADA system. According to the Dalhousie University, “[f]or the first time, we can actually see how we are doing in terms of quality benchmarking, and it’s truly making a difference in the lives of the people we serve” (Dalhousie News, 2023). This technology enables the AFNWA to ensure consistent water quality and address issues promptly, thereby enhancing the reliability and effectiveness of the water management systems (AFNWA, 2023a, p. 14). This improvement makes the authority much more efficient. For instance, “Indigenous communities won’t have to wait for a government to develop a climate change-specific response. They can do that themselves” (Zoledziowski, 2020).

In general, the AFNWA combined multiple systems into one, enabling more efficient action and greater authority. Carl Yates argues “We’re now more than the sum of our parts. [...] We can start to bundle projects like leakage control into programs to get better prices, more efficient implementation, and move more expeditiously with a longer-term view” (Chernos, 2022b).

It has to be noted that the results might be biased due to the variations in issues raised. For instance, “Ensuring Health Standards”, was coded only once, which does not necessarily suggest it is not a priority. Instead, it may be implicitly linked to other categories, such as “Enhanced Water Quality”, which ultimately leads to improved health standards. Thus, respondents might have considered health standards but expressed it through the lens of water quality, implying all its consequences. For example, this connection is evident in statements like: “The most apparent benefit to Atlantic First Nations with the establishment of a pan-Atlantic Water Authority is increased public health and safety with the improvement in quality of drinking water and wastewater” (Charlton, 2017). This suggests that health standards were indeed considered, though articulated through related themes.

The low emphasis on Secure Water Access as an outcome is surprising, given its perceived importance. This discrepancy is puzzling and suggests further investigation to understand why it did not emerge more prominently in the findings.

When examining the adaptability of the AFNWA’s approach in other regions, the analysis reveals a promising outlook. However, when compared to academic literature, hesitations emerge. One such hesitation concerns to the unique nature of decolonization in Canada which “will not look like it did in India, Africa, and most of the globe where, as the story goes, European colonizers packed their suitcases and went home” (Woons, 2015, p. 108). Another consideration is the distinct needs and social relationships that differ within countries, While the AFNWA is promising, Porten and Loë (2013) argue that

“in a practical sense will take many different forms in different countries, and must reflect the needs and interests of Indigenous peoples and nations. For example, some Indigenous nations may choose not to take a collaborative approach to water governance, and may instead assert sole jurisdiction over their lands and waters, while others may defer management of water to the colonial state” (Porten & Loë, 2013, p. 7).

Additionally, the regions in Canada differ significantly. Atlantic Canada's First Nations are relatively closely populated, while other regions have more isolated communities where different solutions may be more appropriate. This raises questions about whether transregional solutions like those of the AFNWA can be effectively adapted to these diverse contexts. The analysis highlighted that geographical, infrastructural, and governance variations contribute to disparities in water (in)security among different Indigenous communities. However, it did not delve deeply into these geographical differences. Kerry Black from the University of Calgary asserts that "Atlantic Canada [...] is different than Saskatchewan or Alberta, which have a higher number of remote and fly-in Nations. A water authority is going to look and feel different in Alberta than in Atlantic Canada or in Ontario or in British Columbia. The AFNWA is a really great example of how it can work within a regionalized context, though it's not necessarily something that can work in all regions" (Chernos, 2022b). On the other hand, the AFNWA argues, its "centralized functionality allows the structure to align its core competences with the needs of communities in different geographic regions" (AFNWA, 2022b, p. 18).

Whether the AFNWA's strategy can be adapted elsewhere remains uncertain, partly because the thematic analysis revealed that news coverage is primarily regional, indicating limited discussions of its applicability in other contexts. However, it is clear that the AFNWA has implemented a system promoting Indigenous self-determination in water access, a process that "took 15 years to implement", but there is hope that "other regions have a shorter road to making their own First Nations-led water authority" (Baker III, 2022).

Moreover, long-term results are not yet available to conclusively determine positive outcomes over negative ones. Environmental Racism remains a persistent issue for First Nations in Canada as long as the reserve system of the Indian Act is in place. In this context, initiatives aimed at achieving self-governance are essential for addressing the water crisis. A transfer agreement similar to the one achieved by the AFNWA, which shifts responsibilities for water and wastewater management, has the potential to effect meaningful change (Baker III, 2022). However, whether such strategies can be universally applied across diverse Indigenous contexts remains an open question that requires further investigation and long-term analysis.

To conclude, due to the complexity of the many stakeholders involved and limitations in data, assessing the effectiveness of community sector initiative can be challenging (Kindig et al, 2010; quoted in Danaher, 2011, p. 8). "And yet there is tremendous potential in working with communities to fundamentally change people's living and working conditions" (Danaher, 2011, p. 8).

## 8. Conclusion

*"In order to ensure our people have above standard drinking water, we have to be in control and we have to be responsible for it"*

- Chief Ross Perley of Neqotkuk First Nation, New Brunswick (Baker III, 2022).

This thesis aimed to examine Indigenous-led water governance strategies by investigating the Atlantic First Nations Water Authority (AFNWA). The objectives were to assess the effectiveness of this approach and its potential applicability across Canada. Through an exploratory reflexive thematic analysis, key conclusions emerged. The AFNWA adopted its strategies to create a responsive and sustainable water governance system tailored to First Nations communities. By implementing the Elders Advisory Lodge and Two-Eyed Seeing, the authority implicitly addresses historical factors, prioritizing Indigenous voices and integrating traditional knowledge with Western practices. It also integrates Indigenous peoples within its operating structure, utilizing their expertise and investing in internal capacity building and training. The AFNWA's approach stands out to its transregional character, its FSD structure and the Hub-and-Spoke model, which collectively facilitate efficient response mechanisms and ensure First Nation's water-related issues are addressed promptly.

Compared to other approaches, the AFNWA's model emphasizes multi-level cooperation, involving engineers, scientists, and activists from across Atlantic Canada. It focuses on research and technical expertise to ensure an effective water management system. Moreover, a funding strategy secured for at least ten years leads to sustainable water resource management, a critical element missing in systems prior to this organization. This fosters broad stakeholder support, while it does not appear to generate significant conflicts.

However, the Canadian government's stance is complex, reflecting historical systemic issues and persisting colonial governance regulations, while also showing support for the AFNWA through signing a framework and a transfer agreement and committing to funding the authority. Therefore, its position remains ambiguous. Furthermore, due to the lack of long-term effects observed so far, First Nations communities expressed skepticism regarding funding and the potential for meaningful transformational change with the AFNWA. Further research is needed to assess these impacts.

Lessons from the AFNWA's experience underscore the importance of integrating Indigenous knowledge, securing long-term funding, and fostering multi-level cooperation. These insights can inform future initiatives aiming to implement effective and inclusive water governance systems. It became apparent that addressing water insecurity relates to local contexts. Additionally, the AFNWA is a relatively recent initiative, its broader applicability and long-term effectiveness in Atlantic Canada remains uncertain. Further research, such as a multiple-case study would provide a more comprehensive understanding. This approach could help identify the key factors needed to break the cycle of ineffective water management. For now, the AFNWA is indeed "blazing a trail" in Indigenous-led water governance, setting a precedent for future initiatives (Charlton, 2020).

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