Can Multilevel Water Governance reduce water insecurity for Indigenous Peoples in Canada?

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Submitted as the major research paper for the degree of

Master of Arts in Public Administration

School of Political Studies

Faculty of Social Sciences

University of Ottawa

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April 2023

18,170 words

Abstract

Water insecurity is a significant issue faced by Indigenous peoples in Canada due to the legacy and ongoing impacts of colonialism. Governance plays a key role in establishing water security. This paper examines whether using a multilevel governance approach could reduce water insecurity faced by Indigenous peoples in Canada. To do so, this research is studying a water stewardship strategy in the Northwest Territories that implemented a multilevel water governance approach. Information collected on the case is sourced from academic and grey literature. An analytical framework for multilevel climate governance structured the analysis of results. Findings suggest that multilevel governance can potentially reduce water insecurity for Indigenous peoples in Canada if the right conditions exist. Some of these elements include incorporating traditional knowledge, Indigenous leadership, and Indigenous community-based monitoring into water strategies. A collaborative, multilevel approach which informs decision-making with western and traditional knowledge could help to decolonize water governance and reduce water insecurity faced by Indigenous peoples in Canada.

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1.0 INTRODUCTION

With Canada's lofty international reputation, it would be fair to assume everyone in the country has equal access to water. Yet, non-Indigenous households in Canada are ninety times more likely to have running water then Indigenous households. This situation demonstrates water insecurity, or the consistent inability of people to use water safely for wellbeing and a healthy life (Duignan & Martin-Hill, 2022, para. 1). The water insecurity faced by Indigenous Peoples has forced them to use and consult metrics non-Indigenous peoples in Canada are not impacted by. Namely, federal boil water advisories for which the status confirms Indigenous water security as an area of concern. Speaking to this reality, 61 Indigenous communities remained under long-term drinking water advisories in February 2020 (Marshall et al., 2020, para. 1). It follows that water insecurity is a significant issue for Indigenous peoples in Canada that must be addressed.

As a first world country of international repute, it could be argued that Canadian institutions and government have an obligation to follow United Nations mandates on the rights of Indigenous peoples. The country itself committed to following these mandates when it passed *An Act Respecting the United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) in 2021 (Nagy, 2022, p. 207). Under these standards, Canada would need to respect water as a human right, contribute to eliminating the water insecurity Indigenous communities face and subsequently mitigate a crucial factor in the marginalization of First Nations, Metis, and Inuit populations (Hanrahan & Maurcer, 2019, p. 222). To this effect, provisions in the UNDRIP, like article 25 protects the rights of Indigenous peoples to "maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters" and to "uphold their responsibilities to future generations in this regard" (United Nations Declaration on the Rights of Indigenous Peoples, 2007). Therefore, Canada has both a societal and

political duty to eliminate water insecurity for Indigenous people. The current research project is searching multilevel water governance for a way this duty to Indigenous peoples can be fulfilled, for which the reasoning will be explained in the next section.

1.1 Research Question and Hypothesis

Better management of water resources for Indigenous peoples in Canada could be as simple as earmarking funding for the construction or improvement of water treatment facilities. According to the Assembly of First Nations, 75% of the 740-water treatment systems and 70% of the 462 wastewater treatment systems on reserves posed risks to drinking water and wastewater quality (Sarkar, et al., 2015, p.182). While financial assistance could help revitalize wastewater treatment systems on reserve, an under-appreciated and key aspect of successful water management is the role of governance in water management. Scholars in public administration have "long argued that the successful management of water resources depends strongly on the implementation of governance structures" and that the right governance model is "critical for ensuring that assets are properly built, managed, operated and renewed" (Alcantra et al., 2020, p. 156). Therefore, the research question that guide this research project is: **Can water strategies using a multilevel governance approach help reduce water insecurity for Indigenous people in Canada?** In this research paper, I postulate that if Canada implements an approach based on multilevel governance which prioritizes the perspectives of Indigenous peoples in its water governance it will reduce the level of water insecurity Indigenous communities experience.

The reasoning behind the hypothesis can be traced to the multi-jurisdictional nature of Canadian water governance in Indigenous communities. The value of creating a space for Indigenous perspectives in the multilevel governance prioritizing Indigenous input will be assessed by analyzing a case of multilevel Indigenous water governance in Canada. More specifically, a

multilevel governance agreement for the waters of the Northwest Territories titled *Northern Voices, Northern Waters: The NWT Water Stewardship Strategy* created in 2010 will be studied. The strategy aims to keep the waters of the Northwest Territories clean, abundant, and productive by providing direction for the long-term governance of the territories' water resources (NWT Department of Environment and Natural Resources, 2010, pp. 1–2). It was created on a multilevel approach by a group of Indigenous and government representatives, hailing from an "Aboriginal Steering Committee," the Northwest Territories Department of Environment and Natural Resources and the federal government's Indigenous and Northern Affairs Canada (NWT Department of Environment and Natural Resources, 2010, p. 1). This multilevel arrangement and Indigenous participation in water governance represent key elements of the research framework and will be defined below.

1.2 Positionality

I am a 23-year-old white man born and raised in Canada. I hold a Joint Honours Degree in Political Science and Public Administration. I am currently a master's student at the university of Ottawa, which sits on the traditional territory of the Algonquin Nation. As a non- Indigenous researcher and settler-citizen of Canada, I pay my sincere respect to all Indigenous people. I recognize my positionality is shaped by my privilege and acknowledge the legacy and ongoing reality of colonization. My aim is contributing to the broader conversation on the ways relationships can be decolonized. I hope to discover elements from the experience of water governance in the NWT that could potentially better inform debates on water insecurity for Indigenous peoples as it pertains to governance of the issue.

2.0 LITERATURE REVIEW

Given the research outline provided, it is necessary to define the key terms which compose the conceptual framework: Multilevel governance, Indigenous people, and water governance in the NWT. Each part of the framework will be explained within its section and use existing academic literature.

2.1. The Origins of Multilevel Governance

Over the past two decades, the notion of multilevel governance (MLG) has become immensely popular, taking root in large parts of academic literature (Nathalie Behnke, Jörg Broschek and Jared Sonnickse, 2019, p. 1). This meteoric rise in popularity made scholars characterize the literature on MLG as a "growth industry" because ideas surrounding the concept were not always in vogue (Alcantara, Broschek & Nelles p. 34). Before MLG garnered international attention, empirical studies of the concept were concentrated in Europe, its place of origin. During the early 1990s, Gary Marks was the first scholar to observe MLG in European cohesion policy (Tortola, 2016, p. 236). Around that time, three key events for developing a theory of MLG in Europe occurred. In 1988, the European Union's Structural Funds were reworked to emphasize partnerships and coordination. Four years later, a single market was established with the 1992 program, which led to the mobilization of interest groups within policy networks. The year 1992 also saw the signing of the Treaty on the European Union which created a political desirability of policy action at the lowest level, now known as the concept of subsidiarity (Stephenson, 2013, pp. 819–820). All in all, the modifications within the European Union promoted interaction, cooperation and integration. The resulting changes set the stage for including multiple orders of government into decision-making and governance. It was under these conditions that the phenomenon of MLG coined by Marks emerged. He defined the concept as a "system of

continuous negotiation among nested governments at several territorial tiers—supranational, national, regional, and local" and credited its emergence to "broad institutional creation and decisional reallocation" (Marks, 1993, p. 392). Essentially, MLG involves shifting state functions' governance to multiple government orders.

Overall, MLG is an excellent concept for grasping the dynamics of governance within the European Union and capture the State's departure from being highly centralized (Stephenson, 2013, p. 820). MLG is best suited to describe the reality of governance in Europe because it makes the interaction of multiple territorial tiers a focus. With the activity of the European Union, the continuous negotiation of countries in close proximity and the involvement of several territorial tiers in these proceedings MLG is an ideal fit for Europe. Summarizing these thoughts, Bache writes: "MLG has made a significant contribution to understanding the nature of governance in the EU. It directs attention to increasingly complex relations between actors from different sectors organized at different territorial levels" (Bache, 2012, p. 641). In other words, the strength of MLG is in its applicability to Europe and government relations in practice. The multilevel conceptualization of governance allows scholars to easily capture the interactions between territorial levels in a polity.

2.2 The Ambiguity of Multilevel Governance

While most scholars have a similar understanding of MLG, specific elements of the definition are often contested, such as the term governance (Benz et al., 2021, p. 2). The definition of MLG explained above is helpful to provide an example of this lack of precision. Shifting the "governance of State functions" could refer to the formulation, implementation or even the maintenance of an existing program associated with State functions. Due to the explosion of interest in MLG, it is not shocking that a consensus on its precise meaning is missing. The nature of MLG as a "growth

industry" means scholars across disciplines and within different areas of study who may differ in their interpretation of governance are mobilizing the notion. To this effect, the appeal of MLG has demonstratively transcended the European Union from which it originated and gained momentum within global policy circles for several policy issues (Genest et al.,2021, p. 117). Due to MLG's widespread use and conceptual ambiguity, clarification is especially important. The many different applications of the concept means that there are many ways of theorizing how the governance aspect is structured.

Recognizing the ambiguity of MLG, Marks collaborated with Liesbet Hooghe to establish two distinct types of MLG. Type 1 MLG refers to general-purpose governance of jurisdictions at a limited number of levels. These territorial jurisdictions are stable, do not intersect and involve fulfilling multiple functions and a variety of policy responsibilities which can be flexible across jurisdictional levels (Marks and Hooghe, 2003, p. 236). Type 2 MLG refers to governance where the number of jurisdictions is vast and operating at multiple territorial scales. These jurisdictions are designed to be flexible and task specific *(*Marks and Hooghe, 2003, p. 237). In sum, Marks and Hooghe propose two contrasting archetypes of MLG. The first type of MLG describes a form of governance that is more closed off, with a limit to the number of jurisdictions and the ability to intersect. The second type of MLG describes a more open form of governance that intersects with a vast number of jurisdictions across territorial scales. The distinction between the two is important because it provides much-needed clarity on the different ways governance can be structured in a multilevel system.

Despite the two types of MLG identified by Marks and Hooghe, issues persist within the literature around precise components of the concept. Beyond the lack of clarity around governance, ambiguity about MLG can be grouped into three general categories. More specifically,

uncertainties about the concept revolve around the applicability of MLG outside Europe, the roles held by non-state actors and the dichotomy between policy-making structures and processes (Tortola, 2016, p. 236). Consequently, the base definition provided by Marks and discussed in the literature is insufficient for this research. The current paper involves all three axes of ambiguity regarding MLG. This is because Indigenous water governance in the Northwest Territories includes a case study outside Europe, the structures and processes associated with the governance of this resource, and non-state actors (Indigenous peoples). The following section will thus be dedicated to establishing a Canadian definition of MLG to help address the three points of ambiguity listed previously. In doing so, it will attempt to improve the theory of MLG by using a context appropriate definition and facing a conceptual weakness: the challenge of theorizing the dynamics of MLG in practice (Bache, 2012, p. 641).

2.3 A Context Appropriate Definition of Multilevel Governance

Contrary to the usage of MLG to study Europe, the notion of MLG in the analysis of intergovernmental relations is relatively new in Canada. Since confederation, studies of federalism and governance in the country have been shaped primarily by studying the relationship between the two main levels of government enshrined in the Constitution: the federal government and the provinces (Champagne, 2013, p. 45). The emphasis on these relationships can be attributed to their impact on Canadian politics. Champagne writes: “Intergovernmental relations, mainly between the provinces, the territories, and the federal government, shape Canada’s traditional political organization” (Champagne, 2014, p. 166). Therefore, an appropriate definition of MLG for Canada must prioritize intergovernmental relationships within the country, including the relationship between territories and the federal government. With the meaning of MLG derived from a

European context emphasizing the role of supranational governance, it is not an ideal fit for a case study based in Canada. For this research, a different definition of MLG will be provided.

To arrive at a definition of MLG appropriate for Canada, it is important to begin with a clear understanding of the relevant constitutional rules of the Canadian federation. The division of powers between the federal government and the provinces, territories and municipalities is set out in the Constitution Act, 1867. Canada's constitution sets out the legislative jurisdictions of the federal and provincial/territorial governments (i.e., the power to make laws). Most of these jurisdictions are exclusively assigned to one or the other level of government. Modifications from constitutional reform in 1982 did not substantially affect the configuration of arrangements already in place in the Canadian federation (Champagne and Tellier, 2017, p. 365). While the constitution is clear on the responsibilities of federal, provincial and territorial governments, a lack of clarity exists regarding the municipalities of which they are comprised of. This is because jurisdictions of municipalities are not spelled out in the 1867 constitution, which makes very little mention of the municipal sector. The constitution gives the provinces exclusive control to make laws relating to municipal institutions within their borders, meaning municipalities' powers and duties vary (Champagne, 2012, p. 30). Therefore, in addition to federal, provincial and territorial governments the study of MLG in Canada must account for local governments.

The underlying governance structures for Canada have been established. It is now possible to provide added precision in the mobilization MLG. Hence, the notion of multilevel governance refers to the interactions and coordinated intervention of local actors with central levels of government (Champagne, 2011, p. 45). Since this definition excludes the supranational level of governance and prioritizes the interaction between local and central authorities, it is more applicable to the Canadian context. With the general meaning of MLG clarified, the governance

dynamics of Canadian water governance in the Northwest Territories can be expanded upon. These governance dynamics heavily feature Indigenous water governance which will be explained in the next section of the literature review.

2.4 Indigenous peoples in Canada and in the NWT

To begin, the concept of Indigenous peoples and whom it refers to, must be identified. The government of Canada officially recognizes three separate Indigenous groups in law: First Nations, Métis, and Inuit (Caverley et al., 2020, p. 27). This refers to approximately 1 670 000 individuals in Canada self-identifying as Indigenous people, accounting for nearly 5% of the total population in 2016 and among the trio of separate groups, First Nations individuals' makeup 60% of the Indigenous population, with the Métis counting for 36% and the Inuit population at 4% (Statistics Canada 2016). Besides the groups recognized in law, there are also important distinctions within the three Indigenous peoples' subgroups in Canada. More specifically, not all Indigenous peoples in Canada have a treaty-based relationship with the crown. Additionally, while most First Nations are subject to the federal Indian Act, Inuit and Métis are not. The feral government also differentiates between "status Indians" and "non-status Indians." The former receives certain benefits under the Indian act. The latter do not qualify for these benefits and tend to reside in urban communities (Papillion, 2012, p. 287). Hence, Indigenous peoples in Canada are not monolithic. Many subgroups exist within their communities and these differences will impact the relationship between them and the Crown. For example, the position of a First Nation with a treaty relationship with the federal government will differ from the position of a First Nation without one. Consequently, MLG is better suited to capture these governance dynamics. This is because MLG can grasp differences at a local level of government and by extension track their impact on the coordinated intervention of central levels of government.

Despite the diversity of Indigenous peoples in Canada expanded upon in the previous paragraph, a shared experience of being colonized provides essential context for Indigenous peoples in Canada. In short, colonization can be understood as carious "crimes of the powerful" that have been committed, notably, the theft of Aboriginal land, disrespect for treaties, the sequestration of families, the subjection of Aboriginal children to physical and sexual abuse, and assaults through the residential school system (Comack, 2018, p. 455). Thus, Canada's colonial history has negatively influenced the collective development of Indigenous communities and the individuals within them. At the individual level, an abusive education system, the separation of children from their parents and the fact that they are victims of serious violence combine to cause significant damage. For example, children in residential schools were beaten for speaking Indigenous languages or had their mouths washed with soap for the same infraction. Children were also forcibly removed from their communities and houses to attend these abusive institutions (Sarkar & Lavoie, 2014, pp. 89–90). At the group level, dispossession of land, lack of respect for historical treaties, and poor economic conditions imposed by the colonial order have hindered the collective development of Indigenous communities.

Briefly, Indigenous peoples in Canada were subjected to internal and permanent colonization. This includes the "initial stage of diplomatic alliances and treaty making to the processes of land confiscation, forced cultural assimilation, and dismantlement of traditional forms of government" which has been documented by the Royal Commission in 1996 and by the Aboriginal Peoples and Truth and Reconciliation Commission in 2015 (Papillion, 2020, p. 390). Indigenous peoples were stripped of their ability to govern and forcefully placed at the bottom of a settler political order where their identities and ways of life were suppressed. The trauma inflicted on Indigenous peoples by colonial institutions and instruments such as residential schools and the

Indian Act affects past, current and future generations. Contemporary Canada is a case study of how the impacts of colonization cut across generations, cultures, and geographic and political divisions (Christmas, 2012, p. 5). Hence, understanding colonialism is integral for NWT Water Stewardship Strategy research.

To comprehend the cause of colonialism in Canada and its impact on the NWT Water Stewardship Strategy, basic knowledge of the legal relationship between Indigenous people and the Canadian state is a prerequisite. Indeed, contemporary Canada remains a case study of how the negative effects of colonization persist because the colonial structures were never dismantled. To this effect, the section 91(24) of Constitution Act, 1867 dictates that "Indians and Lands reserved for the Indian…. are an object of exclusive federal jurisdiction" (Papillon, 2012, p. 299). Indigenous peoples in Canada and the management of the territory on which they reside are thus recognized as the federal government's responsibility. With the lack of precision of section 91(24) of the constitution in mind, the Canadian government of the time created legislation to clarify its responsibilities to Indigenous peoples. Morten writes: "This [legislation to clarify the role of the government] is the 1876 Indian Act, a work of cradle-to-grave legislation that seeks to govern every aspect of the lives of qualifying First Nations in Canada" (2016, p. 115). In other words, the Indian Act, 1876 redefined the way Indigenous peoples lived and provided directives on several policy areas. The Indian Act is an all-encompassing document that includes detailed guidance on managing Indigenous land, education, health, policing and more. Yet, at no point does the Act explicitly define federal or First Nation responsibilities for water operations. It proposes policy directives, administrative guidelines and potential funding for on-reserve water and wastewater management (Alcantra et al., 2020, p. 158). Water governance, which refers to the "processes involved in decision-making about the use, conservation, and protection of water" is not accounted

for (Emanuel & Wilkins, 2020, para., 1). The gap concerning roles and responsibilities associated to water governance within the Indian Act partially explains the “chronic drinking water issues” and “judicial inquiries” associated with water supplies in First Nations communities (Baird et al., 2014, p. 50). It also serves to highlight the importance of searching governance methods for solutions to water insecurity in Indigenous communities.

The subject of water governance was not the only omission of the Indian act. The document failed to mention which government order is responsible for fulfilling the various functions associated with the act. Consequently, the federal government treats the funding of Indigenous programs and services as a policy obligation instead of a constitutional one. Other orders of government in Canada do not typically include the Indigenous population in their social programs. As a result, the funding and provision of services to Indigenous peoples remain a “complex maze of policies and programs” which further muddles the accountability of actors (Papillion, 2020, p. 402). With the complexity, number of actors and lack of clarity regarding roles and responsibilities accompanying Indigenous service delivery, it makes sense to apply the lens of MLG to the example of Indigenous water provision that the NWT Water Stewardship Strategy encompasses. This is because the multilevel reality illustrates the value of researching Indigenous water governance with an approach based on MLG. To summarize, the relationship between Indigenous peoples and the federal government is defined by instances of colonialism, jurisdictional confusion and is noncommittal on the dimensions of policy related to water governance. Both the Indian Act and Constitution Act are noncommittal on who does what. The following section will give more precise information on the impact of colonialism on the issue at the heart of the NWT Water Stewardship Strategy: water insecurity.

2.5 Water Insecurity: One of the Many Consequences of Colonialism

As previously explained, water insecurity refers to the consistent inability of people to use water safely for wellbeing and healthy life. Unfortunately, Indigenous peoples in "settler colonial countries such as Australia, Canada, New Zealand and the United States experience acute disparities concerning drinking water insecurity" (Wilson et al., 2021, p. 783). In Canada, water insecurity is especially problematic for Indigenous peoples with respect to drinking water. Black and McBean (2017) expand on this issue:

> Among the [Indigenous water insecurity] issues facing their communities regarding drinking water, the following were noted: obsolete; inappropriate or low quality infrastructure; inadequately trained or certified operators; insufficient number of operators; inadequate testing and inspection; frequent microbial contamination; problems within the distribution systems; dysfunctional water treatment equipment requiring immediate replacement; extremely poor raw water quality with no appropriate treatment in place; bacteriological tests indicating the presence of coliform organisms; and, lack of regular testing and maintenance of records (p. 57).

By detailing the gaps in Canadian water infrastructure to fill for Indigenous communities, Black and McBean demonstrate the high level of water insecurity within them. Even in cases where Indigenous communities have water infrastructure, the operation and maintenance of the machinery remain an issue. This state of affairs is one of the many consequences of colonialism. To this effect, Indigenous people remain "ninety times more likely than other Canadians to lack piped water" and the disparity "result[s] from and maintain [s] the colonial relationship between Canada and Indigenous peoples" (Hanrahan, 2017, p. 69). Hence, colonialism is both the root cause of water insecurity for Indigenous peoples and the reason water security has not been re-established. Colonialism causes and reproduces water insecurity for Indigenous peoples in two ways. First, colonialism creates regulatory and jurisdictional injustices in water governance frameworks. Second, water insecurity can be attributed to colonialism through the resource extraction and the environmental changes which come with it (Wilson et al.,2021, pp. 793–794).

To provide an example of jurisdictional injustice, the Indian Act does not clearly define the responsibilities for water operations despite providing these details for other policy areas such as education and health. To provide an example of resource extraction's effects, mining in the NWT is a large part of the region's economy and has a negative impact on water security. This is because mines need significant amounts of water to operate and involve discharging water into the environment (NWT Department of Environment and Natural Resources, 2018, p. 9). All in all, colonialism is the cause of water insecurity in Indigenous communities. Resource extraction, improper funding of operational costs, lack of training and water infrastructure are all symptoms of colonization.

There is a clear link to be made between water insecurity and the NWT Water Stewardship Strategy, as the vision of the strategy depicts water security as its goal. Water security means "freshwater, coastal, and related ecosystems are protected and improved; that every person has access to adequate safe water at an affordable cost to lead a healthy and productive life" (Hanrahan & Jnr. 2017, p. 4). This is why resolving water insecurity and maintaining water security is at the heart of the NWT Water Stewardship Strategy. The strategy's vision, which states that the "waters of the Northwest Territories will remain clean, abundant and productive for all time," emphasizes the long-term protection and health of water (NWT Department of Environment and Natural Resources, 2018, p. 14). Hence, the "vision and its related goals represent the epitome of water security "(Baxter & Kelly, 2017, p. 174). With the relationship between water insecurity and colonization explained, the following section will describe the relationship between Indigenous peoples, the federal government and the territorial government within the confines of the NWT Water Stewardship.

2.6 Indigenous Peoples in the NWT

Speaking to the differences among the Indigenous population in Canada, the demographics in the Northwest Territories indicate a similar number of Indigenous peoples and non-Indigenous people. According to 2016 Canadian Census data, the total population of the NWT is 41,786 and individuals with Indigenous identities are numbered at 20,860. These identities can be furthered divided into 15,115 First Nations members, 4,510 Inuit and 2,915 Métis. Overall, a near balance exists between the two groups with the non-Indigenous population numbering at 20,926 (Statistics Canada, 2016). Briefly, the demographic makeup of the NWT offers an excellent opportunity to examine the extent of Indigenous involvement in the governance processes related to water. Possessing a near 50/50 split between Indigenous peoples and non-Indigenous people, the NWT distinguishes itself from Indigenous politics in a national context. As previously stated, only 4% of Canada's population is Indigenous.

Besides the proportion of Indigenous peoples within the NWT, their geographic distribution is also an important factor to consider. While numerous, Indigenous peoples are dispersed in a manner which skews their influence over public policy and decision-making. More specifically, the bulk of the Indigenous population (mostly composed of Dene, Métis and Inuvialuit) lives outside Yellowknife region, the capital and policy-making node of the NWT. Inside the territories, however, the majority of the Members of Legislative Assemblies are independent Indigenous candidates who were elected in a political environment that espouses a consensus-based system instead of a party based one (Irlacher-Fox, 2016, p. 71). Due to this political and geographical configuration, the influence of Indigenous peoples is more strongly felt in the peripheries of the NWT, outside the capital region. The central authority emanating from Yellowknife its territorial government does not obtain the same sense of legitimacy. Further

complicating the political arrangement of Indigenous peoples in the region, many communities have negotiated or are currently negotiating for self-government agreements and land claims. Self-government agreements, which refer to arrangements with the federal government recognizing the jurisdiction of Indigenous governments in key policy areas represent an integral part of the political landscape in the NWT (Slowey, 2014, p. 355). To this effect, there are three primary land claims in the region that have been settled. Namely, the Gwich'in (1992), the Sahtu (1994), and the Tłı̨chǫ (2005) have all accepted agreements which "generally cover ownership, use, and management of land, environmental management, and resources" (Sam-Aggrey, 2020, p. 396). With a multilevel water management initiative like the NWT Water Stewardship Strategy, this reality is especially important. An Indigenous community that practises self-governance has the potential to disrupt coordination from central government because it would not be subject to its authority. With the important demographic and political characteristics of Indigenous peoples in the NWT explained, it is now possible to proceed to the unique characteristics of Indigenous governance in the same region.

2.7 Devolution & Multilevel Water Governance in the NWT

Regarding the management of land and resources in the NWT, however, it must be noted that in Northern Canada, the governance of water resources differs from the rest of Canada. In the NWT and Nunavut, the roles of territorial governments in water governance vary based on whether devolution processes have occurred (Loë, 2014, p. 134). Regional differences such as this one demonstrates that it is "more accurate to talk of a mosaic of multilevel governance relations, each with its own institutional framework and evolving dynamics" when describing Indigenous governance (Papillion, 2020, p. 420). Therefore, to understand water governance dynamics in the NWT, including devolution, a history of government institutions of the region must be established.

The land for the NWT was acquired from Britain in 1870. Five years later, the enactment of the Northwest Territory Act of 1875 established a legal basis for Dominion authority of the region. It also confirmed federal control over the delivery of services in the NWT. Further steps were taken in 1905 and 1919 to cement the bureaucratic hold of Ottawa on NWT politics by creating an advisory Territorial Council and appointing the deputy minister of the Department of the Interior as permanent commissioner of the Territory (Alcantra, 2013, p. 168). Clearly, the NWT's institutional framework has a history characterized by a strong federal influence. Yet, the region was known for being an exclusively Indigenous homeland for thousands of years prior to Canadian involvement. Most of the non-Indigenous population settled in Yellowknife for its mining industry at the end of the Second World War. Canada governed the NWT from afar, treating the territories as an Indigenous reserve and waiting until 1967 to devolve its authority (Spitzer, 2019, p. 530). Hence, the NWT acted as a federal subunit for over a hundred years before any devolution occurred. Devolution, which refers to the "transfer of significant government responsibilities from a higher level of government (such as the nation state) to a subordinate level of government" (Coates & Poelzer, 2014, p. 11). In the case being studied, this means Canada transferred authority to the NWT. The federal government moved the locus of power closer to the relevant jurisdiction, which empowered the local population and government to make more appropriate policy decisions.

It was nearly finished two years after the devolution process commenced in the NWT. By 1969, the territorial government had assumed control of most responsibilities' provinces fulfilled except for natural resources. The establishment of a fully elected Legislative Assembly Executive Committee and, by extension, responsible government followed devolution. The assembly's first elected leader of the NWT completed the transition in 1985 when he eliminated the appointments

of commissioners and deputy commissioner from the Executive Council (Alcantra, 2013, p. 168). Therefore, at that point, the final instances of appointed leadership in NWT were replaced with a system of elected representatives and responsible government. The final instance of devolution from the Government of Canada to the NWT, however, would occur almost thirty years later. The Government of Canada signed an agreement with the territorial government in June 2013 to transfer the authority of natural resources to the NWT government beginning April 1, 2014 (Coates & Poelzer, 2014, p. 4). With this development, the NWT and provinces would arrive at the same level of authority and number of responsibilities. It must be noted that the Government of Canada retained the responsibility for protecting migratory birds, fisheries resources, and navigable waterways (NWT Department of Environment and Natural Resources, 2018, p. 18). To summarize the history of events, the government of the NWT started out as a subunit of the federal government. The territories were governed remotely by a Territorial Council and the deputy minister of the Department of the Interior. These two nodes of governance were located in Ottawa and membership was based on appointment to the roles. In the modern era, the territorial government has been transformed into responsible government, headed by elected leadership and detaining powers equal to Canadian provinces. Due to this reality and the devolution of natural resources in 2014, the constitutional differences between territories and provinces will not substantially alter the configuration of water stewardship in the NWT going forward. The role of the NWT government in water governance is fully involved, and on a similar scope to provinces in Canada.

2.8 The Coexistence of Devolution and MLG in the NWT

The issue of Indigenous water governance in the NWT of Canada offers a clear example of multilevel governance, despite the devolution of responsibilities described in the paragraph above.

This is because the NWT Water Stewardship Strategy invokes the responsibility of multiple orders of government and coordinated intervention of local actors with central levels of government. Indigenous affairs are a federal responsibility; the management of natural resources (such as water) is provincial and water treatment is a local government responsibility (Champagne, 2012, p. 29). It is also recognized in Canada that all levels of government share responsibility for investing and maintaining basic infrastructure, which includes water treatment (Champagne and Choinière, 2016, p. 31). Taken together, the policy space for water governance in the NWT is multilevel. Even if relationships with Indigenous peoples are technically under the jurisdiction of the executive branch of both the federal and provincial governments, local governments are impacted in multidimensional policy areas such as water governance (Bowie, 2013, p. 91). Since devolution has empowered the territorial government to act with the authority of a provincial government in natural resource management, observations derived from a provincial standpoint are applicable.

Further justifying the emphasis on MLG in the NWT, environmental issues in Canada such as water security represent a challenge of scope for national and local governments. This is because effective strategies for the field demand a "multi-dimensional, cross jurisdictional, and long-term view of development that public administration in all countries must address" (Homsy et al., 2019, p. 572). In other words, public administration is usually implemented in a linear, specific fashion and is not optimized to address the multifaceted and overarching nature of environmental problems. To this effect, lakes, forests, and oceans are not isolated, and their ecosystems are bound to traverse multiple territory lines and sectors. Any policy decision geared towards resolving water insecurity would need to account for this reality and include multiple orders of governance in the proposed solution. Using the case of the NWT as an example, the Mackenzie River Basin for which

the NWT Water Stewardship Strategy was created for crosses three provinces (Alberta, British Columbia and Saskatchewan) and two territories: Yukon and the Northwest Territories (Latta, 2022, p. 41). Additionally, the Indigenous governance embodied in the NWT Water Stewardship Strategy is understood to be a multilevel and multi-party reality. This is because the frequency of bilateral and trilateral governance arrangements in Canada between Indigenous peoples and central government has multiplied in recent years, expanding to policy areas beyond land and resources management (Papillion, 2013, p. 5). As an example of the multilevel and multi-party reality which accompanies Indigenous government in practice, the governance of a community named Tuktoyaktuk in the NWT which participates in NWT Water Stewardship Strategy involves five levels of government: federal, territorial, hamlet, Tuktoyaktuk community corporation and the Inuvialuit regional corporation (Slowey, 2014, p. 350). Therefore, Indigenous water governance in the NWT can be accurately viewed through the lens of MLG because the NWT Water Stewardship Strategy exists in a multilevel environment. The central, territorial government must coordinate its interventions in water governance with local Indigenous governments such as the Tuktoyaktuk community and the Tłı̨chǫ community which has signed a self-governance agreement. From the perspective of Indigenous governance in the NWT Water Stewardship Strategy, MLG and devolution coexist. Control of natural resources belongs to the government of the NWT, and by extension the role of water governance does as well. The existence and involvement of Indigenous governance within the NWT, however, ensure that a space exists for MLG.

3.0 METHODOLOGY

The research question asks what approach to water governance is best suited to diminish water insecurity among Indigenous peoples in Canada. Answers are being sought regarding how actors

in Canada can best manage water. Since a case study is an optimal strategy when researchers are seeking "information about what (groups of) people perceive and decide [about Canadian water governance], in relation to their interaction during a certain period" the chosen methodology is appropriate (Swanborn, 2010, p. 28). The case study method is ideal to answer the question being posed because information is being sought on the decisions made by entities within multiple levels of government about the use, conservation, and protection of water. Furthermore, the descriptive nature of the research question lends itself to an exploratory case study. Descriptive research tends to revolve around "what" or "how" questions that shape many case studies, including the current study and are well suited to an exploratory approach (Swanborn, 2010, pp. 28–29). Fittingly, case studies possess an intrinsic advantage in research of exploratory nature and the current paper searches existing Indigenous water governance agreements (Gerring, 2004, p. 349). Therefore, the analysis attempts to discover whether implementing multilevel Indigenous water governance could reduce water insecurity in Indigenous communities.

3.1 The Case Study Method

Before the discussion on methodology proceeds further, the concept of a case study must be defined because it is not standardized, and researchers have many different understandings of the key term (Seawright & Gerring, 2011, p. 296). To clarify the matter, Thomas writes: "Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods." (2011, p. 513). The scope of the current project includes qualitative analysis of the decisions, projects and institutions related to water governance in the Northwest Territories. Building on his definition, Thomas explains that a case study must contain a subject and an object, with the reasoning for case selection found in the dynamic between the two terms. The subject of a case study is to be understood as a "practical,

historical unity" and the object an "analytical or theoretical frame" (Thomas, 2011, pp. 513–514). The subject in this study is active water governance involving Indigenous peoples in Canada, which represents a practical and historical unit. Namely, the NWT Water Stewardship Strategy is to be examined. This study's object or analytical framework is multilevel governance, which the NWT Water Stewardship Strategy is characterized by.

Before answering the question about how multilevel governance can be conceptualized as an analytical framework, it is necessary to identify the methods and sources behind data collection for the cases being studied. While the generation of new data is valuable, existing data for social research is plentiful, pertinent and easily accessible online (Tight, 2019, p. 2). As a result, preexisting data will be used to build the case studies because it is more feasible and much less costly. To unearth this information, documentary research about the NWT Water Stewardship Strategy and the Atlantic First Nations Water Authority is planned. Put simply, this research method consists of "analyzing various types of documents including books … academic journal articles and institutional reports" (Morgan, 2021, p. 64). Methodologically, documentary research can be divided into five types: literature reviews, systematic reviews, meta-analysis, secondary data analysis, historical research and policy research (Tight, 2019, p. 62). The genre of documentary research chosen for this project is literature review. Hence, the research will focus on written academic texts. Aligned with the concept of literature review, these texts will be "identified, collected together and analyzed to present a synthesis" (Tight, 2019, p. 62). This choice is fitting because the findings are intended to be exploratory and documents detailing Indigenous water governance is easily accessible. Several types of documents, which are written copies of documents (whether virtual or physical) and "include policy reports, committee papers, public treatises, works of fiction, diaries, autobiographies, newspapers, magazines and letters" are

available online and provide information for the case study (Mcculloch, 2004, p. 1). Hence, documentation about the NWT Water Stewardship Strategy from 2012 to 2022 in the literature and from other documents will be used. This is a key choice because documents sourced from outside the literature, produced by governmental and private agencies have been identified as one of the more important categories of documentary sources (Mcculloch, 2004, p. 4). Additionally, using a wider range of document types, better represents alternative viewpoints and can help overcome issues of reliability and bias (Mcculloch, 2004, p. 37). Ultimately, using different types of documents to source data for the NWT Water Stewardship Strategy analysis will provide a more balanced view of the case study and increase its internal validity.

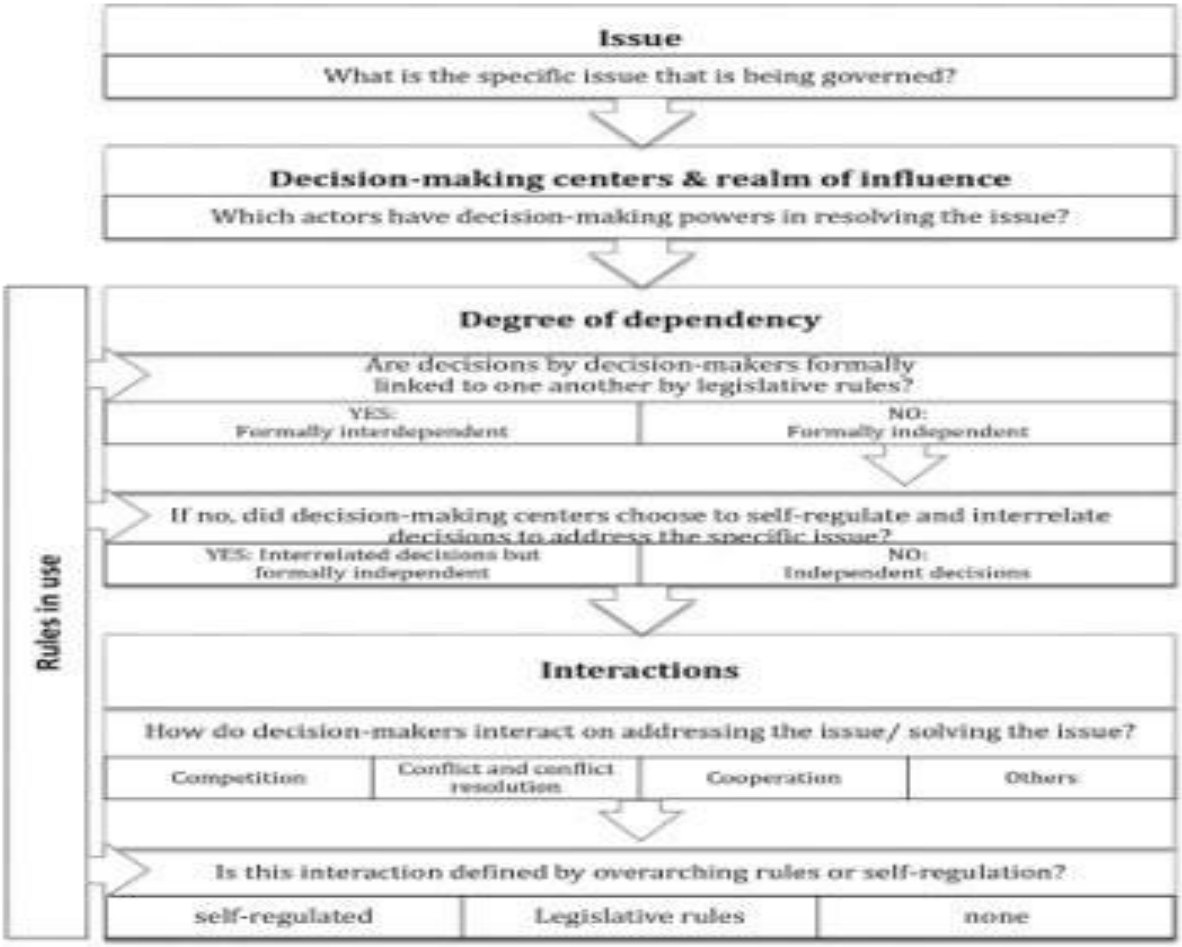
3.2 Case Selection and Analysis

As previously mentioned, the dynamic between subject (historical and practical entity) and object (analytical frame) is key as it relates to the choice of cases being studied. Aligned with this reasoning, Seawright and Gerring write that case selection is "The primordial task of the case study researcher, for in choosing cases, one also sets out an agenda for studying those cases" (2011, p. 294). Thus, the subject of Indigenous water governance in Canada and the object of multilevel governance dictated the choice of case and type of analysis. As a result, the NWT Water Stewardship Strategy was chosen because it represents a rare example of the dynamic between Indigenous water governance and MLG in Canada. Building on this rationale, the cited example of water governance is a critical case. This is because critical cases have strategic implications for the larger problem (Flyvbjerg, 2006, p. 229). Since the level of Indigenous involvement in both cases is significant, and the larger issue is Indigenous governance, early examples of Indigenous water governance have strategic importance. Also, water governance in North America is a key issue that encapsulates many policy areas, including "environmental protection, economic

development and industrial growth, shipping and transportation, [and] Indigenous rights" which creates "fertile ground to seek nascent and established MLG processes" (Alcantara et al., 2016, p. 43). Thus, the focus on water governance to study MLG is justified.

With case selection explained, it is now possible to detail the strategy for analyzing the data gathered on the NWT Water Stewardship Strategy and Atlantic First Nations Water Authority. The method being implemented is content analysis. A contemporary author, Krippendorff (2013) explains: "Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (As cited in Tight, 2019, p. 161). Therefore, data analysis for the present case studies will rely on a framework from another text to make inferences on multilevel water governance. More specifically, the article of Heinen and colleagues about the multiple dimensions of climate governance provides this framework. While establishing the differences between polycentric and multilevel governance concepts, the authors also provide a research framework capable of following the complex interactions of multilevel, climate governance arrangements (Heinen et al., 2021, pp. 56–57). Since multilevel water governance and multilevel climate governance represent similar spheres of governance, it has been decided to use this framework because it provides "an analytical framework that allows authors to pre-consider several attributes of governance and to analyze the case studies along these dimensions" (Heinen et al., 2021, p. 65). Hence, the NWT Water Stewardship Strategy will be assessed along the dimensions in the figure depicted below.

Climate governance analytical framework (Figure 4, Heinen et al.,2021, p. 66).



3.3 Data Sources for the Case Study

To source data for the case study, a literature review focusing on academic texts about the NWT Water Stewardship Strategy was conducted using the University of Ottawa's Omni Library search engine. The search terms included: NWT Water Stewardship Strategy, Indigenous water governance in Canada and NWT water governance. Evidently, the first term was chosen because it encompasses the subject of the study. The second term was selected to gather information on Indigenous water governance within Canada and capture any articles about the NWT Water Stewardship Strategy that were not titled as such. The third search term seeks to capture

information on water governance in the NWT outside the strategy, and it was chosen to provide a broader perspective of issues. In addition to the academic texts regarding the NWT Water Stewardship Strategy, publicly available documents about the strategies such as evaluation reports, summary reports and progress reports will be mobilized. These types of documents will enrich the quality of research by providing up-to-date information on the implementation of the NWT Water Stewardship Strategy directly from its stakeholders.

Research Limitations

The research being presented regarding Indigenous multilevel water governance is limited in a few areas. The first is that case studies are inherently difficult to generalize, which is a concern for advocates and opponents of the approach. To account for this limitation, some suggestions include assessing multiple cases, using a multitude of sources, studying the issue at different times, etc. (Jensen & Rodgers, 2001, p. 237). To address the weakness regarding generalization, the research design includes sources from different types of documents and considers a critical case with strategic importance. The NWT Water Stewardship Strategy is strategically important because it positions Indigenous peoples to play a significant role in the governance of key water resources. To this effect, the Mackenzie River Basin which the NWT Strategy encompasses contains "terrestrial and aquatic ecosystems [that] are nationally and internationally significant" and "globally significant wetland, tundra, and forest ecosystems" which house many important species for part or all the year (Morris & Loë, 2016, p. 2). A second limitation is that a portion of the documents being used (government reports) are created to "illuminate the official and public outlooks of the social and political elite" and are "less helpful for an understanding of social groups that were excluded or marginalized" (Mcculloch, 2004, p. 22). In other words, the government documents that will be consulted for case study will likely show positive developments more

frequently than negative ones. They are also less helpful for representing Indigenous peoples because they represent a group that has been marginalized. A third limitation is related to the research being undertaken. Documentary research analyzes what has been written, and some important aspects (i.e., a conflict between individuals in the planning stage) may not be documented. Interviews of key stakeholders in the cases of water governance could help fill these gaps, but that is not feasible for the scope of the present research.

To conclude, the case study is a "powerful instrument to bring out new ideas" but if research design choices are poor "it can also be reduced to nothing" (Dumez, 2015, p. 55). In other words, case studies represent an excellent tool for understanding novel ideas and scenarios but are especially vulnerable to flaws in research design. The lack of standardization across case study research explained at the beginning of the section could play a role in this issue. Regardless, the current paper will account for these vulnerabilities by citing a critical case, using sources from both academic and grey literature in the research and implementing an analytical framework for data analysis. It is also worth noting that the analysis of content and documents have been identified as "particularly applicable to qualitative case studies" (Bowen, 2009, p. 29). Therefore, paring a case study with document-based research and analysis should also reinforce the methodological rigour of this project's research design. Given the unique governance arrangement in the NWT and the relatively large presence of Indigenous peoples compared to the rest of Canada, the region's water stewardship strategy qualifies as a novel scenario. Following the steps described above should strengthen the methodological framework and help mitigate the negative impact of the limitations associated to this case study. With the historical context, the governance framework, key concepts and research methodology defined the next section will present background information for the NWT Water Stewardship Strategy.

4.0 CASE STUDY

4.1 Northern Voices, Northern Waters: Context for the NWT Water Stewardship Strategy

The strategy, which is formally titled Northern Voices, Northern Waters: The NWT Water Stewardship Strategy was created in May 2010. It aims to ensure that the waters of the Northwest Territories remain clean, abundant, and productive for all time by providing direction for the long-term stewardship of the territories' water resources (NWT Department of Environment and Natural Resources, 2010, pp. 1–2). The ideas of northern waters and northern voices represent two of the primary components of the NWT Stewardship Strategy and will be used to orient a description of the initiative. Regarding northern waters, much of the NWT is encompassed by large bodies of water. In fact, a significant part of territories' surface is freshwater, with the water sources in the region described as abundant (Indigenous and Northern Affairs Canada, 2010, p. 1). Evidently, water represents one of the territories' most valuable resources. The waters of the NWT include the Mackenzie Delta, which is responsible for much of this wealth because it is Canada's largest freshwater delta and covers approximately 13,500 km2 of surface area. For scale, the Mackenzie River Basin, a part of the delta's larger ecosystem, is 1/5 the size of Canada (NWT Department of Environment and Natural Resources, 2010, pp. 6–7). Given the hydrographical characteristics of the NWT mentioned, it is no surprise that the water resources that represent the target of the strategy are all a part of freshwater ecosystems. These water resources include lakes, rivers, deltas, wetlands and the surface and groundwater that supplies them whether it is frozen or liquid. The freshwater ecosystems that are home to these bodies of water have little or no salt in them and encompass the "interacting components and interdependencies of air, land, water and living [and nonliving] organisms that depend on water resources" (NWT Department of Environment and

Natural Resources, 2010, p. 3). Therefore, in the context of the NWT Water Stewardship Strategy northern waters encapsulate the region's freshwater resources, referring to over 10 percent of the territory's surface area. As for northern voices, the concept can be linked to the inclusion of many voices from the NWT into the developmental process of the NWT Water Stewardship Strategy. The development of the strategy can be credited to a group of Indigenous, and government representatives, hailing from an Aboriginal Steering Committee, the Northwest Territories Department of Environment and Natural Resources and the federal government's Indigenous and Northern Affairs Canada (NWT Department of Environment and Natural Resources, 2013, p. 5). True to its full name, the multilevel water governance agreement placed the input of Indigenous voices at the forefront of negotiations, including many important voices from the north in the project.

Even with the complex problem of environmental sustainability that the NWT Water Stewardship Strategy seeks to address, and the difficulties associated with coordinating such a comprehensive multilevel governance agreement the initiative developed quickly (Homsy et al., 2019, p. 572). In fact, the entire development process lasted less than two years. Initial conversations on the topic of water stewardship in the NWT began in June 2008 due to issues identified with the region's water quality. A discussion paper was shared by The NWT Department of Environment and Natural Resources and Indigenous and Northern Affairs Canada entitled Towards an NWT Water Resources Management Strategy for the Northwest Territories. (NWT Department of Environment and Natural Resources, 2011, pp. 2–3.) The authors collected feedback on this document from water partners across the NWT with the assistance of an Aboriginal Steering Committee which included key members from Acho Dene Koe First Nation, Dehcho First Nations, Inuvialuit Regional Corporation, NWT Métis Nation and other Indigenous

groups. Following the input received through workshops with locals and other water partners such as universities and non-profit organizations, a draft for the NWT Water Stewardship Strategy was released November 2009. Finally, more workshops and dialogue with NWT water partners, and the national and international water policy innovators led to the finished product being disseminated in May 2010 (NWT Department of Environment and Natural Resources, 2011, p. 3). Hence, the strategy was completed in less than two years (June 2008 to May 2010). Due to the enactment of the *NWT Lands and Resources Devolution Agreement* in April 2014, however, the NWT Water Stewardship Strategy required an update. As previously explained, important policy changes occurred when water and land management responsibilities in the NWT were devolved from the federal government (Indigenous and Northern Affairs Canada) to the territorial government. As a result, in 2018 the NWT Water Stewardship Strategy was primarily modified to reflect the significant policy changes the territorial government underwent. This means the strategy retained the original "goals, vision, guiding principles, approaches and Keys to Success adopted in 2010" with the government of the NWT now "solely responsible for coordinating the implementation of the strategy" (NWT Department of Environment and Natural Resources, 2018, p. 3). Indeed, the government of the NWT and its departments will contribute to the implementation of the NWT Water Stewardship Strategy through multilevel governance. Much as it was in 2010, the central, territorial government continues to coordinate the intervention of local Indigenous actors in water governance within the NWT. The next section will briefly explain the interventions in water governance and how the NWT Water Stewardship Strategy works in practice.

4.2 NWT Water Stewardship Strategy: How Does it Work?

The NWT Water Stewardship Strategy uses a multi-faceted approach to govern water resources. It functions by setting a series of goals geared towards ensuring the quality of water in the NWT and jurisdictions flowing into the NWT. The strategy defines broad tasks to achieve these goals, such as increased research and monitoring, creating trans-boundary water agreements with neighbouring jurisdictions, and developing community-based monitoring and local capacity (NWT Department of Environment and Natural Resources, 2013, p. 1). With the combined output of these tasks, the NWT Water Stewardship Strategy's implementation is made possible. These tasks can be further divided into four interrelated approaches: "stewardship, an ecosystem-based approach within watersheds, understanding and accounting for the value of water and watersheds, and translating information into informed decision-making" (NWT Department of Environment and Natural Resources, 2018, p. 17). Hence, the NWT Water Stewardship Strategy prioritizes local ecosystem health, the status of water sheds and gathering useful data for decision-making in water governance. It must be noted, however, that the strategy is based on the idea of stewardship instead of governance. This means all people are viewed as part of the environment and as a result everyone is a water manager with a duty to ensure their actions safeguard the environment (NWT Department of Environment and Natural Resources, 2018, p. 18). Thus, the NWT Stewardship Strategy conceptualizes water security and watershed stewardship as a shared responsibility, requiring the care of individuals and groups actors such as governments to be successful. Watersheds are areas of land that act as a drain for water, with networks of pathways above and below the earth's surface for the aquatic resources to converge into increasingly large bodies of water (NWT Department of Environment and Natural Resources, 2010, p. 13).

Table 9.1: Categories of Keys to Success [for the NWT Water Stewardship Strategy] (p.178).

Category	Work together	Know and Plan	Use responsibly	Check our progress
Brief description	Building a cooperative space for water partners to collaborate	Collectively understanding ecosystem health through multiple ways of knowing	Ensuring up-to-date, relevant policy and guidance for informing water use decisions	Evaluating the progress of implementation through routine checks and formal audits
Core desired outcomes	-Improved collaboration -Improved communication -Increased awareness and engagement -Access to and use of best available information for informed decisions at multiple scales	-Collectively developed comprehensive monitoring and research programs -Opportunities for active and meaningful community involvement -Holistic understanding of ecosystem health and processes -Timely and accessible reporting to inform decision-making	-Consistency and transparency in decision-making -Routine evaluation of legislation and regulations to maintain relevancy and appropriateness -Ensuring capacity to promote compliance	-Transparency and accountability of the Strategy implementation -Adaptability to changing priorities and circumstances (e.g. climate change) -(Re) affirming partner commitment -Relevancy to northern partner needs
Examples of actions/activtities	-Bilateral Water Management Agreements -Mackenzie DataStream data management system	-NWT-wide Community-based Water Quality Monitoring Program -Decho First Nations AAROM program -Slave River and Delta Partnership	-Completion of The Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT -Completion of policy document on Water and Effluent Quality Management	-Annual water partner workshops -Progress report cards -Independent evaluation (2015)

By focusing on ecosystems and the health of watersheds, the security of water can be maintained because the land, which acts as a drain for these resources, functions as it should. Changes to land could alter the water pathways that makeup the ecosystem and negatively impact the drainage processes. This is why the NWT Water Stewardship Strategy has stated that it is key to "understand and consider structure, function, and processes within the ecosystems, and all values within the watersheds" (NWT Department of Environment and Natural Resources, 2010, p. 12). For additional details on the specific actions taken by water managers to accomplish goals and implement the four interrelated approaches associated with the NWT Water Stewardship Strategy, a table summarizing key activities linked to the strategy authored by Baxter and Kelly (2017) is shared below.

4.3 Applying the Climate Governance Analytical Framework in the NWT

The general explanations of MLG in Canada, devolution in the NWT and the NWT Water Stewardship Strategy has been useful to understand that the implementation of the *Northwest Territories Water Stewardship Strategy* amounts to a critical case of MLG featuring Indigenous water governance. Yet, the mere identification of this reality is insufficient. It does not allow the research to determine whether using MLG as a governance model could help reduce water insecurity for Indigenous people in Canada. It also, does not allow the research to determine whether the prioritization of Indigenous Peoples within MLG is impactful as it pertains to diminishing the level of water insecurity Indigenous communities experience. In other words, the literature reviewed to this point did not provide the appropriate material to analyze the governance of the NWT Water Stewardship Strategy in practice. To this effect, a group of authors write: "Missing from the literature is a comprehensive conceptualization of a multilevel governance framework that tracks the various complex interactions" (Homsy et al., 2019, p. 572). Therefore,

there is a need to utilize a framework capable of tracking interactions across multiple levels to complete the analysis and fully observe the intricacies of the NWT Water Stewardship Strategy. The article of Heinen and colleagues titled *Five Dimensions of Climate Governance: A Framework for Empirical Research Based on Polycentric and Multilevel Governance Perspectives* helps in this area. While establishing the differences between polycentric and multilevel governance concepts, the authors also provide a research framework capable of following the complex interactions of multilevel, and climate governance arrangements. Instead of "pre-emptively describing climate governance arrangements as polycentric or multilevel" the article provides "an analytical framework that allows authors to pre-consider several attributes of governance and to analyze the case studies along these dimensions" (Heinen et a., 2021, p. 9). In other words, the authors have said that the mobilization of a theoretical framework is essential to understanding case studies dealing with multilevel and polycentric governance. Given the conceptual ambiguity surrounding the governance aspect of MLG previously discussed, the argument to implement a framework that clarifies several governance attributes is sound. In the case of the NWT Water Stewardship Strategy, this is especially relevant due to the immense scope of the water resources strategy and the number of implicated Indigenous governments. As depicted in the methodology, the climate governance analytical framework which will be used to assess the water stewardship takes the form of a series of questions, grouped into four large categories: issue, decision-making centres & realm of influence, degree of dependency and interactions (Heinen et a., 2021, p.10). The analysis section of this paper will be structured using these categories and shall answer the series of questions.

To summarize the previous paragraph, the information provided on the NWT Water Stewardship Strategy has offered an excellent starting point to comprehend its multilevel nature

and the involvement of Indigenous peoples in the initiative. This information, however, is incapable of capturing the more complex interactions associated to the implementation of the water governance strategy. As a result, the Climate governance Analytical Framework proposed by Heinen, and colleagues is invaluable to this research. It will shed light on the intricacies of the NWT Water Stewardship Strategy and help determine whether using MLG as a governance model could help reduce water insecurity for Indigenous people in Canada. Thus, the next section will apply the analytical framework and enable an in-depth analysis of MLG interactions within the NWT Water Stewardship Strategy.

5.0 ANALYSIS

5.1 What is the specific issue that is being governed?

Simply put, the issue being governed in the NWT Water Stewardship Strategy is the security and long-term health of the region's water resources. The strategy's original vision, which was renewed in 2018 states: "*The waters of the Northwest Territories will remain clean, abundant and productive for all time" (*NWT Department of Environment and Natural Resources, 2010, p. 10). Hence, the issue of water governance in the NWT is addressed with a holistic approach focused on sustainability, water quality, productivity, and the future of the territories. As previously mentioned, the activities which encompass the scope of water governance in the NWT Water Stewardship Strategy are not limited to water. While the issue is specific, the strategy itself is broad. It includes stewardship, safeguarding of ecosystems, the management of watersheds and encapsulates many smaller tasks such as monitoring water quality. Unfortunately, the breadth of these responsibilities can cause capacity issues in a region that is already bereft of resources. An independent evaluation based on the first five years of the NWT Water Stewardship Strategy's

implementation (2010–2015) led by Harry Cummings Associates & Shared Value Solutions in 2015 summarized the challenges with capacity:

> Many of the key informants [who occupied important roles in the implementation of the NWT Water Stewardship Strategy] pointed to capacity issues as an ongoing challenge. Operationalizing the Water Strategy is challenging given the wide scope of objectives it is trying to achieve and the capacity (e.g., human, financial) within the GNWT and among the different partners is limited. Finding the funding and human resources to support all the Water Strategy initiatives equally is challenging. As noted by one key informant, there are many people engaged in water-related activities who don't get paid for all the work they do—they do it because they believe in it. (p. 8)

On the surface, these results from the first implementation phase of the NWT Water Stewardship (2010–2015) suggest that water partners involved in the initiative should narrow their focus to be less resource intensive. Yet, 95% of the key informants interviewed in the context of an independent evaluation based on the second five years of the NWT Water Stewardship Strategy's implementation (2015–2020) felt that the goals and vision of the Water Strategy were relevant (Hearns, 2020, p. 16). Therefore, there is a desire and a need to maintain the broad scope of activities outlined in the initial vision of the NWT Water Stewardship Strategy. This is because "geomorphology and ecology of the Mackenzie Delta are shaped by recurrent flooding and sedimentation" and the water basin is a "vast low-lying alluvial plain intersected by a network of channels and thousands of lakes" (Kokelj et al., 2012, p. 258). Consequently, it is impossible to safeguard northern waters in separate parts. Small changes to land, flows of water and within ecosystems can prevent watersheds from working and alter the convergence processes. The strategy elucidates: "Water is a defining feature for much of the NWT's environment, including karst topography, widespread permafrost, deltas … sustainability of our natural environment is directly dependent on its waters and the movement of these waters through the water cycle" (NWT Department of Environment and Natural Resources, 2010, p. 8). With this reality, it is easy to see

why the NWT is best suited for a holistic approach to water governance rather than an issue-specific approach.

5.2 Decision-making centres & realms of influence

The second part of the climate governance analytical framework being used for the analysis of the NWT Water Stewardship Strategy focuses on decision-making centres & realms of influence, and asks which actors have decision-making powers in resolving the issue. To answer this question, it is necessary to identify the primary decision-making centres for water governance in the NWT. One of the decision-making centres in the implementation of the NWT Water Stewardship Strategy is the government of the NWT itself. Although there were leadership and interest across federal and territorial government agencies, the territorial government of the NWT spearheaded the water strategy's development and remains the "main driver" of the initiative (Latta, 2018, p. 7). The other decision-making centre in the implementation of the NWT Water Stewardship Strategy is the Indigenous Steering Committee. As previously stated, it chaired the development of the strategy in 2010, representing northern voices in the initiative. After the initial stages, the committee helped create multiple action plans (2011–2015 and 2016-20) while ensuring Indigenous values and rights continue to be respected in implementation activities. Members of the committee currently include representatives from Dehcho First Nations, Gwich'in Tribal Council, Inuvialuit Regional Corporation, Kátł'odeeche First Nation, North Slave Métis Alliance, Northwest Territory Métis Nation, Sahtù Secretariat Incorporated, Salt River First Nation, Tłı̨chǫ Government, Akaitcho Territory Government *(*NWT Department of Environment and Natural Resources, 2019, p. 6). Essentially, the two entities that make decisions regarding the NWT Water Stewardship Strategy are the region's territorial government and a committee comprised of many representatives from Indigenous communities in the NWT. Theoretically, the arrangement should

allow equal representation of Indigenous and non-Indigenous interests as each side has a voice in decision-making. In practice, however, Indigenous peoples do not have the same input level because many communities must speak through one Indigenous Steering Committee. Consequently, improving the collective feeling within the NWT Water Stewardship Strategy has been cited as an area of improvement in evaluating the report. Key informants shared concerns with evaluators that the Water Strategy and its Action Plan were exclusively set by territorial policy in the NWT (Hearns, 2020, p. 7). Hence, the Indigenous Steering Committee has not provided enough of a platform to create a sense of ownership among communities about the NWT Water Stewardship Strategy. Despite the existence of two decision-making centres, a sentiment that the territorial government is the lead persists.

While the government of the NWT and the Indigenous Steering Committee are working on the same issue of water insecurity, notable differences exist between the realms that influence the respective decision-making centres. On the one hand, the Indigenous Steering Committee is influenced by Indigenous values and traditional knowledge on water. While non-Indigenous peoples see water primarily as a resource, Indigenous peoples tend to view it as an "essential substance for all life" that is "integral to culture and collective identity" (Emanuel & Wilkins, 2020, p. 6). As a result, the relationship between humans and water is considered sacred among Indigenous peoples. This ethos is reflected in the NWT Water Stewardship Strategy, with water being described as fundamental to all life and as an integral part of Indigenous culture (NWT Department of Environment and Natural Resources, 2010, p. 3). On the other hand, the government of the NWT is influenced in its water stewardship by the legacy of colonialism and western science on water governance. Historically, Canada has conceptualized water as a resource or property to be used and managed for the advantage of citizens. The country's laws extend this

concept by focusing on the establishment of rights or jurisdiction over water through property rights, with little attention to ecological conditions (Alcantra et al., 2016, p. 168). Above all, the colonial order views water as a resource to own. Furthermore, the deliberate undermining of Indigenous languages, culture, and ideas about medicine which accompanied colonization, has systematically biased the perception of people against Indigenous science (Smylie et al., 2014, p. 19). In other words, the legacy of colonialism in the NWT means the input of western science in decision-making is prioritized for issues such as water insecurity. Important differences between Indigenous and Western perspectives on water governance and security do exist. Indigenous knowledge systems are usually ecological, holistic, relational, pluralistic, experiential, timeless, infinite, communal, oral and narrative-based, while Western science tends to be reductionist, linear, objective, hierarchical, empirical, static, temporal, singular, specialized, and written (Smylie et al., 2004, p. 141). If not balanced correctly, the amplitude of these theoretical differences could cause problems with decisions made about the direction of the NWT Water Stewardship Strategy. Fortunately, sufficient value was attributed to Indigenous theories and knowledge about water stewardship from the early stages of the strategy. Latta (2018) provides an example of this high valuation of Indigenous science, writing:

> Relatively early in the strategy, community-based water monitoring became one important vehicle for building on this common interest to develop relationships and build trust between Indigenous communities and the GNWT Ministry of Environment and Natural Resources. Although the monitoring itself collects data according to the principles of Western science, community input to monitoring locations rests significantly on traditional ecological knowledge (TEK). This established a precedent early in the Strategy around respecting and working with different kinds of knowledge, demonstrating commitment on

> all sides to the principles expressed in the Northern Voices, Northern Waters (2010) document. The ASC provided ongoing oversight as the community-based monitoring strategy emerged, while ASC members also often played an important role in facilitating community-level engagement (p. 9).

This summary of events demonstrates that a balance between Indigenous and Western science is being maintained in water monitoring, which is an important function of the water strategy. Furthermore, Indigenous traditional knowledge is implemented in a way that maximizes it effectiveness. Indigenous methods in monitoring are founded on strong cultural and spiritual relationship to place. A strong sense of place is more suitable for distinguishing patterns of natural ecological variably (Parlee et al., 2021 p. 4). Hence, relying on Indigenous traditional knowledge to determine water monitoring locations means it is being used effectively. This is because the strong sense of place accompanying Indigenous monitoring can be used to select the right locations to monitor for ecological changes. Despite the value of traditional knowledge in water monitoring, work on its inclusion into decision-making processes needs to be actioned. To this effect, an evaluation of implementation activities associated with the NWT Water Stewardship Strategy found that traditional knowledge is considered as "an add-on aspect to programs" and is "not adequately included and factored into decision-making" (Harry Cummings and Associates & Shared Value Associates, 2015, p. 63). All in all, both the government of the NWT and Indigenous peoples have decision-making power in resolving issues related to water insecurity and governance. This power, however, is skewed towards the territorial government and western science. Efforts have been made to include Indigenous traditional knowledge into the implementation of the NWT Water Stewardship Strategy, but this inclusion does not extend to decision-making with enough regularity.

5.3 Rules in use

Since the NWT Water Stewardship Strategy is a concrete example of MLG, returning to the distinction between Type 1 and Type 2 MLG is helpful to understand the underlying rules in use. The NWT Water Stewardship Strategy is an instance of Type 2 MLG because the number of jurisdictions encompassed by the strategy is vast, it operates across multiple territorial scales and is a flexible and task-specific design. As previously stated, the Mackenzie River Basin for which the NWT Water Stewardship Strategy was created crosses three provinces (Alberta, British Columbia and Saskatchewan) and two territories (Yukon and the Northwest Territories). It involves task-specific activities and water governance to resolve the issue of water insecurity such as the monitoring of watersheds and water quality. Taken together, the multifaceted and cross-jurisdictional nature of water governance and security in the NWT necessitates the flexibility associated with Type 2 MLG. Canada's federal, municipal, and provincial governments each have a stake in the governance of Indigenous communities with municipalities possessing a smaller role. Through the lens of Canadian federalism, these three government orders fulfill various responsibilities concerning the governance of Indigenous peoples and their communities (Alcantara & Spicer, 2016, p. 182). In other words, the governance of Indigenous issues in Canada typically involves Type 1 MLG. Stable territorial jurisdictions that do not intersect and operate at a limited number of levels exist to fulfill various policy responsibilities. The departure from the norm in the case of the NWT Water Stewardship Strategy has important implications for the rules in use for the strategy.

The influence of Type 2 MLG on the NWT Water Stewardship Strategy means that the rules in use will demonstrate flexibility and openness. From the introduction of the strategy, this reality is established. It reads: "Northern Voices, Northern Waters: The NWT Water Stewardship

Strategy (the Strategy) sets a common path forward to steward our waters. All water partners, including all water users, are encouraged to embrace the Strategy as a starting point for future actions" (NWT Department of Environment and Natural Resources, 2018, p. 4). In other words, participation in the initiative is voluntarily. Water partners and users are urged to use the Strategy, but there are no rules in place to enforce compliance. Furthermore, instead of a rigid design the idea of a common path forward to steward water is encouraged and promoted. The choice to set a more general direction for the strategy rather than a specific approach shows flexibility but there are some drawbacks to the looseness. To this effect, an evaluation of the NWT Water Stewardship Strategy discovered that work on regulatory processes associated to water governance and the initiative is undeveloped. A clear framework for how the strategy could be properly implemented in more communities and development projects is needed (Harry Cummings and Associates & Shared Value Solutions, 2015, p. 55). Hence, the involvement of water partners in the NWT Water Stewardship Strategy is not governed by strict rules which can cause information gaps and challenges with site-specific participation. Yet, overarching guidelines for participants are established in action plans which are created for the strategy. The recently published 2021–2025 NWT Water Stewardship Strategy Action Plan represents the third iteration of a series of five-year action plans which provides concrete measures to achieve the strategy's goals (NWT Department of Environment and Natural Resources, 2021, p. 3). These concrete measures function as the rules for the strategy. More specifically, the Action Plan identifies the "Keys to Success, with associated Action Items and deliverable dates, and performance indicators to track the effectiveness of implementation" and involves "ongoing review and evaluation" (NWT Department of Environment and Natural Resources, 2021, p. 4). Hence, the rules in use are encapsulated in the contents of the plan. Along with the four guiding principles previously listed, the Action Plan

created tangible objectives with deadlines and established what water partners had to do in a given timeframe. The NWT Water Stewardship Strategy and its companion plan did not explicitly state rules to follow. Instead, these two documents set detailed guidelines which governed the conduct of participants and acted as the rules in use. While the openness on this front could theoretically cause issues about proper participation in the NWT Water Stewardship Strategy, the compliance of active water partners suggests otherwise. Indeed, participants in the water strategy were evaluated and graded at the highest possible score of highly satisfactory concerning routine progress checks. This means information on the Keys to Success and Action Items was shared by partners annually with a high rate of reporting. As a result, progress reports captured all the necessary details and are available for all the years (Hearns, 2020, p. 32). Despite the flexible approach to the enforcement of rules outlined in the NWT Water Stewardship Strategy, its participants were compliant.

Besides the flexible rules being used in the context of the NWT Water Stewardship Strategy, there are also the legislative rules set by Canadian law. Most of the relevant details on this topic have already been shared in a previous section of this. Briefly, the governance of water resources has been devolved from the federal government to the territorial government of the NWT as of 2014. While Canada has retained jurisdiction over fisheries, waterways, and migratory birds the NWT possess full authority over water resources. This is why the territorial government has been called the main driver of the NWT Water Stewardship Strategy and the reason it represents a decision-making centre in the initiative rather than the federal government. As for the Indigenous Steering Committee, the other primary decision-making centre, its role in the strategy exists because of the layering of MLG with the established division of powers. Much like other instances of Indigenous governance in Canada, the participation of Indigenous peoples is characterized by

"a multiplication of decision-making spaces and processes" which coexist "in tension with the existing federal structure without altering it" (Papillion, 2012, p. 291). In other words, the active role played by Indigenous peoples in the strategy is not accompanied by changes to the usual rules in use. Consequently, the unequal power relations and living conditions created by colonialism continue to be "a major impediment to recognizing both the rights and the knowledge of Indigenous peoples in relation to environmental management problems" and can lead to the replication of colonial order (Bowie, 2013, pp. 102–103). Evidently, colonial rules are both oppressive and incompatible with Indigenous perspectives which adds a base level of tension to the MLG associated with the NWT Water Stewardship Strategy. With less than 5% of Action Items at risk of being continued or having benefits post 2020, clearly, the water partnership is not being defined by the legacy of colonialism (Hearns, 2020, p. 1).

5.4 Degree of Dependency

Regarding degree of dependency, the first question in the climate governance analytical framework being mobilized in the analysis asks whether decisions by decision makers are formally linked to one another by legislative rules. The preceding section of the analysis revealed that there are no legislative rules in use for the NWT Water Stewardship Strategy. Therefore, decisions cannot be formally linked. Fortunately for the health of the territory's water resources, decision makers have chosen to self-regulate and interrelate decisions to establish and maintain water security. In fact, the action plan of the NWT Water Stewardship Strategy shows that participants collaboratively decide on the goals and implement the vision together. Co-design, co-management and co-decision-making are foundational principles for water partners involved in the water strategy (NWT Department of Environment and Natural Resources, 2021, p. 11). In other words, to address the issue of water insecurity participants in the NWT Water Stewardship Strategy choose to self-

regulate and interrelate decisions as water partners by following the same action plan. With the NWT's limited human and financial resources, the coordinated approach to decision-making and strategic planning is key as it enhances the overall capacity by ensuring the best use of limited resources (NWT Department of Environment and Natural Resources, 2018, p. 25). Thus, the level of coordination in this area of governance represents an area of strength. While decisions about the NWT Water Stewardship Strategy are interrelated through one vision and action plan, these decisions remain formally independent as there are no legislative rules in use to make participants adhere. It is worth noting, however, that one of the goals of the strategy is to ensure "All those making water stewardship decisions work together to communicate and share information" (NWT Department of Environment and Natural Resources, 2010, p. 11). Despite the formal independence, the strategy prioritizes the coordination of participants and jointly making decisions.

5.5 Interactions

In their analytical framework for climate governance, Heinen and others suggest four styles of interaction: competition, conflict resolution, cooperation and other. For MLG arrangements, cooperative interactions, which rely on collaboration for conflict resolution are the norm (Heinen et al.,2021, p. 61). Following this logic, the interactions of decision-makers in the NWT Water Stewardship Strategy are defined by cooperation. Indeed, the first guiding principle of the strategy is work together. It is written that participants should strive to "build a cooperative environment that supports water managers and water partners in sharing information, building capacity and working together" (NWT Department of Environment and Natural Resources, 2018, p. 11). Hence, water partners in the NWT prioritize cooperation in the strategy's implementation. There are two important reasons beyond avoiding conflict this approach to water governance is beneficial. First,

the effective management of one specific resource at a time (e.g., water) in the governance of natural resources is unrealistic. Ecosystems are integrated and holistic and it is not possible for their parts to function independently (Miltenberger, 2014, p. 213). Therefore, cooperation between governing bodies is essential. Without it, development of a resource in the same ecosystem could negatively impact water. For example, as explained previously mining in the NWT demands a substantial quantity of water which could damage the ecosystem through which water circulates if discharge is not properly treated. Second, experiences of water governance around the globe "demonstrate overwhelmingly that parties are significantly better off when they pursue collaborative approaches" because collaboration leads to "better data bases for decision making, improved monitoring regimes, enhanced cooperation on mutually beneficial developments, better environmental quality, and reduced conflict" (Loë, 2016, p. 142). In sum, there are many tangible benefits of cooperative water governance. This collaborative approach is one of the strengths of the initiative. The most frequently named accomplishment of the NWT Water Stewardship Strategy during interviews of key participants was increased collaboration between water partners, (Harry Cummings and Associates & Shared Value Solutions, 2015, p. 7). Thus, interactions relating to the NWT Water Stewardship Strategy are characterized by cooperation, and this increase in collaborating regarding water governance is one of the most important features of the strategy. As previously noted, these interactions are defined by self-regulation through the form of rules enshrined in the NWT Water Stewardship Strategy document and the action plan. While general legislative rules surrounding water which attribute responsibility to orders of government exist in the context of Canadian water governance, there are none specifically tailored for the NWT Water Stewardship Strategy. The next part of the report will cover the implications from the

cooperative style of interaction as well as the implications derived from other points established in the analysis.

6.0 DISCUSSION

Before presenting the broader implications and relevance of the key findings to Indigenous water insecurity in Canada can be discussed, these findings must be summarized. First, we argue in this research that the holistic approach to water governance argued for in traditional knowledge focusing on watersheds and ecosystem health is superior to the issue-specific colonial approach for reducing water insecurity. This is because indigenous traditional approach treats water as the source of life rather than commodifying it and creating an artificial separation between elements. Governing holistically is especially important in the NWT Water Stewardship Strategy due to the territory's watersheds' interconnected nature and the role water plays in thawing the ground. Second, the primary decision-making centers for the strategy include the government of the NWT, and an Indigenous Steering Committee, which is comprised of representatives from Indigenous communities in the NWT is effective and mostly balanced. Traditional knowledge is valued in water governance, and Indigenous peoples fulfill a leading role in water stewardship. The legacy of colonialism still skews the power dynamic. Yet, the realm of influence traditional knowledge occupies in the composition and implementation of the NWT Water Stewardship Strategy provides a counterweight which helps diminish water insecurity. Third, participants in the strategy do not have to abide by strict rules. Action plans are developed to provide guidance but following them is not compulsory or enforced by laws. This collaborative and open approach to participation has worked with water governance. Out of 147 action items from the 2016-2020 period, only 18 or 12% were identified as sufficiently lacking to be deemed "not completed" (Hearns,2020, p.20). By favouring a flexible approach in implementation activities, the strategy achieved 88% of action

items which were established to resolve water insecurity. Fourth, decisions on water are interrelated through a shared vision and goals, and participants self-regulate. Co-design, co-management and co-decision making are integral pieces in the success of the NWT Water Stewardship Strategy. Fifth, cooperation and a joint commitment to water security define interactions between water partners. This collaborative spirit is recognizable throughout the NWT Water Stewardship Strategy and is one of the most important points for water security in a region with limited human and financial capacity. Beyond the five findings listed, three essential themes from the NWT Water Stewardship Strategy have important implications for reducing Indigenous water insecurity and merit discussion. These themes are traditional knowledge, community-based monitoring and adaptive and collaborative management.

6.1 Traditional Knowledge

From the initial development stages to the implementation activities of the NWT Water Stewardship, the use and recognition of traditional knowledge is omnipresent. Miltenberger (2014) describes how traditional knowledge was implemented:

> Aboriginal governments, organizations and users of traditional knowledge were involved in the development of the strategy, recognition of traditional knowledge is a guiding principle of the strategy, and the use and application of traditional knowledge in protecting northern waters is a key feature (p.210).

Thus, the usage of traditional knowledge is a defining feature of the strategy. Essential lessons for water governance more broadly can be drawn from how it was incorporated. Mainly, the usage of traditional knowledge was central to the strategy and reducing water insecurity in the region. It was not factored in at the end as an item on a checklist. Indigenous peoples were involved in developing and implementing the strategy as subject matter experts of traditional knowledge and

lead contributors. Since the Indigenous Steering Committee is one of the two primary decision making centers of the NWT Water Stewardship Strategy, the role of Indigenous people is institutionalized and impactful. This reality plays a pivotal role in the initiative's success because it engages Indigenous peoples, provides invaluable insight and helps decolonize water governance. To this effect, conflicts in water governance "cannot be resolved by greater consideration of traditional knowledge or Indigenous worldviews without addressing the locus of decision-making and attending to its depoliticizing tendencies" (Curran, 2019, p. 572). Furthermore, resource management that relies on environmental science and traditional knowledge uses a "critical tool" and benefits from more resilient ecosystem planning and effective management (Kokelj et al., 2011, p.258). Hence, in addition to the standard approaches based on Western scientific methods, it is advantageous to incorporate traditional knowledge into water governance meaningfully. In the same order of ideas, the meaningful incorporation of traditional knowledge into water governance contributes to its decolonization. Decolonizing political structures means departing from the Indian Act's imposed system of band council government, enabling Indigenous peoples to decide how to govern themselves and creating and/or renewing Indigenous governance systems (Ladner,2016, p. 80). Creating a water governance system that relies on Indigenous peoples and traditional knowledge to steward the waters of the territory wherein the extent of participation is up to partners with no penalties from abstaining creates a space of decolonized water governance. The NWT Water Stewardship Strategy works in this capacity because it is "built upon a genuine commitment to shared governance with the territory's Aboriginal peoples" which is demonstrated through a "commitment to engagement rather than simply consultation, the prominence given to Aboriginal traditional knowledge, and the simple fact that implementation of the strategy so clearly depends upon Aboriginal partners" (Loë, 2014, p.141). In other words, utilizing traditional knowledge is a

key factor for the strategy's success and the accompanying reduction in water insecurity. The manner in which traditional knowledge is used, however, is distinctive. For the lesson to be applicable to water governance in other jurisdictions, governments must first ensure similar conditions around the inclusion of Indigenous peoples and knowledge exist. This means traditional knowledge and Indigenous leadership must be central to water stewardship, with governments genuinely committed to implementing Indigenous knowledge and governance. Otherwise, the space created for water governance will not be sufficiently decolonized. Colonialism, which is the root cause of Indigenous peoples water insecurity will remain unaddressed. Effective collaboration, which proved to be one of the primary reasons the NWT Water Stewardship Strategy succeeded cannot be replicated in a colonial water stewardship program. Furthermore, Western science can easily overrule it without a full commitment to traditional knowledge in a colonial system. Even in a setting where traditional knowledge is viewed favourably like the NWT Water Stewardship Strategy, its valuable insight does not impact decision-making enough.

6.2 Indigenous Community Based Monitoring

Indigenous community-based monitoring, which is one of the pillars of the NWT Water Stewardship Strategy represents another useful practice for reducing water insecurity. This involves the participation of community members in water research and monitoring programs with established methodologies and protocols. In the case of the strategy, these protocols are built on traditional knowledge, openness, Indigenous leadership, and the needs of Indigenous communities (NWT Department of Environment and Natural Resources, 2010, p. 24). Embedding community-based monitoring programs into larger water stewardship initiatives as it has been done for the NWT Water Stewardship has many practical benefits. This is because efficacious environmental governance is based on understanding natural variability and a monitoring system which can detect

and report deviations from baseline conditions. Multidisciplinary, regionally relevant, and locally informed programs are likelier to succeed (Kokelj et al., 2011, pp. 269–270). Hence, Indigenous community-based monitoring in the NWT is fulfilling a vital function by collecting data. To this effect, information gathered on water quality and quantity in the NWT through initiatives like the NWT Water Stewardship Strategy is used to analyze water's past and present state. Establishing baseline data allows decision makers to monitor cumulative impacts which are changes to the environment over time. The resulting ability to predict potential and actual environmental changes can then be leveraged to steward water resources more effectively (NWT, Water Quantity, 2011, p. 2). In other words, by organizing the collection of baseline data for the waters of the Mackenzie River Basin at a community level the NWT Water Stewardship Strategy is helping to reduce water insecurity because it permits more informed decision-making.

The basin-wide initiative to obtain data on water is facilitated by the multilevel, open and collaborative approach espoused by the NWT Water Stewardship Strategy. In this case, by ensuring the coordination of local actors with central levels of government through the implementation of MLG, data on water can be accumulated by communities that are closest and easily shared with the government of the NWT. A well-developed website with open access to water databases, an annual Implementation Workshop, summary reports and email updates facilitate this transfer of information and ensure a satisfactory level of transparency (Hearns, 2020, p. 37). With the closeness and familiarity to these waters Indigenous communities possess, the reliability and consistency of the acquired data are also improved. On this subject, perspectives from interviews with First Nations, Inuit and Métis clarify that “[Indigenous] relationships with water exist at personal, cultural, and spiritual levels, and are often embodied in a deep-rooted connection to traditional and current homelands, and the waterways and waterbodies within them”

(Day et al., 2020, p. 6). Thus, Indigenous peoples deeply understand and know about water in their territory.

By training and funding Indigenous communities through NWT-wide community-based monitoring program which derived from the NWT Water Stewardship Strategy, the knowledge that originates from the intimate relationships with water can be applied more easily and efficiently. Due to the participation of communities, water sampling sites in the program nearly doubled passing from twenty-four in 2012 to forty-two in 2014 (Harry Cummings & Shared Value, 2015, p. 33). More recently, an evaluation of the strategy conducted in 2020 found 197 stations or sites (103 hydrometric stations and 94 water quality sites) being operated. While these sites are not solely maintained by Indigenous peoples, traditional knowledge and Indigenous leadership continues to inform water monitoring in the NWT (Hearns, 2020, p. 27). Taken together, the work of Indigenous communities is actively contributing to reducing water insecurity by establishing baseline data and sharing it with decision-makers through accessible platforms such as the NWT Water Stewardship Strategy website. This work is helping to overcome one of the most significant obstacles for water governance in the Mackenzie River Basin by producing a body of knowledge in an area that is data poor (Morris & Loë, 2016, p. 9). Therefore, collecting data through Indigenous-led community-based monitoring is essential for the NWT Water Stewardship Strategy and other instances of water governance. Increasing the availability of baseline data on water enables better decision-making and partnering with Indigenous communities to do so brings a high level of expertise. This is especially true with the NWT as the location of Indigenous communities in the territory creates a network of monitoring nodes which are “strategically positioned to encompass critical components of the Mackenzie River basin drainage system” (Miltenberger, 2014, p. 226). In these partnerships, however, incorporating local and traditional knowledge into

water monitoring programs alongside Western methodologies should be a prerequisite to participation. Investment of sufficient resources for these types of initiatives should also be a prerequisite to participation. Without adequate financing, support and power, placing additional responsibilities on small communities can maintain or even worsen water disparities (Hanrahan, Jnr 2017, p. 10). Including local actors in water governance without supporting them is a recipe for failure.

Outside the confines of the NWT Water Stewardship Strategy, there is additional evidence showing that Indigenous-led-monitoring programs are effective and valuable. For example, the Arctic Borderlands Ecological Knowledge Co-op has documented key information on the effects of resource development, climate change and biodiversity conservation over many years (Parlee et al.,2021, p. 18). Other authors argue that Indigenous community-based monitoring is valuable as a form of Indigenous governance. This is because it is viewed as "a means to assert sovereignty, through the practice of stewardship, and by gathering data that inform internal and external planning and decision-making, " allowing communities to build local governance capacity (Wilson et al.,2018, p. 297). All in all, there are practical and political advantages for Indigenous peoples to participate in community-based monitoring which transcend the case being studied if the correct conditions surrounding involvement in water governance are met. The NWT Water Stewardship Strategy, which empowers Indigenous peoples, prioritizes traditional knowledge, builds trust and focuses on a collaborative, multilevel approach sets a good example for the inclusion of Indigenous peoples.

6.3 Adaptive and Collaborative Management

Lastly, the adaptive and collaborative management theme represents a key lesson in reducing water insecurity that can be learned from the NWT Water Stewardship Strategy. To this effect, implementing a "coordinated and adaptive approach" to water governance can "help to address uncertainties associated with climate change … and foster greater inclusion in environmental monitoring and decision-making" (Morris & Loë, 2016, p. 26). Since climate change is a source of concern for the environment and water partners in the area, using an approach that can adapt to changing conditions is key. Residents of the NWT are particularly worried about differences in the hydrological cycle caused by climate change, including changes in permafrost thaw, water flow, ice conditions and drinking water (NWT Department of Environment and Natural Resources, 2021, p. 7). The significant changes to northern waters thus demonstrate the importance of adaptive water governance. The effects of climate change are not limited to the NWT. As a result, a rigid, inflexible management style is incompatible with water governance because of the environment in constant flux. Adaptive management, which refers to the "process of continually incorporating newly gained knowledge or information into decision-making" is a much better fit for these conditions (NWT Department of Environment and Natural Resources, 2018, p. 21). Decisions about water governance in the NWT are made based on the most recent information and can adapt to present circumstances.

In addition, decision-makers in the NWT Water Stewardship Strategy use the best available information, which means traditional, local and Western scientific knowledge of the entire watershed is considered. Importantly, the strategy prioritizes information sharing and the development of information databases in support of this endeavour (NWT Department of Environment and Natural Resources, 2010, p. 17). By relying on the most up-to-date and accurate

data obtainable and practising adaptive management as is done in the NWT Water Stewardship Strategy the odds of making the best possible water decision increase. Over time, a reduction of water insecurity will occur because the "presence of an effective and accountable monitoring system and information sharing at a local level can result in a successful large-scale governance system" and implementing adaptive management based on the best available information means water governance is accountable to collected data (Tyson, 2017, p. 6). With the high level of information requirements, the themes of traditional knowledge and Indigenous community monitoring previously discussed are important aspects of successful adaptive management in water governance. Traditional knowledge is a key source of information on water which promotes the inclusion of Indigenous peoples in water governance while helping to decolonize it. Indigenous community-based monitoring creates the monitoring systems at a local level that are needed for successful large-scale governance systems like the one that the NWT Water Stewardship Strategy guides. Adaptive management is a key cog in the strategy. It builds off the contributions of traditional knowledge and Indigenous community-based monitoring to ensure informed decisions in the NWT. Outside the NWT, combining adaptive governance with an MLG approach could help reduce water insecurity if the appropriate systems are constructed to complement the efforts.

Maintaining the necessary networks and streams of data to inform decisions, however, is a considerable challenge. Several water partners interviewed as part of an evaluation of the NWT Water Stewardship shared concerns regarding future resources for the community-based monitoring that is foundational to the strategy. Awareness of the involvement of various partners in water monitoring and a belief in the strength of collaboration will help mitigate some of these concerns (Hearns, 2020, pp. 9–10). This reality explains why collaboration is a defining feature of the NWT Water Stewardship Strategy and that collaborative management occupies such an

important place in the initiative. Given the extent of the water resources in the NWT and limited capacity, increased collaboration and cooperation among water partners is the only way to monitor the watersheds comprehensively and generate sufficient data for effective adaptive management (NWT Department of Environment and Natural Resources, 2018, p. 39). Collaboration allows water partners to make the most out of limited resources, provides an avenue to share new information, adapt water governance and make the best possible decisions. To this effect, it is a "fact that in basins around the world where the challenges are even more profound [than the challenges faced in the Mackenzie River Basin] people committed to cooperation in shared basins have found ways to govern them successfully" (Löe, 2014, p. 152). Therefore, collaborative water management is an essential component of good water stewardship that reduces water insecurity. In Canada, a lack of collaboration and fragmentation in water governance has contributed to human and financial capacity issues. In this country, fragmented governance exists because responsibility for water is attributed to multiple actors without sufficient coordination or clarity regarding final decisions on water, causing problems with integration and data access (Hanrahan, Jnr 2017, p. 2). Consequently, Canada is unable to manage water effectively. As explained throughout this research, colonial governance, limited resources, poor data, climate change, a fragmentary view of environmental governance, and water are significant obstacles to reducingwater insecurity. To have a chance of overcoming these obstacles, collaboration in water governance is a must. As is seen in the NWT, collaboration must also include Indigenous peoples. In fact, the experience in the Mackenzie River Basin shows that "governments should go beyond incorporating Aboriginal actors and knowledge into existing policy regimes, and instead encourage genuine collaboration and Aboriginal leadership" because it can "create invaluable opportunities for more integrated approaches to transboundary water governance" (Black, 2016, p. 522). Overall, the NWT Water

Stewardship Strategy has demonstrated the importance of Indigenous leadership in water governance, the value of traditional knowledge, and the positive impact an approach based on MLG can have.

Furthermore, decision-makers have set an example by committing to relying on the most accurate data whether it has been sourced from traditional knowledge or Western science. While the results of this case study show work remains to be done in practice for equal consideration of traditional and western science, the principles espoused in the strategy are sound. To reduce water insecurity for Indigenous peoples, adopting an approach combining MLG, the concept of adaptive management and best available information is promising. These notions complete each other. Actors involved in water governance can collectively adapt, share up-to-date information from the best available data and act more easily in a unified fashion.

7.0 CONCLUSION

In conclusion, the Northwest Territories Water Stewardship Strategy presented in this case study demonstrates that a well-designed water strategy founded on MLG and the prioritization of Indigenous perspectives in water governance can help reduce the level water insecurity Indigenous communities experience. This is because the "[Indigenous] drinking water crisis is a direct result of Canada's fragmented and colonial water governance system, where federal, provincial and municipal governments claim different scales and authority over water" (Wilson et al., 2021, p. 788). Hence, while a water strategy that embodies the principles of MLG and fully involves Indigenous people does nothing to remove the underlying colonial structures, it does circumvent them by creating a decolonized governance arrangement in practice. Therefore, the NWT Water Stewardship Strategy works because it helps decolonizes water governance. The development

process values the input of Indigenous traditional knowledge, the framework prioritizes the true representation of Indigenous peoples with their role as central decision makers (through the Indigenous Steering Committee), and the initiative empowers Indigenous communities through the funding of community-based monitoring. From inception to implementation, the strategy provides a model for future cooperation on matters related to water between the government of Canada and Indigenous peoples and the comprehensive MLG arrangement, robust collaboration, and holistic approach offer key lessons on water governance to learn from. As a testament to the success of these measures, the NWT Water Stewardship Strategy continues to exist over ten years after the idea was conceived with no signs of slowing. To this effect, the most recent evaluation also graded the strategy as highly efficient, noting that the benefits of being involved far exceeded the resources and effort invested by participants (Hearns, 2020, p. 33).

Yet, no project is perfect. One could argue that the ambiguous legal situation described in the dependency segment of the analytical climate governance framework does not offer the appropriate level of authority to ensure responsibilities are carried out. Furthermore, part of the NWT Water Stewardship Strategy's success could be attributed to the region's unique demography and historical context, meaning the lessons may not be fully transferable to other Canadian jurisdictions. The equal number of Indigenous and non-Indigenous people, the number of negotiated self-governing Indigenous communities in the region, the respect for Indigenous peoples and traditional knowledge are all elements not present in other parts of Canada due to colonialism. Unique partnerships between agencies, the territorial government and federal departments also exist in the NWT. For example, Environment and Climate Change Canada operates a Hydrometric Monitoring Network in collaboration with the NWT's territorial government to increase water monitoring efficiency (NWT Department of Environment and

Natural Resources, 2018, p. 21). Indeed, the "promises (and pitfalls) of [Indigenous MLG] depend on the circumstances and the nature of the arrangements, who is involved, and how." (Papillon, 2013, p. 6). Thus, the potential of MLG to create decolonized Indigenous governance is dependent on contextual factors, and the case study selected contains unusually favourable circumstances when compared to other Canadian examples of water governance.

In a similar order of ideas, weaknesses exist in the current paper. The research conducted did not yield sufficient documentation on issues encountered during the development and implementation of *the Northwest Territories Water Stewardship Strategy.* This information could have been useful in developing a more balanced set of recommendations for future government initiatives. Given the tense nature ofCrown-Indigenous relations, however, it is likely that involved partners wanted to limit the publicly available information on the strategy that presented a negative outlook as to not jeopardize its success. To improve the work done in the context of this project, it would be necessary to conduct interviews with stakeholders and gather qualitative data on the problems with the Northwest Territories Water Stewardship Strategy and how these problems were dealt with. Despite the inaccessibility of information related to the weaknesses of the strategy, the inclusion and valorization of Indigenous perspectives from the beginning of the planning stages to its operation is an example of Indigenous MLG. Canada has a fiduciary duty to Indigenous peoples, and the collaborative approach which elevated them to key actors in the Northwest Territories Water Stewardship Strategy is a best practice. Still, there remains much work to be done to achieve reconciliation and water security. Contrary to the history of Canada's relationship with Indigenous peoples, the government must make the choice to engage willingly with Indigenous peoples and collaborate with them on environmental issues. Since much of Canada's territory remains unceded land, it would be wise to encourage the development of collaborative frameworks explored in the

case study (Alcantra et al., 2020, pp. 155–166). Incorporating traditional knowledge and Indigenous perspectives in Canadian water governance can potentially improve the Indigenous water crisis and reduce water insecurity. The insertion of Indigenous voices to discussions involving their traditional territory offers the opportunity to fulfill pre-existing obligations, provide useful input on a complicated topic and ensure representation. The successful case of water stewardship in the Northwest Territories presented in the previous section demonstrates the value behind the traditional knowledge offered by Indigenous peoples and the impact multilevel governance can have. Unlocking the traditional knowledge for modern and widespread use, howevever, requires a wholesale change in strategic approach. In practice, the best way to facilitate this new arrangement would be to prioritize the implementation of a comprehensive multilevel governance framework which places Indigenous peoples as primary actors. Rather than having various levels of government working in silos to complete their tasks related to aspects of environmental policy such as water governance, Canada could take the initiative and design a strategy which promotes collaboration between governments on a nation-to-nation level. This is especially useful in the context of interconnected, multidimensional policy areas like water security. Without the coordination implied in a well-planned multi-level approach, there cannot be effective collaboration. Thus, Canada could potentially improve its governance of the environment and Indigenous peoples by designing a sound strategy that prioritizes multilevel governance. Perhaps the utility of Indigenous traditional knowledge in governance should be explored in other policy areas. Results from the NWT Water Stewardship Strategy show it was useful for the health of waters in the NWT.

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