COLLABORATIVE WATER GOVERNANCE: FOSTERING PARTICIPATION, RELATIONSHIPS, AND RECONCILIATION IN MISTAWASIS NÊHIYAWAK

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By

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ABSTRACT

In Canada, water governance is confronted with colonial legacies that historically have marginalized and silenced Indigenous water worldviews, knowledge and needs. Alternative water governance frameworks are needed and demanded by Indigenous Peoples to overcome the complex water issues they face. In this dissertation the meaning of water and water governance from Mistawasis Nêhiyawak First Nation (MNFN) water ontologies and epistemologies is explored and the contributions to collaborative water governance approaches in the North Saskatchewan River Watershed (NSRW), Saskatchewan and Canada are discussed. The importance of balancing power relationships in water decision-making and participation by including collaborative approaches as the theoretical and practical framework for water governance is considered. Collaborative water governance as a constructive process is proposed, where hybrid pathways and strong partnerships between rights holders and stakeholders are co-built, and from this perspective, Indigenous water ontologies, epistemologies and self-determination are legitimized in collaborative water governance arrangements.

This dissertation documents the collaborative water governance experience lived by MNFN while overcoming water threats affecting their Nation. The Honour the Water Governance Framework co-built with MNFN as a model founded in MNFN identity, knowledge, and self-determination is presented. This framework highlights shared dialogue and complementarity as key elements for holistic and sustainable water governance approaches. Collaborative water governance arrangements built on trustful relationships and aware of Indigenous Knowledge and self-determination may contribute to meaningful processes of reconciliation needed in Canada. Partnerships built between MNFN and water stakeholders in the NSRW opened pathways for honouring water while healing broken relationships and contributing to transformative reconciliation in the practice. The theoretical and methodological approaches used in this dissertation contribute to practices of decolonization in water governance towards building Nation-to-Nation relationships while developing more sustainable water governance approaches.

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DEDICATION

To my Creator who gave the opportunity to experience life, and puts me in the right place, with the right people and at the right moment.

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LIST OF ABBREVIATIONS

CBPR	Community-based Participatory Research
FSIN	Federation of Sovereign Indigenous Nations
HWP	Honour the Water Project
IRS	Indigenous Residential Schools
IRSSA	Indian Residential Schools Settlement Agreement
LTDWAs	Long-term drinking water advisories
MNFN	Mistawasis Nêhiyawak
NSRBC	North Saskatchewan River Basin Council
NSRW	North Saskatchewan River Watershed
SENS	School of Environment and Sustainability
SRC	Saskatchewan Research Council
TK	Traditional Knowledge
TRC	Truth and Reconciliation Commission of Canada
USASK	University of Saskatchewan
WSA	Water Security Agency

CHAPTER 1 - INTRODUCTION

1.1 Research Context

From global to local scales, water crises and their impact on human life is of great concern, affecting millions of human beings, especially those discriminated against and marginalized (Doorn, 2013). According to the United Nations Word Water Development Report 2020, water alterations are threatening the availability of water to meet human needs, including food security, health, energy production, and socio-economic development (UNESCO, 2020). These water crises are complex and demand new and different approaches to how water governance should be understood, built, and practiced. To provide more holistic and more sustainable answers, scholars have called for integrated and systemic water governance approaches linked to broader societal goals, including broad and legitimate participation, inclusiveness, accountability, and transparency (De Loë & Patterson, 2017; Jiménez et al., 2020; Schulz, Martin-Ortega, Glenk, & Ioris, 2017).

Definitions of water governance vary. In this dissertation water governance is defined as "the processes through which institutions, actors, and societies broadly decide on how water is to be used, by whom, and under what circumstances" (Wilson, Harris, Nelson, & Shah, 2019, p. 1). Water governance problems are complex with diverse causes, scales and multiple stakeholders, perspectives, and values are involved (Fallon, Lankford, & Weston, 2021). In addition, issues of power asymmetries and social inequality are usually present, threatening the sustainability of water for many groups, particularly the marginalized (Arsenault, Diver, McGregor[1], Witham, & Bourassa, 2018; Castro, 2007; Jiménez et al., 2020). To confront water complexities and power asymmetries, researchers argue that hierarchic state-approaches are unlikely to work and that water governance problems cannot be solved by only one actor (Di Vaio, Trujillo, D'Amore, & Palladino, 2021; Jiménez et al., 2020). Instead, to achieve sustainable and efficient water governance systems, researchers have called for multilevel, collaborative, and participatory approaches (Di Vaio et al., 2021), distributed processes, and the sharing of roles and responsibilities (Bradford, Ovsenek, &

[1] (Anishinaabe)

Bharadwaj, 2017; Franks & Cleaver, 2007; Gupta & Pahl-Wostl, 2012; Simms & De Loë, 2010).

In Canada, many have questioned whether safe water, for drinking and other purposes, can be guaranteed for all and whether water in this country is sustainable. Water inequality is not uncommon, especially in Indigenous territories. In fact, unsafe drinking water is a 'normal' water condition for many Indigenous communities that have been living under water advisories for decades. In 2021, the Government of Canada reported that 43 long-term drinking water advisories (LTDWAs) were in effect (Indigenous Services Canada, 2021). However, water problems and challenges in Canada go beyond numbers of LTDWAs and Indigenous Peoples affected. Water problems entail issues of complex colonial structures of power asymmetries in the governance of water. According to Curran (2019), colonialism has set water governance on a state-prescribed environmental and natural resource decision-making process. From this position, the state—along with its political administration (the government)—controls water and Indigenous lands and Peoples by establishing the means and boundaries for the interactions between Indigenous Peoples and government. Under these parameters, power asymmetries rule decision-making, leaving Indigenous Peoples' voices and power out of the water governance system and the decisions taken (Von der Porten & De Loë, 2013b). The impacts of colonial water power asymmetries are especially evident for Indigenous women, whose voices and knowledge have been diminished, reproducing gendered inequalities in water governance (Anderson, Clow, & Haworth-Brockman, 2013; Chiblow, 2020).

Indigenous Peoples[2] in Canada are demanding de-colonized approaches in the governance of water as a strategy to heal past injustices and move forward towards water sustainability (Chiblow[3], 2020; Latchmore, Schuster-Wallace, Longboat[4],

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[2] In Canada, the term Indigenous Peoples is used to refer the original inhabitants of what is now Canada including First Nations (original peoples often occupying territories south of the Arctic) (Parrott, 2020), Métis (Indigenous people who lived in the northern plains of what is now southern Manitoba in the late eighteenth and early nineteenth centuries) (Andersen, 2017) , and Inuit (original inhabitants in the northern regions of Canada) (Parrott, 2020).

[3] (Anishinaabe)

[4] (Haudenosaunee)

Dickson-Anderson, & Majury, 2018; Wilson et al., 2019). Collaborative water governance is proposed as a suitable approach to overcome water sustainability problems for Indigenous Peoples (Finn & Jackson, 2011; Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014a). Collaborative water governance comes from a political perspective that points to formal arrangements among state and non-state stakeholders, who voluntarily come to participate in public decision-making (Orr, Adamowski, Medema, & Milot, 2015). Representation, inclusiveness, fairness, equity (in social categories like gender, race/ethnicity, class), enduring relationships, and face-to-face interactions are essential in collaborative efforts as they contribute to consensus achievement (Brisbois & De Loë, 2016b; Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014b).

Two focus points are pivotal for successful collaborative water governance processes in Indigenous territories: The inclusion of Indigenous Knowledge into decision-making and the recognition of Indigenous self-determination (Bradford et al., 2017; De Loë & Patterson, 2017; Montgomery, Xu, Bjornlund, & Edwards, 2015; Von der Porten & De Loë, 2013a; Von der Porten, De Loë, & McGregor, 2016). Indigenous Knowledge comes from the interactions between people, living, and non-living things (Bradford et al., 2017; Muir, Rose, & Sullivan, 2010) and symbolizes Indigenous Peoples way of life (Muir et al., 2010; Von der Porten et al., 2016). From the perspective of Indigenous Knowledge, water represents a living spiritual entity (Maclean, 2015; Von der Porten et al., 2016; Wilson, 2014) that provides life and healing to people (Baird & Plummer, 2013; Basdeo & Bharadwaj, 2013). Water and people are interconnected by kinship (Muir et al., 2010). Women are specially connected to water because they are the water caregivers and the water knowledge holders and are responsible for water labour-related practices (Anderson & Prairie Women's Health Centre of Excellence, 2010). Principles of interconnection, relationality, and reciprocity rule the relationship between human life and water; therefore, the well-being of human life depends directly on the well-being of water and vice versa (Muir et al., 2010).

Self-determination expresses the Indigenous re-assertion of governance providing the political framework for Indigenous Peoples to drive local decisions, beyond mere (formal or informal) consultations (Von der Porten & De Loë, 2013a, 2013b). These decisions must align with Indigenous Peoples' customs, identity,

worldviews, and knowledge in respectful terms (Muir et al., 2010; Von der Porten & De Loë, 2013b). By recognizing Indigenous self-determination, Indigenous Peoples are not stakeholders in the water governance system; rather, they are rights holders interacting in decision-making from a Nation-to-Nation standpoint (Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014b; Von Der Porten, De Loë, & Plummer, 2015). For Indigenous Peoples, the inclusion of their knowledges in water decision-making, as well as the recognition of their position as water rights holders, represents a constructive de-colonial venue to overcome issues of power asymmetries in collaborative water governance (Von der Porten & De Loë, 2013a, 2013b). Inclusion and recognition also make possible—and open tangible room for—transformative processes of reconciliation between Indigenous and non-Indigenous people (Von Der Porten & De Loë, 2014b; Von Der Porten et al., 2015). Using a case study in Saskatchewan, Canada, this thesis presents a collaborative water governance experience where the meaning of water governance was co-built and acknowledges Indigenous Knowledge and self-determination.

1.2 Purpose and Objectives

The main goal of this thesis was to understand what water governance means, involves, and implies for Mistawasis Nêhiyawak (MNFN) (a First Nation in Saskatchewan), according to their worldview, Traditional Knowledge (TK), and socio-cultural connections with water. A primary outcome was to co-create a holistic water governance framework that is built on MNFN's interests and needs, encompasses decolonization practices, and includes pathways for co-building new relationships between Indigenous and non-Indigenous partners of MNFN. The objectives proposed intended to provide insights that could contribute to the water governance debate towards better governance practices in Canada. Specific objectives included:

1. Identify the conceptualization(s) of water governance defined in the academic and non-academic literature in the Global North[5] (including Canada), and

[5] For this dissertation the Global North countries referred are Canada, United States, New Zealand, and Australia.

describe the role of gender, as well as the social, political, and cultural challenges for Indigenous populations.

2. Conceptualize the meaning of water and water governance from the worldview of MNFN.

3. Co-create a holistic water governance framework with MNFN that may enhance participation, empowerment, and opportunities for decision-making for Indigenous Peoples.

4. Document the attributes collaborative water governance requires to contribute to meaningful reconciliation processes in Canada.

1.3 Theoretical Framework in Brief

The bodies of literature explored in this thesis fall within five primary areas: Water Governance, Collaborative Water Governance, Water Governance in Canada, Indigenous Peoples and Water Governance in Canada, and Reconciliation. A brief overview of each component is presented below.

1.3.1 Water Governance

Over the last decades, water governance has evolved from hierarchic state-centric governance approaches towards new models based on society-centric, multilevel, and collaborative approaches (Castro, 2007; Jiménez et al., 2020). Such evolution responds to the complexity of the water crisis confronting humans and the limited solutions provided by normative perspectives (De Loë & Patterson, 2017). It has been written that water problems are crises of water governance (Baird et al., 2016; Jiménez et al., 2020). Resolving complex water crises demands multilevel approaches where the state, the private sector, and civil society[6] have access to shared responsibility and power over decision-making (Di Vaio et al., 2021).

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[6] Civil society for this dissertation is understood from pluralist and communitarian traditions based on voluntary action, reciprocity, and solidarity—placing civil society in a neutral or in an area between the state and the market (Castro, 2007)

The definition of water governance is neither simple nor unique. Diverse and changing perspectives, paradigms, and theories all influence its meaning (Gupta & Pahl-Wostl, 2012). For example, from an instrumental perspective, water governance is seen as the means to achieve specific outcomes or objectives (Castro, 2007). From this approach, "who gets what water, when and how, and who has the right to water and related services and their benefits" are the main foci (Jiménez et al., 2020, p. 21). Other approaches define water governance more as a decision-making process that involves diverse institutions and multiple actors (Jiménez et al., 2020). For this dissertation, water governance is defined as "the ways in which societies organize themselves to make decisions and take action regarding water … involv[ing] numerous public and private actors, occur[ring] at multiple scales and levels, and tak[ing] place through diverse mechanisms" (De Loë & Patterson, 2017, p. 77). In addition, water governance should be connected to societal goals, which can differ from context to context (Castro, 2007).

Critics of water governance often highlight failures in social justice and environmental sustainability (Perreault, 2014; Schulz et al., 2017). Considerations include power asymmetries exercised through past and current practices of exclusion and marginalization in participation and inclusion in water governance (Doorn, 2013; Perreault, 2014). There are various hydrosocial meanings that shape different socio-cultural practices, symbolism, and relationships between water and people and these need to be incorporated into the foundations of water governance (Perreault, 2014).

1.3.2 Collaborative Water Governance

Collaborative water governance comes from a political perspective that points to formal arrangements among state and non-state stakeholders, who voluntarily come together to participate in public decision-making (Orr et al., 2015). The rationale for a collaborative approach is the need to achieve consensus by incorporating different types of knowledge and through shared processes of decision-making among actors involved in and affected by water conflicts (Brisbois & De Loë, 2016b; Von der Porten et al., 2016; Von Der Porten et al., 2015). Specific guiding principles like representation, inclusiveness, fairness, equity, legitimacy, endured relationships, and face-to-face interactions all contribute to achieving consensus (Brisbois & De Loë, 2016a; Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014b). Collaborative water

governance contributes to effective conflict resolution, improves stakeholder relationships, better responds to complex problems, and supports interconnected networks (Harrington, 2017; Von der Porten & De Loë, 2013a). Although the definitions of collaborative water governance can vary, and the characteristics of different cases are particular, the core aspects remain: inclusive and representative processes of decision-making and face-to-face interactions aimed at achieving consensus (Harrington, 2017).

1.3.3 Water Governance in Canada

Canadian water governance works through a highly decentralized, federated, and multi-jurisdictional system (Bakker & Cook, 2011; Bradford et al., 2017). Constitutionally, fisheries, navigation, federal lands (including Indigenous lands), and international waters are federal obligations. Provinces and territories are responsible for water resources and supply within their boundaries, though these functions are sometimes delegated to municipal jurisdictions (Bradford et al., 2017; Hill, Furlong, Bakker, & Cohen, 2008). Although the decentralization of power in Canada seems reasonable in the second largest nation, by area, in the world, the fragmentation on a scalar, territorial, and jurisdictional level has resulted in different and complex governance gaps and challenges (Bakker & Cook, 2011). Competition, overlap in functions, and divisions of powers are cited among the most critical problems associated with this decentralization. (Bradford et al., 2017). When it comes to water, a fragile institutional decentralized system reproduces inefficient and ineffective coordination and agreements, resulting in poor water governance outcomes including unresolved logistic issues, conflicts among ministries, duplicated efforts, and conflicts in accessing and sharing information (Bakker & Cook, 2011; Bradford et al., 2017; Hurlbert & Diaz, 2013).

Fragmentation is present at different levels—between the federal and provincial governments (vertical fragmentation), and across and within provinces and territories (horizontal fragmentation) (Hill et al., 2008). According to Bakker and Cook (2011), the Canadian water governance systems deals with difficulties and conflicts between harmonisation and subsidiarity. Subsidiarity (or the delegation of decision-making and policy execution to the lowest appropriate scale) characterizes water governance in provinces and territories that have different approaches to drinking water, watershed management, and water property rights (Hill et al., 2008). Harmonization (or the

normalization of laws and norms) is needed, especially to prioritize actions and information that can improve water policies related to drinking water systems and source water protection (Hill et al., 2008).

An additional point relevant to this dissertation is that the federal government has a responsibility to act in a fiduciary capacity with respect to Indigenous Peoples' lives and lands (Bakker & Cook, 2011; Simms & De Loë, 2010). Although provincial governments are accountable for water regulations on Indigenous territories, these regulations do not apply because the accountability for the delivery of safe drinking water relies on three different federal agencies (Aboriginal Affairs and Northern Development Canada, Health Canada, and Environment Canada) (Bradford, Bharadwaj, Okpalauwaekwe, & Waldner, 2016; White, Murphy, & Spence, 2012). Research describes the poor interaction and coordination among these different agencies (see Bakker & Cook, 2011; Hill et al., 2008). As a result, there are accountability and budgetary gaps and problems (White et al., 2012), which produce inefficiencies in the management, planning, and monitoring of water in Indigenous territories (Bakker & Cook, 2011).

1.3.4 Indigenous People and Water Governance in Canada

The history of Indigenous Peoples in Canada is marked by colonization, which impacted Indigenous Peoples' livelihoods on social, political, environmental, economic, cultural, and spiritual levels. Once Indigenous Peoples and lands were colonized, and western power was perpetuated, new power frameworks and structures were set. Power asymmetries became the foundation of relationships between Indigenous and non-Indigenous people, with deep and incalculable losses for Indigenous Peoples' identity, knowledge, culture, socio-environmental relationships, and spiritual values (Basdeo & Bharadwaj, 2013). Issues of inequity, social injustice, loss of sovereignty, and environmental discrimination challenge Canada—its government and society—to (re)examine their colonial foundations and structures in the governance system, including the governance system for water.

Water crises in Indigenous territories in Canada reveal a history of marginalization and discriminatory processes. Multiple government and non-government reports reveal the untenable situation in which Indigenous Peoples live and access water. For many Indigenous reserves, drinking water advisories have been the

norm for years, suggesting that a systemic crisis is threatening Indigenous Peoples' rights to secure water (Human Rights Watch, 2016). Research has corroborated the water inequalities Indigenous Peoples confront. As Morrison, Bradford, and Bharadwaj (2015, p. 352) argue, "Despite numerous government assessments and monetary investments, people on First Nations reserves are 90 times more likely to have no access to running water than other Canadians." Poor policy commitments to source water contamination combine with inequitable resource distribution to create socio-political and governance problems (Arsenault et al., 2018). Water governance for Indigenous Peoples in Canada confronts not only the complex and fragmented institutional system described in the last section but also perpetuates colonial legacies of discrimination and marginalization (Basdeo & Bharadwaj, 2013; Von Der Porten & De Loë, 2014b). Mainstream water governance frameworks generally underrepresent or even ignore Indigenous values, strategies, institutions, and knowledge in protecting and using water (Wilson, 2014).

Collaborative water governance has been proposed as one suitable framework to examine and resolve water governance issues for Indigenous Peoples in Canada. Collaborative water governance, however, must be seen as a constructive and hybrid process to achieve consensual decisions by building strong partnerships among western and Indigenous managers, planners, and knowledge systems (Finn & Jackson, 2011). As a hybrid process, Indigenous governance principles need to be part of governance foundations (Von der Porten et al., 2016; Wilson, 2014). Holistic approaches, interconnectedness (with life, the land and the community), and the strength of 'power with' are guiding principles for governance based on Indigenous ontologies and epistemologies (Bradford et al., 2017). Indigenous governance, where Indigenous Knowledge and self-determination are acknowledged and legitimized, may end the ongoing marginalization of Indigenous Peoples (Von der Porten & De Loë, 2013b).

1.3.5 Reconciliation in Canada

In Canada, reconciliation is an ongoing national project, which aims to reaffirm the Nation-to-Nation relationship between Indigenous Peoples and Canada (Ladner, 2018).

After the cultural genocide[7] committed on Indigenous Peoples' lives and lands, the Canadian government, through the Truth and Reconciliation Commission, defined reconciliation as the act of "renew[ing] or establish[ing] Treaty relationships based on principles of mutual recognition, mutual respect, and shared responsibility for maintaining those relationships into the future" (The Truth and Reconciliation Comission of Canada, 2012, p. 119). The re-establishment of these relationships implies the acknowledgement of the colonial history that affected Indigenous Peoples for generations, overcoming past and present conflicts, and re-establishing respectful relationships (The Truth and Reconciliation Commission of Canada, 2015). As Ladner (2018) indicates, reconciliation is a social, legal, historic, and language project that allows all peoples and all nations to coexist.

Objections to reconciliation 'as a project' have been raised by different critics (Wyile, 2017). Reconciliation 'as a project' is seen by some as limiting acknowledgements of colonization to 'past issues' while current unequal power relationships affecting Indigenous Peoples remain invisible (Daigle[8], 2019; Freeman, 2014; Nagy, 2017). For example, the water disparities that Indigenous Peoples confront in Canada are evidence of colonial trends of marginalization. As Black and McBean (2017) argue, "There is a major disparity between the quality and quantity of water that most Canadians are able to access when compared to the state of water quality and quantity available to many First Nations communities" (p. 248).

Transformative reconciliation is proposed as a process where unjust relationships between Indigenous and non-Indigenous People are reshaped and Indigenous Peoples' self-determination, worldviews, and knowledge are acknowledged (Borrows[9] & Tully, 2018). From this perspective, reconciliation goes beyond discourses of past injustices towards practical and significant processes of trustful and reciprocal relationships. Restoring relationships from a transformative approach is not limited to human relationships only. It also includes reconciling 'all our relations,' including

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[7] Cultural genocide or "the destruction of [the] structures and practices that allow the group to continue as a group" (The Truth and Reconciliation Commission of Canada, 2015, p. 1).

[8] (Cree)

[9] (Anishinaabe/Ojibway)

relationships with nature (Ladner, 2018; Starzyk, Fontaine[10], Strand, & Neufeld, 2021; Tully, 2020). Reconciling with nature involves acknowledging Indigenous worldviews, knowledge, and laws that generally respond to the natural environment (Borrows, 2018; Freeman, 2014). From this perspective, reconciliation entails holistic processes of honouring different ways of living (relationships) and responsibilities among people and nature (Day et al., 2020; Tully, 2020).

1.4 Organization of the Dissertation

Following the guidelines from the College of Graduate Studies and Postdoctoral Studies, this research adopts a manuscript style. Each chapter foregrounds collaborative and local approaches in water governance as the space for dismantling power inequalities and colonial legacies affecting Indigenous Peoples in Canada. This thesis consists of six chapters. Chapter 1 outlines the key characteristics of the thesis, presenting the general intent of this study, the research problem context, the theoretical framework, and the structure of the thesis. Chapter 2 provides an overview of the methodology and research framework of this dissertation, including a description of the data collection methods and analysis process, as well as the researcher positionality, ethical considerations, and trustworthiness. Chapters 3, 4, and 5 are three stand-alone manuscripts that correspond respectively to the research objectives presented above.

Chapter 3 presents the manuscript "The Role of Gender in Water Governance in the Global North: A Scoping Review." This manuscript uses a scoping review to examine the literature and identify gaps in the literature on water governance and gender in the Global North (including Canada). The findings indicate that access to safe drinking water is unequal, especially for vulnerable communities such as Indigenous Peoples. Found in the literature were calls for intersectional and interdisciplinary water governance approaches to better understand the complexity of gender inequalities in water governance. Indigenous women's voices are demanding spaces for active participation in water decision-making, opening opportunities for more research on inclusive water governance approaches and frameworks that guide different processes of inclusion and equity.

[10] (Anishinaabe)

Chapter 4 presents the manuscript “Honouring Water: The Mistawasis Nêhiyawak Water Governance Framework.” This manuscript uses a collaborative water governance approach to examine how collaboration offers spaces for equitable water actions and arrangements. Using this approach, an alternative collaborative water governance framework is proposed that represents the MNFN worldviews, culture, and values; illustrates the importance of shared dialogue in water governance; and demonstrates that improvement is needed in specific actions in the governance of water at MNFN. Proposed as an alternative water governance model to the current Canadian system, the framework could lead to improved responses to MNFN water concerns and needs and could perhaps eventually be applied to other Indigenous communities in Canada.

Chapter 5 presents the manuscript “Restoring Relations: Honouring Water in the North Saskatchewan River Watershed (NSRW) Saskatchewan with Mistawasis Nêhiyawak.” This manuscript presents an emblematic project in MNFN—the Honour the Water Project—as a collaborative water governance experience that provided opportunities to build trustful and reciprocal relationships between MNFN and different water stakeholders in the NSRW. Relationships of relationality, reciprocity, and respect practiced throughout the project created opportunities for this First Nation to overcoming water disparities and co-build reconciliation. Foundational characteristics found in this project contributed to developing meaningful initiatives and processes of reconciliation that could be inspiring for other water governance experiences in Saskatchewan and in Canada.

Chapter 6 concludes the dissertation by summarizing the overarching findings and contributions and outlining steps for dismantling colonial structures in water governance through collaborative approaches, opportunities for bridges to meaningful processes of reconciliation in Canada, and practices for decolonized research through partnerships.

CHAPTER 2 - METHODOLOGICAL OVERVIEW

2.1 Research Design

This research is positioned in a constructivist research paradigm. In this paradigm, realities are socially constructed, local, and specific (Labonte & Robertson, 1996; Lincoln & Guba, 2013; Patton, 2002). In a constructivist approach, it is more important to deeply understand the case study selected than to hypothesize generalizations (Patton, 2002). The bases of the approach selected aligned well with the objectives proposed in this dissertation. As a researcher, I intended to demonstrate that dominant western utilitarian understanding of water is not the ultimate 'truth.' Rather, there are different understandings, perspectives, and experiences of water that are also part of governance processes and systems and that need to be acknowledged and legitimized. To understand the meaning of water governance for one First Nation in Canada, I used interpretative approaches to gain understanding of the different ways-of-being with water that research participants experience and construct. Using this constructivist approach, I intended to be an 'instrument' to document and report research participants' water experiences, knowledge, and interpretations. From the research participants' water interpretations, the meanings of water and water governance were co-constructed and presented through a framework. The framework represents the meaning that water governance has according to a local water context, worldviews, and knowledge.

In addition, critical theory and decolonial approaches were important points of reference for this dissertation. By using critical theory, I intended to incorporate analysis that can contribute to changes at the social and political levels. Issues of power and social inequalities were points of analysis and reflections throughout the research processes. Critical theory used "to critique society, raise consciousness, and change the balance of power in favour of those less powerful" (Patton, 2002) provided me reflective spaces to acknowledge issues of race, racism, and colonialism. By incorporating critical theory spaces to confront colonization and bringing in decolonial approaches and dialogue, it was possible to move beyond just 'inclusive' attempts (McArthur, 2021). For this research, critical and decolonized approaches were pivotal to understanding the effects of Canadian colonial practices and systems on water governance and on the lives of Indigenous Peoples. Such colonial practices include research practices that needed to be constantly reflected on, analysed, and corrected to

identify the nature of the systemic inequalities in the assumptions, motivations, and values that built this research process and outcomes.

Decolonized research was important for this dissertation. Research practices have been considered as tools of colonization, where Indigenous Peoples were objects to be studied, unethical guidelines were the norm, and exclusion was part of inquiry (Golden, Audet, Smith, & Lemelin, 2016). As a response to these colonial practices, Indigenous Peoples are leading processes of knowledge decolonization to regain control over their knowledge systems (Agrawal, 1995; Berkes, 2012). Practices of knowledge decolonization imply power changes, acknowledging Indigenous Peoples' expertise to decide how their knowledge is produced, used, shared, and archived (Agrawal, 1995; Ball & Janyst, 2008; Berkes, 2012). Research is one of the areas in which knowledge decolonization is tested. Decolonized research is seen as a political and moral inquiry that pursues emancipatory and empowering processes of doing research for social justice (Denzin & Lincoln, 2008; Kurtz, 2013; Nicholls, 2009). Decolonization in research attempts to strengthen three significant commitments: 1) to recognize and respect Indigenous authority in the research process (Adams et al., 2014; Hart, 2010); 2) to promote collaborative approaches to engage and partner with local communities for collective benefits (Ball & Janyst, 2008; Bharadwaj, 2014; Castleden, Morgan, & Lamb, 2012); and 3) to commit to long-term reciprocal relationships (Adams et al., 2014; Ball & Janyst, 2008; Bull, 2010). By practicing research under these three premises, research resonates with Indigenous ways of knowing, assuring the protection of Indigenous Knowledge and worldviews (Ball & Janyst, 2008; Kurtz, 2013).

2.1.1 Phased Sequential Partnership-Based and Co-designed methodological Approach

This research was framed as a qualitative case study to obtain a comprehensive or in-depth understanding of the individual case selected (Houghton, Murphy, Shaw, & Casey, 2015; Starman, 2013). Based on constructivist, critical, and decolonized approaches, the study was guided by a *phased sequential partnership-based and co-designed methodological approach*. Because a sequential approach was followed, the meaning(s) of water and water governance was easier to identify, analyse, reflect, and co-construct.

The case selected was Mistawasis Nêhiyawak (MNFN) located in Treaty 6 Territory in Saskatchewan, Canada, approximately 77 kilometres southwest of the city of Prince Albert and 120 kilometres north of Saskatoon. MNFN experienced extreme flooding in 2011 and 2014 as a result of heavy snowfalls in winter coupled with early rapid snowmelt and heavy rains in spring. During these years, the nation experienced elevated water levels, which damaged dams and levees used to prevent flooding impacts (Thapa et al., 2019). The well-being of MNFN members has been negatively impacted by the contamination of water sources, deterioration of riparian habitat, construction of road infrastructure, and displacement of people from their homes (Dawe, 2016; Thapa et al., 2019). To respond to the water issues affecting people and water, MNFN required approaches based on collaborations and on capacity and resources shared between them and water stakeholders in the NSRW where MNFN is located (More details about the research settings are provided in Chapters 4 and 5).

By working with MNFN, I was able to better understand the meaning that water and governance had for this First Nation, and how the interactions, relationships, and dynamics of water governance are built between Indigenous rights holders and non-Indigenous stakeholders. MNFN's worldviews on water, principles, and knowledge played a vital role in the governance of water, providing different approaches for the (de)construction of water governance that can be relevant for the sustainability of water governance in Saskatchewan and even in Canada.

Building partnerships with research participants was essential to developing trust and transparency in the use of the knowledge and data coming out of this research. This dissertation was conducted in partnership with MNFN following the principles of Community-based Participatory Research (CBPR). CBPR was selected to achieve the co-production of knowledge to meet the needs and expectations of the research participants and to achieve the research goals (Bull, 2010). As a cyclical learning-reflection process, CBPR provided space to develop critical consciousness about the challenges and opportunities for Indigenous Peoples' power, participation, and accountability in the governance of water. The research partnership was formalized when I gave an in-person presentation to the Chief and Council members on the proposed research and objectives. MNFN identified two co-research partners, both water leaders in the First Nation. The two co-researchers were actively involved with framing the research, guiding the interpretation of findings, and ensuring research

activities were conducted appropriately and according to local ethics' protocols. The relationship between the co-researchers and myself was guided by open communication and acknowledging all contributors as people and partners before researchers. At each stage of the research, I consulted with my co-researchers to ensure the direction of the research, so MNFN research expectations were accomplished. As well, the appropriate methods to use were collectively discussed to ensure respectful inquiry for MNFN knowledge ownership. Funding was shared with the community research partners to support their role in the research.

As part of the CBPR methodology, engagement with people in MNFN was crucial. Before starting my research, I frequently visited MNFN for two years. I had opportunities to be part of their Pow Wows, Treaty Days, Buffalo Treaty Open House, cultural ceremonies, academic meetings, meetings with other organizations on/off reserve, and summer activities in the school. The time invested in engagement was crucial to build trust and confidence with people. People knew who I was, where I came from, and why I was coming to their First Nation. I felt welcomed and accepted, and I had the honour of receiving a special gift at one of the Pow Wows—a star blanket that symbolically covered me as part of MNFN.

2.2 Methods Within the Phased Partnership-Based and Co-designed Methodological Approach

The investigation followed four specific and continuous steps (see Figure 2.2.1):

Phase 1: A scoping review. This review had two objectives: 1) to gather knowledge on the breadth of peer-reviewed literature on water governance in the Global North including Canada, and 2) to identify how gender and race shapes water governance.

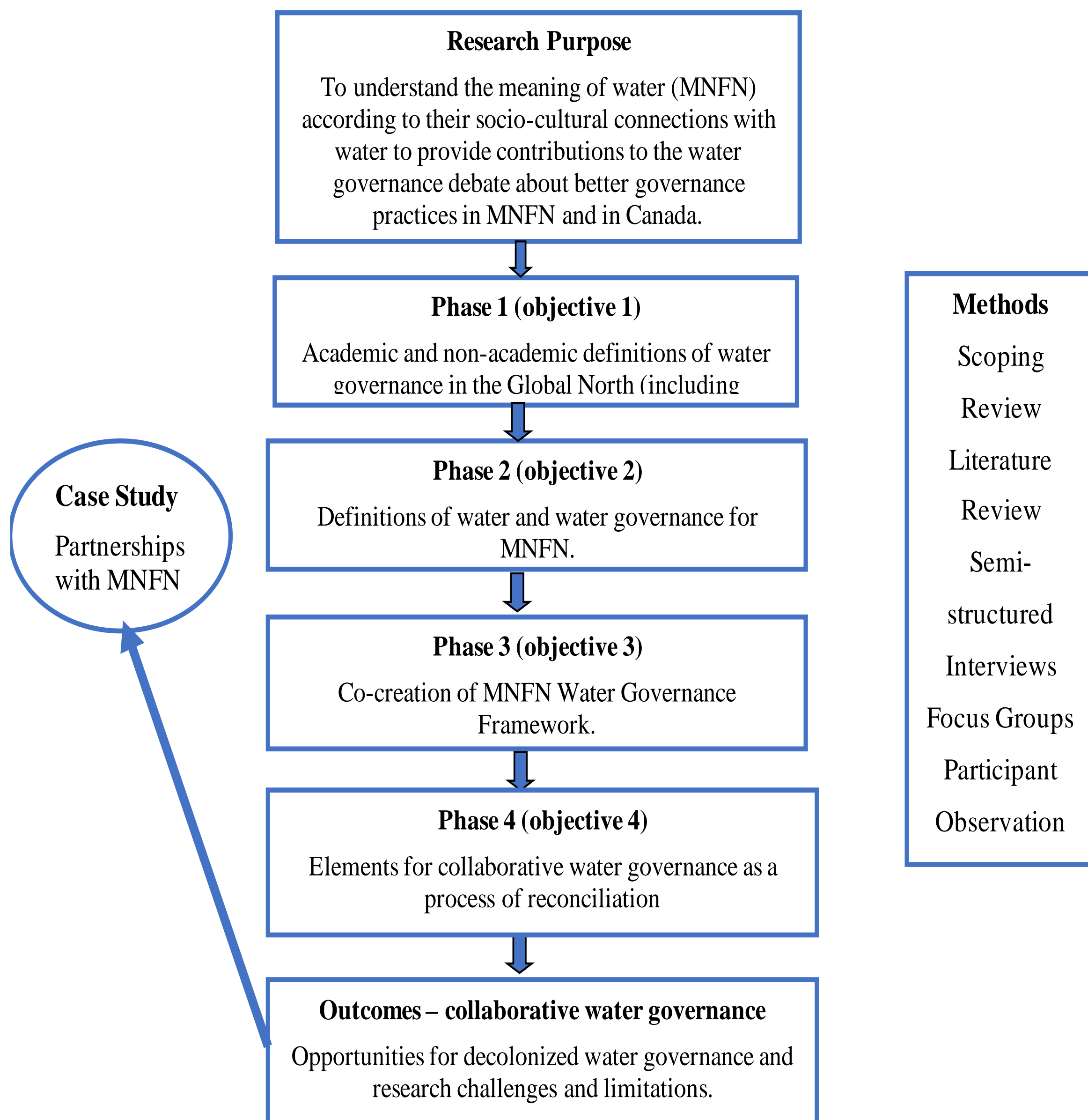
Phase 2: Community engagement and data collection with MNFN. The objectives set at this phase were: 1) to build trust and a close relationship with people in MNFN; 2) to explore the meaning of water and governance from MNFN's worldviews.

Phase 3: Results and data analysis. The objective set at this phase was the co-construction of a holistic framework for Indigenous water governance from MNFN's worldviews. The data gathered in Phase 2 was codified and analysed. The results were validated with co-researchers and research participants.

Phase 4: Documentation and attribution. The objective set at this phase was to document the attributes that collaborative water governance requires to contribute to

meaningful reconciliation processes in Canada. The information obtained from the field work at MNFN was shared with MNFN research participants and their close water stakeholders to identify the characteristics needed for meaningful reconciliation.

Figure 2.2.1 Phased Sequential Partnership-based and Co-designed Methodological Approach



Within this phased sequential approach, five qualitative methods were used. Below, these methods are briefly defined, and a brief description of their significance to each research objective and the benefits and importance of each are provided.

Scoping review: A scoping review has been defined as a research synthesis that aims to map the key concepts that underpin a field of study (Peters et al., 2015). While systematic reviews analyse results in the literature, including secondary statistical analyses, scoping reviews have a broader set of inclusion criteria and thus work to clarify concepts, investigate research conducted, and make suggestions for future work that will help fill gaps (Munn et al., 2018). In this research, the scoping review framework developed by Arksey and O'Malley (2005) was applied following five systematic steps that are explained in detail in Chapter 2. The scoping review was conducted in Phase 1 to identify the extent of research studies on gender in water governance in the Global North and the gaps in the literature. Gender disparities was a focus in this scoping review as I sought to understand the complexity of social inequalities from an intersectional perspective. The sample brought forward the complexity of water problems and participation in decision-making as an opportunity for more research and more inclusive water governance frameworks that guide different processes of inclusion and equity. The results obtained provided guidance for future work developed with MNFN.

Semi-Systematic Literature Review: Semi-systematic reviews do not intend to find all empirical evidence on any specific topic, but rather "look at how research within a selected field has progressed over time or how a topic has developed across research traditions" (Snyder, 2019, p. 335). By using a Semi-Systematic Literature Review, I conducted an overview of the literature of collaborative water governance in Canadian Indigenous contexts without doing a comprehensive evaluation of the literature. As a non-Canadian researcher, I needed to learn more about water governance in Canada, specifically in Indigenous lands. The Semi-Systematic Literature Review provided me with inputs to develop a theoretical framework or model that served as my theoretical and conceptual basis to begin the field work stage of this dissertation.

Semi-Structured Interviews: Semi-structured interviews were conducted with research participants, MNFN members, and their water partners. The purpose of these interviews was to gather information on the meaning of water, water governance, water issues and challenges experienced, participation in water decision-making, water

responsibility, and reconciliation. Because semi-structured interviews are open and less rigid than structured interviews, I was able to incorporate the interviewees' ideas or reflections into the discussion. Research participants were purposefully selected by the co-researchers, and the guiding questionnaires were co-developed with both co-researchers. In total, 24 semi-structured interviews were recorded, transcribed verbatim, and provided back to participants for review and validation. Thirteen interviews occurred in MNFN in places selected by co-researchers, and 11 interviews with MNFN water partners occurred either at the water partners' organizations or by phone call. More details about the semi-structured interviews done for this dissertation are explained in Chapters 4 and 5.

Focus Groups: Focus groups were proposed as a method to gather small groups of people in MNFN to talk about the meaning of water governance and co-build the water governance framework representative of MNFN worldviews and knowledge. Two focus group activities were developed: one with adult participants and the other with high school students from MNFN. More details about this method are offered in Chapter 4.

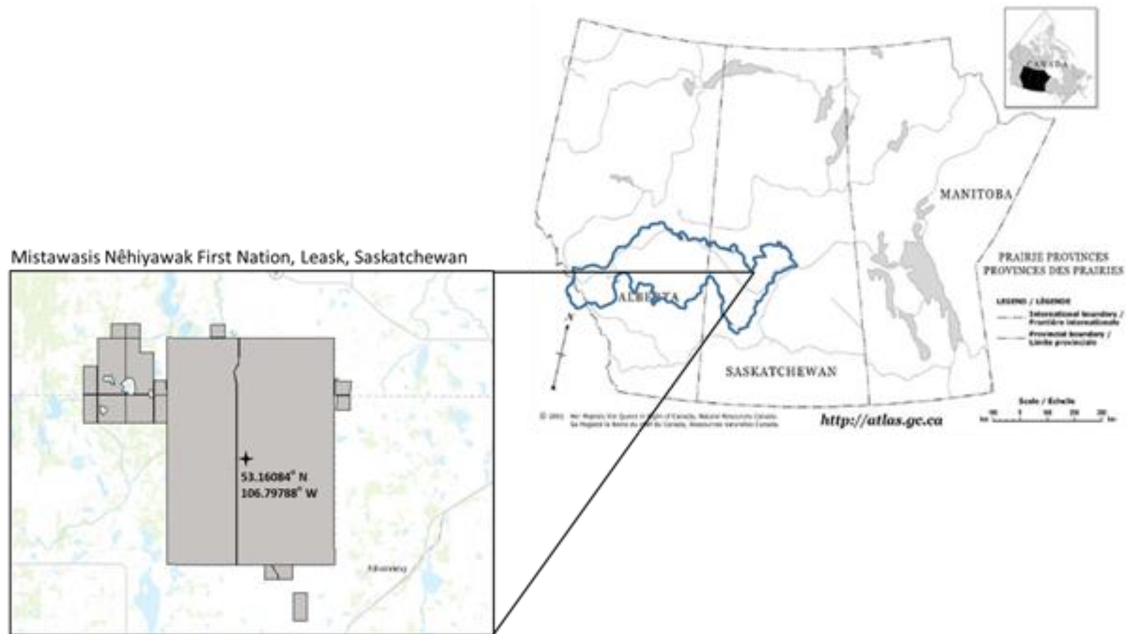
Participant Observation: Participant Observation was employed to acquire systematic descriptions of various MNFN events to which non-Indigenous water partners were invited. Participant observation involved an open and non-judgmental mindset when observing participants. I used the method while engaging with people in MNFN to gain understanding of this First Nation, their history, worldviews, culture, and relationships with non-Indigenous partners. Observation of participants took place largely at cultural events (such as Pow Wows, Treaty Days, and Summer Cultural Camps), school activities, and national meetings. This method provided me with opportunities to get to know people in MNFN and to begin to understand what people in this nation believed was important for their people and their land.

2.3 Research Settings

The Cree First Nation MNFN is in Treaty 6 Territory in Saskatchewan, Canada (approximately 77 kilometers southwest of the city of Prince Albert and 120 kilometers north of Saskatoon). This Fist Nation is within the North Saskatchewan River Watershed (NSRW), which covers an area of 41,000 km^2 and includes 51 Rural Municipalities, 29 First Nations lands, and 17 reserves (see Figure 2.3.1) (Saskatchewan

Watershed Authority, 2007). The North Saskatchewan River begins in the Columbia Icefields in the Rocky Mountains of Alberta, and it flows north-easterly towards the South Saskatchewan River and through Saskatchewan, travels across Manitoba, and drains into Hudson's Bay (Saskatchewan Watershed Authority, 2007). In 2013, the NSRW Environmental Risk Scan and Assessment identified droughts and flooding as two main hydrological concerns (Council, 2013).

Figure 2.3.1 Mistawasis Nêhiyawak in Canada



In 2011 and 2014, MNFN experienced extreme flooding as the result of heavy snowfalls in winter coupled with early rapid snowmelt and heavy rains in spring. The elevated water levels damaged the dams and levees used to prevent flooding impacts affecting the well-being of many MNFN members (Dawe, 2016; Thapa et al., 2019). In 2014, MNFN Chief and Council invited federal and provincial government organizations, non-government organizations, and academic organizations[11] to MNFN to initiate conversations to find solutions to their flooding issues. After several meetings held in the Nation partnerships were formed and the initiation of the "Honour the Water" started in 2015. The project focused on source water protection, drainage studies, and the implementation of innovative drainage systems for the prevention of flooding in the Nation.

[11] More details about the nature of these organizations are referred in Chapter 4.

The Honour the Water project transformed into a mission to develop holistic water governance and management approaches. The project generated opportunities for long-term partnerships between MNFN and water stakeholders interested in a more sustainable approach in water governance in the watershed.

2.4 Data Analysis

The dissertation involved three different stages of data analysis. The first was performed for the scoping review methodology, the second for the Semi-Systematic Literature Review, and the third for analysing data coming from the interviews, focus groups and participant observations. I performed the analysis and subsequently shared results with co-researchers and research participants for validation.

Scoping Review: Following the scoping review framework developed by Arksey and O'Malley (2005), data analysis included processes of eligibility criteria that included a three-step screening process. By using specific parameters detailed in Chapter 3, I selected articles on gender and water governance.

Semi-Systematic Literature Review: Using qualitative inductive approaches, I identified the meaning and theoretical components of collaborative water governance in Canada. After reviewing a sample of 208 records, I imported them to NVivo 11 (a qualitative data analysis software program), identified the main theoretical themes (e.g., collaboration, self-determination, Indigenous ontologies and epistemologies, participation, relationships, partnerships, colonization legacies, etc.), and provided the theoretical basis needed to inform interviews and focus group activities. A conceptual model of collaborative water governance was developed and later used for co-building the water governance framework with MNFN.

Interviews, Focus Groups, and Participant Observation: Inductive qualitative approaches were applied to analyzing data gathered through interviews, focus groups, and participant observation. Using NVivo 11, I transcribed and coded the data from interviews, focus groups and participant observation field notes and analyzed them by topic. I created the codes myself using NVivo's 'often used terms' feature to find the most common words. The initial higher-level codes or themes were generated from some of the words that came from the frequently used terms list. Analysis followed inductive approaches as I labelled main units and grouped them into themes. Additional themes were chosen or coded in accordance with the results obtained in the literature

review. Themes were reviewed by both co-researchers, Anthony Johnston and Michelle Watson.

2.5 Researcher Positionality

When a researcher's positionality is stated, their ontological and epistemological positions can be revealed. This revelation makes it easier for the reader to understand how the researcher's position (background, personal values, and experiences) influences the research observations, process, and outcomes (Corlett & Mavin, 2018; D'silva et al., 2016). In the following lines, I give a short overview of my personal identity and experiences that brought me to this project and influenced its course.

I am a woman 'mestiza[12]' born in Ecuador who grew up as part of the mainstream population of this country. From my position as mestiza, I was not mindful of the social privileges that I had in a racist society. I grew up without much contact with Indigenous Peoples in Ecuador and knowing very little of their history, knowledge, challenges, and struggles. By 2000, I had started my undergraduate studies in the field of ecological tourism, and it was only then that I had my first encounters with and understanding of diversity. Many foreign tourists are eager for non-mainstream experiences and are attracted to highly diverse countries. Ecuador promotes its biological and cultural diversity as its main tourism strength. My learning at university focused on the 'value' the different Indigenous and Afro Ecuadorian cultures brought to tourism. At the time, I was not aware of the unequal power relationships between the Indigenous and Afro communities and the tourism industry led by Ecuadorian mestizas/mestizos and white foreigners.

When I did my masters in the field of environmental governance in 2010, I reflected more deeply on the racist and oppressive relationships present in Ecuador. My thesis explored the complex relationships and interactions in the environmental governance of the *Yasuní* Biosphere Reserve, one of the most important reserves in Ecuador due to the high diversity of species in this area—part of the Amazon rainforest. As I developed my research, I approached concepts like colonialism, decolonization,

[12] Mestiza, mestizo, mestize, is the identity of people in Latin America whose racial and/or ethnic identity is the result of a mixed ancestry between Europeans (especially Spanish) and Indigenous Peoples in Central and South America.

critical interculturality, *diálogo de saberes* (or dialogue between ways of knowing), among others. My ability to think critically evolved as I worked on my thesis and after graduation when I worked as a research assistant in a critical and reflexive research group named *Laboratorio de Interculturalidad* (or Interculturality Lab) at the *Facultad Lationamericana de Ciencias Sociales, Quito* (or the Latin American University of Social Sciences – Quito). Academic interdisciplinary research on intercultural relationships at social, political, educational, and health levels in Ecuador provided me opportunities to de-construct my inherent colonial mindset. As I worked closely with different Indigenous Peoples and communities in my country, I recognized racist attitudes and language that were part of my everyday life of which I was not even conscious. I started questioning the colonial structures of power ruling the lives of Indigenous Peoples in my country. Moreover, I questioned my role in the Ecuadorian society in the process of building a Plurinational and Intercultural state as it is written in the Ecuadorian constitution.

In 2014, I moved to Saskatoon in Canada to continue my academic career. I pursued a Ph.D. degree with a focus on Indigenous Peoples. My first intention was to develop my Ph.D. research in my home country because I knew the Ecuadorian context, and my fieldwork would have been in Spanish, my mother tongue. Nonetheless, life set a different route for me, and my supervisor suggested that I work in the context of water governance in Indigenous lands in Canada. Before coming to Canada, I had never heard of Indigenous Peoples in this country, their history, and the struggles they faced and still face in recognition, justice, and equity. When I realized that Indigenous Peoples in Canada (a developed country) still confront colonial legacies that normalise power asymmetries, marginalization, and discrimination, I was encouraged to take up the challenge and learn more about the complexity of water governance in Indigenous lands.

My identity as an immigrant woman from Latin America influenced how I was perceived in the First Nation I with whom I work. I come from a southern developing country, and this 'developing' tag places my country and people outside the dominant countries and societies. My immigrant status and ethnic roots placed me also outside the mainstream white Canadian society. Thus, when I talked to people from the First Nation I worked with, they saw me as an outsider, not as part of the dominant society. This view of me meant that perhaps they were more open with me about controversies and

understandings of 'belonging' than they would have been with a white Canadian from mainstream society.

I acknowledge myself also as a non-Indigenous and non-Canadian person. Thus, my position in this research is as an outsider having the inherent bias of a researcher influenced by the western qualitative approach. I intended to limit possible bias by positioning myself in the field of critical theory (Patton, 2002; Roberts, 2014). I embraced a critical perspective that could increase my awareness and understanding of the social and environmental inequities lived by Indigenous Peoples. I intended to be aware of the potential power imbalances in research by practicing collaborative and participatory research methods. The leadership of Indigenous Peoples throughout the research was crucial for me. I intended to build reciprocal and respectful relationships by visiting the First Nation and engaging with people for over two years. As an outsider, I intended to be aware of the First Nation's internal dynamics and ethical protocols. I cared deeply about the relationships co-built with people in MNFN, valuing the research participants' time, will, and commitment to research. My research experience left me with critical perspectives and questions about the process of decolonization in Canada and on healing relationships between Indigenous Peoples, non-Indigenous people, and immigrants living in this country.

2.6 Ethical Considerations

Ethically, this research was supervised and approved by the University of Saskatchewan Behavioral Research Ethics Board (certificate number REB-BEH-17-237). The board supervised the actions taken throughout the fieldwork stage while data were collected. Informed consent forms, guidelines to collect data, guidelines for data storage, and assessment of the potential risk for participants were revised and approved by the Board before I approached participants from inside and outside the First Nation.

Ethical protocols were also supervised by the Indigenous co-researchers involved in this research. The ethical guidelines approved by the Board were shared with the co-researchers, who supervised the application of every guideline stated. In addition, the research goals, objectives, and process were presented to Chief and Council at the First Nation prior to community member engagement and initiation of research activity. When data was collected, local cultural protocols were followed. The data collection processes demonstrated the intention of doing research respectful of

local knowledge and traditions. I intended to build trust with my co-researchers by being honest and transparent in the objectives behind this research project.

2.7 Ensuring Trustworthiness of Research

Trustworthiness refers to the criteria used to determine the rigour in qualitative research (Creswell & Poth, 2016; Houghton, Casey, Shaw, & Murphy, 2013; Lincoln & Guba, 2007). These criteria are used to assess the credibility and truthfulness of research in qualitative studies. Lincoln and Guba (1985, 2007) proposed criteria with four elements to evaluate trustworthiness: credibility, which indicates the value and plausibility of the research results; dependability, or how consistent and reliable the findings are; confirmability, the neutrality and truthfulness of the findings; and transferability, the criteria that determine if the results can be transferable to similar contexts (Houghton et al., 2013). Several authors have argued that qualitative studies do not necessarily have to apply the four criteria but should involve at least two or three (Creswell & Poth, 2016; Morse, 2015). Trustworthiness in the present research was practiced in the following way.

Credibility. This research was built on prolonged engagement and persistent observation (Houghton et al., 2013; Lincoln & Guba, 2007). By spending over two years before my fieldwork started in the MNFN community and one year collecting and analysing data, I could interact and build relationships with local people. From these relationships and experiences, I was able to form a deep understanding of the dynamics of water governance in MNFN, the meaning of water according to the Nêhiyawak worldviews, the water problems and challenges local people faced, the strategies used to deal with these problems, and the importance of partnerships. Additionally, triangulation using different methods (scoping review and literature review, interviews, focus groups, and participant observation) and data sources (diversity of research participants by age, gender, leadership, ethnicity) demonstrated consistency in the data and provided a complete picture of the water governance structures, dynamics, and interactions in MNFN. Peer debriefing was applied through the guidance of my supervisor throughout the whole research process and through the active feedback provided by the co-researchers during the data collection and analysis stages. Finally, member checking was developed by providing to research participants and the two co-researchers the verbatim transcripts from the interviews and focus groups to ensure the

information shared was accurately transcribed. None of the participants had concerns about the interview content, and they all approved the use of the data acquired.

Dependability and Confirmability. It has been argued that dependability and confirmability are tightly interconnected, as both focus on the reliability of the data collection and analysis (Houghton et al., 2013; Morse, 2015). For phase 1 of this research, I followed the process established by Arksey and O'Malley (2005), which is described in Chapter 1. For the audit trail in phases 2, 3, and 4 (see Houghton et al., 2013) and the rationale followed for decisions on the reliability of the data analysis, I used mainly NVivo 11. By using NVivo 11, I identified central concepts repeated in the data collected. These concepts were represented in the code labels for data analysis; for example, across the interviews and focus groups, I identified such concepts as the meaning of water, the value of partnerships, and the principles in water governance.

Transferability. Through thick descriptive data, I provided detailed narratives of the research context and the research process, so readers could evaluate if the findings could be replicable in their research projects. Detailed descriptions of the water governance system were revealed, as well as the elements and approaches required for decolonizing water governance according to MNFN. Raw data through direct quotes were included, allowing readers to make different interpretations.

PREFACE TO CHAPTER 3 – THE ROLE OF GENDER IN WATER GOVERNANCE IN THE GLOBAL NORTH: A SCOPING REVIEW

Gender inequalities in water governance tend to be overlooked, resulting in a lack of understanding of the complex power issues in water decision-making. More specifically, in the Global North, research and discussion on water governance tend to be gender-neutral, focus on narrow categories, and homogenize women's identities and experiences. Water disparities are not the result of one single cause but rather the result of social interactions among different categories (i.e., gender, race, ethnicity, and socio-economic class). This paper examines the gaps in knowledge on water governance and gender in the Global North. A scoping review was conducted by reviewing literature published from 2000 to 2020. The main question guiding the Chapter is: "How has gender been characterized in the literature on water governance in the Global North?" This Chapter demonstrates the following:

- A fulsome understanding of gender in water governance is hindered in the Global North.
- The intersections and interactions between different social categories reinforce the power structures in place, where Indigenous Peoples, including Indigenous women, are the most vulnerable to water risks.
- Water issues represent important threats for Indigenous Peoples in the Global North, especially women as the water caregivers and those responsible for a household's well-being.
- More Indigenous women's voices are demanding spaces for active participation in water decision-making.
- Intersectional and interdisciplinary approaches are needed to better understand water disparities, to connect research to different ontologies, and to link researchers and water users.

Overall, this chapter demonstrates that in the Global North gender inequalities are current and real problems in water governance. Greater understanding of the complexities and meaningful inclusion of gender, social-political class, and ethnicity in water governance is needed. Different water governance approaches are required. These approaches need to include the different social categories that are impacting Indigenous women's lives and the well-being of their communities.

I intend to publish a version of this paper in the Journal Geoforum. The full citation of the paper will be:

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CHAPTER 3 – THE ROLE OF GENDER IN WATER GOVERNANCE IN THE GLOBAL NORTH: A SCOPING REVIEW

Abstract

Using a scoping review methodology, this paper examined literature published from 2000–2020 related to gender, water governance, and associated terms, cataloguing and assessing themes evolving from gendered involvement in water governance in the Global North. The review revealed that water governance issues are present in the Global North when access to safe drinking water is unequal, especially for marginalized populations including Indigenous Peoples and, within this group, Indigenous women. The literature reported the need for advancements in water governance, where institutions, policies, and regulations are aligned with the local contexts, public participation, and diverse perceptions of effective water management and governance. Two dominant theoretical approaches framed the authors' papers: first, the neoliberal approach informed discussions of how price subjectivity and the cost of water compromise the social, political, environmental, and physiological values important for water users like women; second, the feminist discourse called for the incorporation of applicable strategies to promote gender equality, and overall fairness in water governance. Although intersectional perspectives in the literature were few, some authors demonstrated in their research that issues of race, gender, and poverty intersect, reproducing water injustices. This review found that the literature on the Global North focuses water governance and gender discussions on the roles, knowledge, and participation of women. Methodologically, the sample showed that water governance issues in the Global North are complex, requiring novel interdisciplinary methodologies, as well as innovative means for knowledge mobilization. Drawing from the scoping review and progress on gender balance, this paper recommends increased commitment to addressing gender equality in water governance agencies and across all water research collaborations.

3.1 Introduction

Climate change hazards, floods, drought, and lack of access to secure drinking water are threatening large proportions of marginalized groups (Finn & Jackson, 2011). These threats, however, are not easy to address. Water is considered a complex multipurpose

flow resource, whose benefits or harms cross political boundaries affecting different "users, sectors and scales of governance" (Baird & Plummer, 2013, p. 277). Water governance has shifted from the traditional state-centric perspective towards systematic approaches, which promote active stakeholder participation, and institutional flexibility (De Loë & Patterson, 2017; Schulz et al., 2017). Water governance involves political, organizational, and administrative processes that articulate and implement community water interests, participation, and decisions on water resources, delivery, and services (Bakker & Morinville, 2013). Nonetheless, the articulation and implementation of diverse interests in decision-making, especially of marginalized populations, represent a crucial challenge for water governors now and in the future.

Many researchers working in the water governance field have reported that gender is an important category for inclusion in contemporary adaptation of water governance structures and processes (Bakker & Morinville, 2013; Grant, Huggett, Willets, & Wilbur, 2017; Mandara, Niehof, & Van der Horst, 2017; Singh, 2008). Scholars argued that research on gender and water governance in the Global North or 'developed countries' is limited or overlooked, resulting in a lack of understanding of the complex relationships between water decision-making and gender (Anderson et al., 2013; Harris, 2009; Harris, Phartiyal, Scott, & Peloso, 2013). Researchers in the Global North have been urged to expand explorations of gendered water roles, participation, knowledge, and contributions to water policies (Best, 2019; Carmi, Alsayegh, & Zoubi, 2019).

Advances in research on gender and water governance require awareness of the heterogeneity of water inequalities perceived and experienced by people of different gender identities at specific locations. These specific differences place gender beyond narrow dichotomies (men versus women) that usually homogenize women's identities and experiences at individual or collective levels (Djoudi et al., 2016). Gender, like other social identities (social class, age, race, ethnicity, disability), is socially constructed or created through social interactions. Not a pre-determined or inherent fact, gender is experienced differently across time and place (DeLamater & Hyde, 1998; Hruby, 2001). Gender, social, and cultural identities are intimately linked to issues of power, value systems, and ideology. Identity plays an important role in how individuals understand and experience life and the types of opportunities and barriers they encounter. Because gender experiences evolve over an individual lifetime, they are

always changing. Social values on gender are influenced by intergenerational, generational, familial, and social changes, as well as by legal and technological societal advances. Thus, gender needs to be conceptualized as a multidimensional social construct in the context of global water governance discussions and frameworks including the Global North.

Water disparities involve more than gender inequality. Additional social dimensions such as race, ethnicity, and socio-economic class intersect with gender to effect differentiated experiences of water disparity for people belonging to different social groups (Thompson, 2016). To better understand water disparities and governance, theoretical approaches can unpack social categories of influence and consider the complex interactions among them. One such approach is intersectionality, a theoretical framework applied to understand how facets of an individual's social and political identity might merge to create distinct forms of discrimination (Djoudi et al., 2016; Fletcher, 2018; Grant et al., 2017; Walker, Culham, Fletcher, & Reed, 2019). For example, intersectionality has been applied in the context of resource extraction conflicts. Research has revealed how race, class, gender, and indigeneity can shape environmental impact assessments, which privileges specific populations' needs, perspectives, and knowledge (see Kojola, 2019). The interaction among different social categories (e.g., race/ethnicity, gender, class, sexuality, and ability) constructed within the social structures of power at specific times and in particular contexts are the focal points of intersectional frameworks (Djoudi et al., 2016; Thompson, 2016). Walker et al. (2019) pointed out that intersectionality helps explain that "social inequality is not formed by any single factor alone, but by multiple overlapping social locations and systems of power" (p. 2). In other words, social disparities evolve not from a single cause but rather as the result of social interactions among categories of difference. For example, in the context of environmental hazards, Walker, Reed and Fletcher (2020) applied an intersectional lens within a critical frame analysis, finding that mainstream media discourse reflected and reproduced gendered and exclusionary characterization of wildfires responses in Saskatchewan, Canada. The discourse placed women and Indigenous communities as the victims while men and government institutions were the legitimate voices and even heroes. These authors argue that intersectional approaches are needed for building local response strategies and making visible underrepresented voices. In other words, rather than being homogeneous, strategies, policies, and

interventions should adapt to local contexts and the particular social categories that are in play.

Researchers who employ intersectional approaches to reveal gendered disparities demonstrate the value of interdisciplinary tools and frameworks to conduct research and disseminate results. For example, Thompson (2016) argued that water experiences demand interdisciplinary perspectives that can show the different social-ecological dimensions pertaining to particular systems. She presents a framework to study the eco-social water relations within intersectionality, where spatial and temporal heterogeneities of the water supply (e.g., water depth, distance, time of the year) crosscut with complex social categories (e.g., gender, religion, and ethnicity) for water access. As a strategy to develop intersectional and interdisciplinary research, scholars advise the practice of reflexive research that considers the researcher's own beliefs, judgments, and practices through the research process and determines how these may have influenced the research (Iniesta-Arandia et al., 2016; Reed & Mitchell, 2003; Walker et al., 2019). Reflexivity is operationalized when researchers express their understanding of the interconnectivity between and among themselves, study participants, the data, and the methods they use to analyse and represent their research results (Walker et al., 2019). Reflexivity as a practice represents an important tool for application in water research. Reflective approaches open space for interdisciplinary dialogue by helping researchers and knowledge users understand and appreciate the influences of diversity, power differentials, vulnerability, and (de)colonization in water governance and knowledge.

A practical contribution to water research, however, also requires new ways to mobilize knowledge based on participatory approaches that use familiar or local language to conduct research (Anderson & McLachlan, 2016; Birks, 2013). Participatory research has evolved as an approach to situate research in historical, social, political, cultural contexts where research is conducted with and for the benefit of research participants. In the context of water, health, and environmental research, there are many examples where locally relevant mechanisms of research dissemination have been incorporated. For example, Kyoon-Achan et al. (2018) demonstrated how participatory research used in the project Initiative for Primary Healthcare Innovation and Transformation for Indigenous communities in Manitoba, Canada facilitated transformative primary health care processes. During the project, language and cultural

protocols were incorporated, restoring power balance in the research. Positive changes emerging from the project included the recognition that when communities receive help, they can make important changes in the structure and delivery of services for the benefit of the people. In the realm of water, water equality challenges could be better addressed with the adoption of interdisciplinary and participatory processes of research and knowledge production, especially for marginalized populations living in the Global North.

To determine limitations or gaps in knowledge on water governance and gender in the Global North, a scoping review was conducted on literature published from 2000 to 2020. The main research question guiding the review was how has gender been characterized in the literature on water governance in the Global North? This article presents the scoping review methodology, describes, and discusses results, and shares recommendations for academic researchers, government agencies, and water governance organizations.

3.2 Methods

A scoping review was conducted to examine the extent of research studies on gender in water governance in the Global North and to identify gaps in the literature. While systematic reviews allow for deep analysis of results in the literature, including secondary statistical analyses, scoping reviews have a broader set of inclusion criteria and thus work to clarify concepts, investigate research conducted, and make suggestions for future work that will help fill gaps (Munn et al., 2018). The scoping review framework developed by Arksey and O'Malley (2005) was applied and followed five systematic steps: identifying the research question; identifying relevant studies; selecting relevant studies; charting the data; and collating, summarizing, and reporting the results. A multidisciplinary research team working in the fields of water quality, gender, water governance, community-engaged research, and toxicology worked together through the process of the scoping review. Two members of the research team read the entire sample of articles.

3.2.1 Data Sources and Search Strategy

Supported by a research librarian, a search protocol was developed to identify studies in gender and water governance. The search protocol listed the main literature databases,

key search terms, and web-based grey-literature sources. Six academic databases were included in the search: (i) Web of Science, (ii) Sci Verse Scopus, (iii) Academic Search Complete, (iv) PAIS Index, (v) Gender Studies Database, and (vi) Google Scholar. These six were selected for their breadth, as well as their specific focus on gender. For popular search engines (i.e., Google, Google Scholar) only the first 100 results were reviewed because of time restrictions and arguments about the irrelevant results obtained after the first 100 hits (see Pham et al., 2014). As part of the grey literature, additional sources were included from other web searching engines and government websites. The search was limited to reports and policy briefs in PDF or Word format that did not require access to information requests. The grey literature search was developed using the search strings "water governance" AND "gender."

The key search terms for this review were: "water governance" (and synonyms such as governance for water, water decision making, water decision-making, water institution, water governance process, water stewardship) AND "gender" (and synonyms such as women, men, woman, man, gender role, role of gender, sex role, women leader, men, under-represent, gender activism, gender position, gendered relation, dominat*, subordinat*, marginal, gender inequality, division of labour, feminine*, masculine*, gender equality, gender identit*, gender differences, sex differences). Geographic location search terms were not included at this stage to retrieve a good sample size; however, a geographic filter was included later at the eligibility criteria stage. Specific research strategies were established according to the capabilities of each database. The total number of records obtained at this stage was 579. In addition to the records found through the databases, 39 records from various sources (colleagues' referrals, Google search, government websites, and accessible theses) were added in 2017. An additional search of the databases and grey literature was conducted in January 2021, obtaining 11 new articles (see Table 3.2.1). One thesis was identified through the search of grey literature. The final number of articles for this review was 630 records. Citations and abstracts were imported or manually entered in the reference manager software Mendeley 13.8 (Mendeley Ltd. 2016).

Table 3.2.1. Search and Summary of Records

Database	Results / Date	Results /Date
Web of Science	251 / Oct 04, 2017	2 / Jan 19, 2021

Sci Verse Scopus	83 / Oct 04, 2017	6 / Jan 19, 2021
Academic Search Complete	51 / Oct 05, 2017	1 / Jan 19, 2021
PAIS Index	50 / Oct 05, 2017	1 / Jan 19, 2021
Gender Studies Database	7 / Oct 05, 2017	0 / Jan 19, 2021
Google Scholar	100 / Oct 05, 2017	0 / Jan 19, 2021
Grey literature	37 Oct 07, 2017	1 / Jan 19, 2021
Subtotal	579	11
Total	**590**	

3.2.2 Eligibility Criteria and Study Selection

The selection of articles for the scoping review involved a three-step screening process. Two researchers worked through these stages (Mora and Bradford). After duplicates were identified and eliminated, the first screening was done based on three parameters: (i) the articles were limited to those that were peer-reviewed, (ii) restricted to English and English/French language articles, and (iii) limited to articles published between 2000 and 2020. Following this process, 380 records remained and were exported to Microsoft Excel (Microsoft Corporation 2013). In the second screening stage, titles were manually and independently screened, identifying records with two or more keyword combinations in the title. After the title screening process, 107 records remained for abstract screening (third screening). At this stage, two questions were proposed as key inclusion/exclusion criteria: (i) Does the abstract discuss water governance and gender? and (ii) is the article's discussion geographically located in the Global North? Since the number of articles limited to the Global North were few, the research team decided to include articles that specified cases in the North and South, articles that did not specify a geographic location, or those that were theoretical in nature. The concepts Global North and Global South are used to describe groupings of countries with particular socio-economic and political characteristics. The term Global North—or developed countries— is used to describe wealthy, technologically advanced, politically stable countries mainly in North America, Western Europe, and Oceania. The term Global South—or developing countries—comprise those with a lower annual income, usually in Africa or Asia, or in Central and South America. Articles considered to be theoretical generally discussed gender and water governance in a broader sense, providing important conceptual and experimental insights for discussion. Once the three-step screening process was completed, 27 records remained in the sample.

3.2.3 Data Charting and Summary

The records selected for full text-review (27) were evaluated based on eight deeper questions (see Table 3.2.2). These questions helped identify the main themes in the sample and allowed the research team to eliminate records that did not specifically discuss gender and water governance. Two researchers (Mora and Bradford) extracted the main themes independently from October 30th to November 13th, 2017. Afterwards, they met to review and discuss the characterization of data and to settle on main themes.

Table 3.2.2. Inclusion Criteria for Full Text Review

1. Do the papers on water governance and gender reference one another?
2. Is the article published in a feminist scholarly journal?
3. Is the article published in a scientific journal?
4. Are there specific gender theories in the article?
5. Is the discussion in the article established from an intersectional approach?
6. Are there interdisciplinary approaches discussed in the article?
7. Does the discussion of gender focus on women's roles, issues, and power?
8. Is there any feminist theorizing about water governance?

3.3 Results

A total of 630 records were found, including 590 from the database search and another 40 from colleagues. After duplicates were removed and a three-step screening process and full-text reading were completed, 26 of the 27 records were included in the final scoping review (see Figure 3.3.1). The sample showed that water governance and gender became more visible in the literature starting in 2006 and that the years 2013 and 2020 had the most published articles on this topic. The articles were published in gender, feminist, geography, environmental management, and water journals. Of the 26 articles, 13 were not cited by any of the others, nor did they themselves cite the others (B, C, D, G, H, M, Q, R, S, T, V, W, X) (see Table 3.3.1). Of the 51 authors in the sample, 44 were women. The countries where research was conducted included Canada, the United States, and Australia. We found that gender in the context of water governance in the Global North was primarily discussed as roles, knowledge, and perceptions that women have regarding water. Gender in water governance was mainly discussed from approaches informed by neoliberal and feminist theories and frameworks. Some articles (A, B, C, E, F, I, K, M, P) referred to the spiritual connection between Indigenous women and water from Indigenous worldviews, providing

opportunities to analyse the intersections present in the Global North. Although the scoping review was done systematically, it is still possible that relevant studies were excluded. Discussions in the 26 articles centred on seven main themes, which are examined below.

Table 3.3.1. Articles Included in the Scoping Review (n = 26)

ID Author(s) Year Title	Design Method	Geographic location FN=First Nation	Articles' Main Ideas
A (1) Chiblow 2020 An indigenous research methodology that employs Anishinaabek Elders, language speakers, and women's knowledge for sustainable water governance	Critical essay	Robinson Huron Treaty territory – Canada	The author argues for the importance of knowledge, language and the role of women in sustainable water governance, claiming that changes in research and the governance of water are needed. Indigenous women's role and relationship with water, TK, and participative approaches are the guidelines proposed for those changes.
B (2) Hania and Graben 2020 Stories and the participation of indigenous women in natural resource governance	Critical essay	Canada	The article explores the problem of Indigenous women's lack of participation in water governance in Canada. Indigenous women's underrepresentation in water governance can improve if the followiing are recognized: women's governance responsibilities, their special relationship to water, and their responsibility to speak for water.
C (3) Awume, Patrick, and Baijius 2020 Indigenous perspectives on water security in Saskatchewan, Canada	Research paper Quanlitative	Saskatchewan – Canada	The research explores the meaning of water security for Indigenous Peoples living in Saskatchewan. Results show that water security is related to safety, stewardship, monitoring, cultural identity, including the role that women play in water decision-making.
D (4) Caretta 2020 Homosocial stewardship: The opposed and unpaid care work of women water stewards in West Virginia, USA	Research paper Quanlitative	West Virginia – USA	The author explores the crucial role that women have in the preservation of water in Appalachia. Nurturing approaches, financial impediments, and opposition issues are all examined, showing how women enact water stewardship.

E (5) Chiblow 2019 Anishinabek women's Nibi giikendaaswin (water knowledge)	Critical essay	Canada	The author provides her understanding of Anishinabek women's nibi governance.The meaning of water and the role of women in water governance are developed through the Anishinabek ontologies and epistemologies
F (6) Best 2019 (In) visible women: Representation and Conceptualization of Gender in Water Governance and Management	Research paper Quantitative	Oregon – USA	The representation of women and the conceptualization of gender in water governance organizations are presented. Findings show that gendered analysis in water governance should increase to address unequal power dynamics.
G (7) Hanrahan and Mercer 2019 Gender and water insecurity in a subarctic Indigenous community	Research paper Qualitative	Coast of Labrador – Canada Inuit	Research focuses on understanding the gendered impacts and emotional geopgraphies of water insecurity experienced by the women in the community of Black Tickle.
H (8) Eichelberger 2018 Household water insecurity and its cultural dimensions: Preliminary results from Newtok, Alaska	Research paper Qualitative	Newtok – Alaska - US	The author describes the cultural dimensions and hydrosocial relationships involved in household water access based on sharing and reciprocity. As part of these cultural dimensions, she discovers gendered water roles. The hydrosocial relationships and the importance of TK reveal important insights about water security in remote communities in Alaska.
I (9) Latchmore et al. 2018 Critical elements for local Indigenous water security in Canada: A narrative review	Literature review	Canada	The review explores traditional Indigenous worldviews and cultural values to ensure sustainable water security. Three main topics are identified from in review: water from natural sources, water as a life-giving entity, and water and gender.

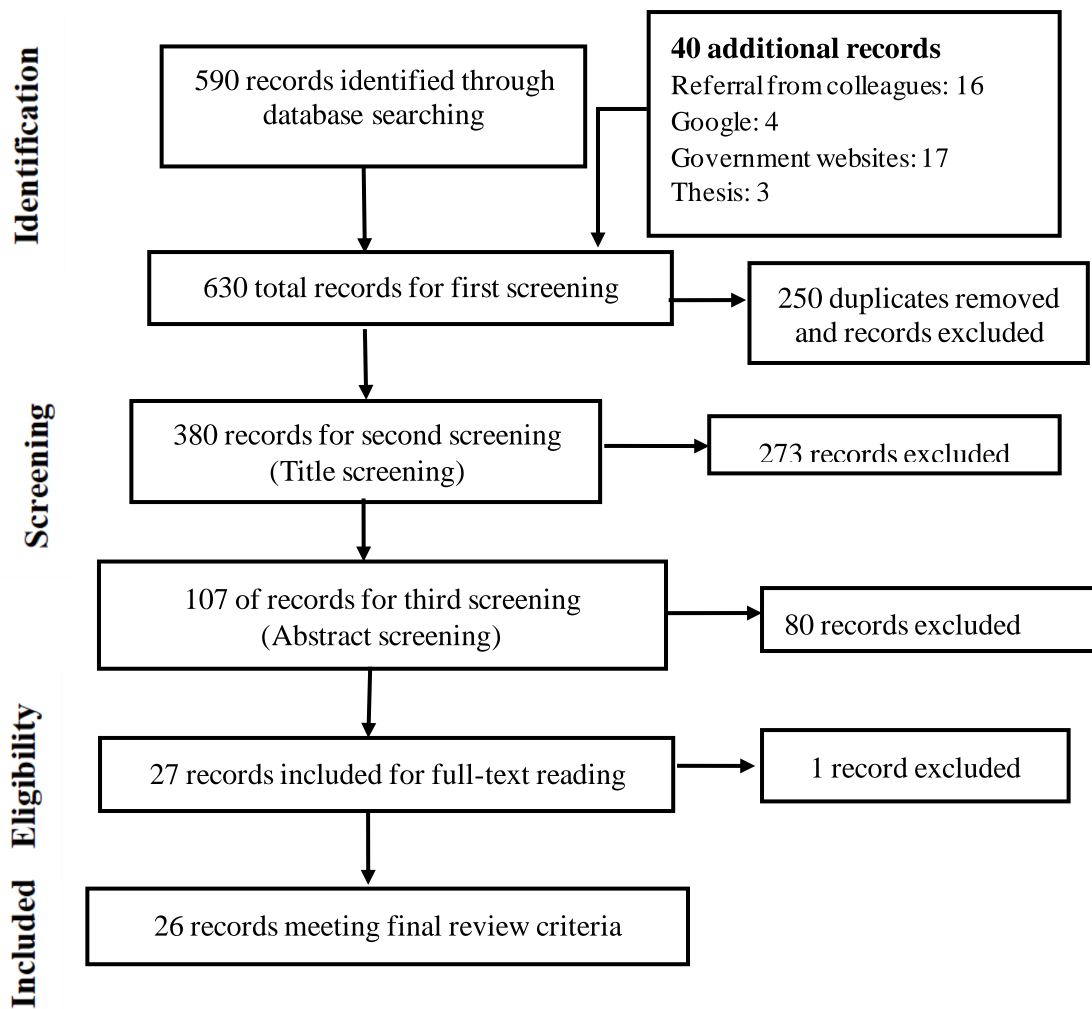
J (10) Baird et al. 2015 Perceptions of Water Quality in First Nations Communities Exploring the Role of Context	Research paper Mixed methods	Ontario - Canada Six Nations of the Grand River FN Oneida Nations of the Thames FN Mississaugas of the New Credit FN	The authors present insights into the relationship between institutions and the perceptions of water quality, management, and governance in three First Nations communities. The study confirms the importance of institutions and context for water governance.
K (11) Butler and Adamowski 2015 Empowering Marginalized Communities in Water Resources Management: Addressing Inequitable Practices in Participatory Model Building	Literature review	Cambodia, US, Canada	The article argues that anti-oppresive practices empower marginalized groups and improve stakeholder engagement (including women) in water management.
L (12) Anderson et al. 2013 Carriers of Water: Aboriginal Women's Experiences, Relationships, and Reflections	Research paper Qualitative	British Columbia, Alberta, Saskatchewan, Nunavut, Labrador, Ontario - Canada	Water perceptions and roles in Aboriginal women's lives are presented. The complex relationships among water, identities, cultural traditions, and spiritual practices are discussed.
M (13) Bakker and Morinville 2013 The Governance Dimensions of Water Security: A Review	Literature review	Not determined	The article examines debates about water security, including the political and institutional dimensions of water governance. It exposes the importance of social power and the intersections between water governance and risk-based approaches to water security.
N (14) Danard 2013 Be the Water	Critical essay	Canada	The author presents her expertise and TK as a water protector. She explains the role that women play as water caretakers according to the Ojibway Anishinaabe teachings.

O (15) Figueiredo and Perkins 2013 Women and Water Management in times of Climate Change: Participatory and Inclusive Processes	Research paper Qualitative	Canada, Brazil, Kenya, Mozambique, South Africa	Through North-South initiatives, the paper analyses the importance of community engagement and participation (particularly of marginalized groups) in water management, as a response to climate change in the context of water-related problems.
P (16) Harris et al. 2015 Women talking about water. Feminist Subjectivities and Intersectional Understandings	Research paper Qualitative	British Columbia, Ontario - Canada	Discussions between women's groups across Canada on water challenges, interests, and intersections show evidence of the ways that women relate to water and humans.
Q (17) Kevany et al. 2013 Water, Women, Waste, Wisdom and Wealth - Harvesting the Confluences and Opportunities	Introductory paper	Not determined	The paper introduces a special volume of the *Journal of Cleaner Production*. It presents multidisciplinary views of the challenges, solutions, and intersections present between water and women.
R (18) Wolfe et al. 2013 Mentorship, Knowledge Transmission and Female Professionals in Canadian Water Research and Policy	Research paper Qualitative	Canada	The article discusses mentorship and its relevance for water research and policy community (WRPC). The results confirm that long-term mentorship investments contribute directly to WRPC's resilience and ability to address water challenges.
S (19) McGregor 2012 Traditional Knowledge: Considerations for Protecting Water in Ontario	Critical essay	Canada - Ontario	The article argues that TK is relevant for decision-making in water protection. The traditional role that women play in water decision-making is presented.

T (20) Larson et al. 2011 Gendered Perspectives about Water Risks and Policy Strategies: A Tripartite Conceptual Approach	Research paper Quantitative	Arizona - US	The authors discuss differences between men and women in attitudinal judgments about water scarcity and water governance. In their rresearch, they found similarities between men and women in relation to affective concerns, perceived causes of risks, and attitudinal support for mitigation measures.
U (21) Perkins 2011 Public Participation in Watershed Management: International Practices for Inclusiveness.	Critical essay	Brazil, Canada	Watershed decision-making participatory processes from a social equity standpoint are discussed. The author presents critiques of public engagement and argues that engagement can be improved through education processes.
V (22) Harris 2009 Gender and Emergent Water Governance: Comparative Overview of Neoliberalized Natures and Gender Dimensions of Privatization, Devolution and Marketization	Critical essay	North America	The article presents a critical perspective on the gendered dimensions of neoliberal water governance regime relations from a gender perspective.
W (23) O'Reilly et al. 2009 Introduction: Global Perspectives on Gender–water Geographies	Introductory paper	Not determined	The article introduces a themed discussions on the diverse relationships between water and gender in the Global North and South. Topics like inclusiveness, feminism, collaborative work, and diversity are included.
X (24) Alston and Mason 2008 Who Determines Access To Australia's Water? Social Flow, Gender, Citizenship And Stakeholder Priorities In The Australian Water Crisis	Critical essay	Australia	The dominant factors that usually drive water decisions are economic values. The authors argue that social factors associated with water are largely overlooked in decisions about water allocation.

Y (25) Lacey 2008 Utilising Diversity To Achieve Water Equity	Critical essay	Not determined	The article asserts that the capabilities approach developed by Martha Nussbaum is relevant to examine well-being and water equity. The approach includes intangible freedoms like the exercise of social and political rights.
Z (26) Ghosh 2007 Women and the Politics of Water: An Introduction	Introductory paper	Not determined	The paper introduces the overlooked role that women play in water management. A theoretical framework for reading critical essays, narratives, and poetry on women's struggles over water is provided.

Figure 3.3.1 PRISMA Flow Chart of Literature Reviewed



3.3.1 Theme 1: The Need for Local-Participatory Water Governance Arrangements in the Global North

We noted that most of the articles reported an inequity in the access to safe drinking water in the Global North, especially for marginalized populations including Indigenous Peoples and, within this group, Indigenous women (A, B, C, E, F, H, I, N, O, Q, T, U, V, W, X, Y, Z). The sample showed a lack of equal gender participation in decision-making in the current water governance systems (A, B, D, F, K, L, O, P, Q, T, V, Y, Z). Inequities in decision-making were described as primarily due to the lack of a holistic understanding of the complexity of water. The articles reported that usually water problems are addressed from a physical standpoint such as by measuring the quality and quantity of water, but economic, social, and political challenges were excluded from the discussions (Y). Many authors in the sample called for advancements in the governance

of water (14 articles of 26) (A, B, C, E, F, H, J, K, M, N, O, T, V, W) and argued that institutions, policies, and regulations need to be aligned with the local contexts, public participation, and diverse perceptions of effective water management and governance (B, C, D, I, K, L, N, O, P, S).

The authors of most of the articles argued that water injustices in the Global North illustrate the dominance of political and economic powers over ethical principles and locally relevant participatory processes for decision-making (B, C, D, F, J, L, M, O, P, S, T, U, V, X, Y, Z). Discussion points from the sample urged scholars to propose frameworks and conceptual approaches related to good governance, adaptive governance, and collaborative governance as more inclusive, participatory, and ethical (C, K, L, M, Q, S, X, Y). Many articles explained some of these approaches, calling for basic and core principles including accountability, autonomy and self-determination, iterative social learning, power redistribution, shared responsibility, and cultural diversity recognition (A, B, C, E, F, G, H, J, K, M, U, Y). The authors posited that processes of water equity and justice should be built into existing water governance systems in the Global North.

3.3.2 Theme 2: Two Opposing Approaches for Understanding Water Governance Complexities

In the sample, two opposing approaches dominated the discussions on water governance and gender: the critique of the neoliberal approach, which sees water as a commodity; and the feminist discourse, which advocates for gender equality in water decision-making. Articles criticizing the neoliberal approach exposed the subjectivity around the price and cost of water, where price fails to incorporate social, political, environmental, and physiological values important for water users like women (P, Q, V, X). Commodification of water was seen as 'overshadowing' the social implications of water and thereby negatively affecting the traditional, cultural, and spiritual livelihoods of local women (H, L, N, Q, S, T, V, X, Z).

The feminist discourse, on the other hand, called for the incorporation of applicable strategies to promote gender equality and overall fairness in water governance (B, C, E). Some authors stated that women's identities, voices, perceptions, and resistance strategies are diverse and dynamic, reflecting the context in which women struggle (D, E, G, H, L, O, T, W, X). Several researchers suggested that such

heterogeneity opens space for empowerment and leadership, promoting alternative and holistic water governance approaches (B, E, M, O, T, X, Y, Z).

3.3.3 *Theme 3: Intersectionality in the Governance of Water in the Global North*

A selection of the sample articles referred to the intersections present among gender, socio-economic class, race, and geographic location (B, F, K, P, Q, V). The authors of these articles noted that these intersections reflect the power dynamics in decision-making, which reproduce water injustices present in the Global North. Stakeholder engagement and participation in water governance were described as foundational aspects for sustainable processes of decision-making. Nonetheless, several authors noted that participative processes were not equitable in the Global North (B, C, G, H, I, P).

Several articles pointed to the history of colonization of Indigenous Peoples, which has led to the dispossession of traditional territories, jurisdictional power, culture, voice, and worldviews. As a result of these events, Indigenous relationships with water, their accessibility to water, and the inclusion of their needs, aspirations, and rights in water decision-making have suffered (B, C, E, G, H, I, J, L, N, P, Q, S). In Indigenous cultures, gendered labour-related practices (such as parenting and work in the home) and traditional beliefs (water caregiving, community service, and environmental stewardship) give Indigenous women distinctive roles and connections with water. From these specific roles and connections, several authors in the sample described how Indigenous women integrate into their water discussions the importance of water justice and equity (B, E, P, Q). Intersectional research approaches applied in the context of water governance were not commonly found in the sample reviewed. However, although limited, the topics of race, gender, and poverty were included as discussion points within several of the articles reviewed.

3.3.4 *Theme 4: Gender Approaches Focused on Women's Roles and their Potential Innovative Role in Water Solutions*

Gender discussions in the Global North are mainly proposed based on the dichotomy between men and women (A, C, D, E, F, G, H, I, J, L, N, O, P, Q, R, S, T, U, V, W, X, Z). However, not many gender definitions were supplied (F), few studies referred to

gender inequalities unless they focused solely on women (F, G, P, S, T, V), and only one article (F) referred to men's roles performed as water employees and decision-makers. The discussions found in the sample referred mainly to the roles that women play and the issues they confront in terms of water decision-making.

Women's roles were deemed to include household sanitation and cooking responsibilities (G, H, X, Y), social management and nurturing of their communities (D, J, Q, W, X), economic management and water financing (F, P), and as reluctant participants in water decision making (D, X). Women were occasionally described as innovative leaders in water management (R, T), water educatoion, and memory keeping (A, B, C, E, I, L, N, O). The wide spectrum of roles and responsibilities that women hold in water governance across the sample complicates the debate about prescribing what women's roles with respect to water governance ought to be. Many authors decreed that women's involvement with water needs to be reflected in complex, evolving, and context-specific processes (B, L, P, Q, R, V, W, X).

A few authors argued that the essentialized notions of the relationships between women and water have poorly contributed to solve inequalities in water governance processes, such as board composition, or retaining women in water decision-making (R, X). For example, in a study conducted at the Murray-Darling Basin in Australia, researchers found that women's participation in decision-making positions was less than 30% (X). The gendered differences in water perceptions and values demonstrated that women usually understand water equity based on social experiences and values. Such understanding is crucial for well-informed and holistic processes of decision-making (P).

The findings also suggested that addressing all sorts of vulnerabilities to changing water regimes and enhancing women's involvement in water governance discussions would provide more benefits (A, B, H, Q, V). Despite participation challenges faced by women, some articles presented evidence that women have contributed innovative solutions to inequity in water governance. For example, the Sister Watersheds Education for Equitable Water Governance Project in Brazil and Canada linked universities and NGOs to work with local women, in low-income neighbourhoods in Sao Paulo and Toronto. The goal was to develop strategies and materials to address the lack of women's participation in water governance. Throughout more than 220 workshops in three watersheds (two in Brazil and one in Canada), the

materials on water and gender equity issues were developed, approved, and adjusted mainly by women as leaders or participants in the workshops (O, Q). The project brought opportunities for gender-aware community environmental initiatives, increasing water governance groups in the study areas (O).

3.3.5 Theme 5: The Recognition of Women's Holistic Knowledge

The sample demonstrated a broad scope of water knowledge held by women individually and as a social group. Case studies and international cross-sections described critical water situations that had forced women to find the best solutions for their region's and household's well-being (D, L, N, O, Q, S, T, V, X, Z). Several authors asserted that women's social and ecological knowledge extends beyond economic perspectives (D, L, N, O, P, T).

Several conceptualizations of water were presented in the sample, and these were based on women's holistic practical knowledge. Many researchers argued that women's water knowledge, often underrepresented, brought alternative values to water that would benefit water governance groups and processes (A, B, C, E, I, O, T, V, X). For example, to determine gendered perspectives on water scarcity a survey was conducted in the urban area of Phoenix, Arizona with the highest water consumption rates in the United States. The authors found that urban women have more human-ecological concerns related to water scarcity than men at a regional scale. Related to safety and parental roles, the women's concerns were based on previous knowledge about environmental problems like climate change (T). Women's experience in urban Arizona was similar to that of rural women in Australia (X), where they recognized alternative water values (especially those of a social and environmental nature) that eventually opened up alternative ways to discuss water and to make water-related decisions. The articles built the argument that women's perspectives about water governance arise from their formal and informal experiences of solving local and broad water problems (B, D, O, X). The cumulative reasoning of the authors within the sample suggested that women are inventive about solving water problems because of their pragmatic needs (L, V). Pragmatic solutions include, for example, managing women's involvement in water governance boards through succession planning and networking (X), recruiting and mentoring up-and-coming water governors (R, U), and enhancing community watershed awareness (D, O).

3.3.6 Theme 6: The Importance of Practical Interdisciplinary Work and Novel Ways of Knowledge Mobilization

Many articles presented the challenges of water governance as complex problems requiring interdisciplinary collaboration across diverse disciplines, such as engineering and physical sciences (H, I, Q, U), gender studies (G, N, P, T, V), political studies (B, M, Z), geography (C, D, W, X, Y), Indigenous studies (L, S), and the broader social sciences (A, E, I, R). While interdisciplinarity is encouraged, some authors noted that there are not enough tools to create safe spaces for dialogue to deal with gendered water problems (B, J, K, P, R, U). These authors concluded that finding opportunities for raising awareness, educating others, and advocating for gender equality in water governance requires different forms of knowledge mobilization.

Several authors recognized that there were generalized ways of reading and framing water governance guidelines (M, V, X) and delivering study findings to audiences used in water governance research (P, R, T). They also noted, however, that creating opportunities for gender -and context- enriched water governance required new forms of knowledge mobilization (B, I, P, R, X). As well, they argued that gendered perspectives on water governance and management could be shared in various ways, leading to new channels to better inform the public of gender issues in water governance. One key example was the Sister Watershed project with Canadian and Brazilian partners that continued to expand years after the pilot implementation (U).

3.3.7 Theme 7: (Un) Equal Gender's Participation and Inclusion in the Global North

Several authors from the sample pointed out that Indigenous Peoples, including women, are more frequently and dynamically voicing their rights for active participation into water decision-making (A, B, D, E, J, N, S). They also indicated an urgent need to expand the debate on gender and water governance and include intersectional frameworks to better understand gender in the discussion of water governance in the Global North. Despite emerging research, this sample suggested that gendered roles and insights in water governance required more research efforts in the Global North (A, B, D, F, G, H, L, P, Q, T, V). Without pertinent strategies and success stories from which to draw, connecting with women and building stronger and successful networks for gendered water governance approaches will be difficult (G, H, J, S, V).

3.4 Discussion

The literature identified three major points. First, at the conceptual level, there is a need to understand gender as a variable of diversity. Despite the emergence of gender as a concept, a fulsome understanding of how gender operates is hindered by the nature of the debate among authors applying the concept. Second, at the theoretical level, the application of intersectionality as a framework would aid in understanding the complexity of gender inequalities. Finally, at a methodological level, there is a need for interdisciplinary efforts to mobilize knowledge into practical actions and changes in the Global North. Each point is discussed in more depth below.

In agreement with Nightingale's (2006) argument, this review revealed that the discussion of gender in the water governance literature in the Global North mainly addresses the roles, knowledge, and participation performed by women (Themes 4 and 5). The research revealed that as women navigate water governance issues, missing is the wider-scale incorporation of women's experiences that promote local spaces for capacity building and empowerment. Also emphasized was the increased need for Indigenous women's voices to demand spaces for active participation in decision-making. Gender disparities in the Global North remain related to the roles and knowledge of women and the limited opportunities for women in water decision-making and management. The sample highlighted the complexity of water problems and participation in decision-making as an opportunity for more research, and eventually, more inclusive water governance frameworks that guide different processes of inclusion and equity.

The review identified two theoretical approaches or analytical tools guiding studies of gender and water governance: a critique of neoliberalism as the main cause of gender inequalities and feminist discourses to fight against neoliberal principles and actions (Theme 2). The combined results argue that exploration of gender inequalities may need to be broadened with the use of other theoretical approaches and diverse frameworks to analyze and disseminate results. Analytical tools that can identify the multiple social constructs in water governance that define specific conditions of inequity and inequality may also be needed. Despite articulating intersectionality as an exemplar to advance this type of work (Theme 3), its use as a theoretical lens to understand gender inequalities was limited in the sample reviewed. Some scholars in the sample identified complex water disparities and problems in water governance (Theme

1). For example, several Canadian researchers argued that the most critical water problems are in rural Indigenous communities. They referred to water issues as important threats for Indigenous Peoples, especially women as the water caregivers and those responsible for their households' well-being (Themes 1, 3, 4 and 5). In agreement with Thompson (2016), many of the authors in the sample argued that water inequalities are the result of social categories like ethnicity/race, gender, and geographic location playing out in local contexts. These authors also maintained that the intersections and interactions between these social categories reinforce existing power structures in which Indigenous Peoples, especially Indigenous women, are the most vulnerable to water risks. They pointed out that similar gender inequalities are likely to be present in other areas in the Global North, acknowledging that colonization legacies are still part of the daily life of Northern Indigenous groups. Research in other sectors that have adopted an intersectional analytical framework may help water researchers gain an appreciation of how intersectionality can be applied to water governance (e.g., Walker et al., 2019). Incorporating intersectionality as a primary theoretical framework to explore gender disparities in water governance could further support the need to change the social, economic, and political hegemonies of water access and use in the Global North.

This review also showed that research on gender and water governance in the Global North may require the application of more interdisciplinary and reflexive approaches to better connect research among different ontologies, and also among researchers and water users. Although the articles reviewed the importance of practical interdisciplinary work, a limited number of authors clearly articulated their efforts to apply interdisciplinary and transdisciplinary dialogue and tools—between them and their colleagues and between them and their research participants. Research about gender and water governance in the sample tended to be published in journals directed toward audiences (i.e., either from engineering standpoints, or gender-based, feminist, and radical geography) with related conceptual and ideological backgrounds. Research directed to specific public targets could be keeping the message trapped in specific circles, in other words research results keep "preaching to the choir" Such a dynamic could affect the widespread uptake of intersectional approaches in water governance. Language and communication problems among different sciences could furefrther limit interdisciplinary research and publication efforts. Academics, however, may further

their knowledge by developing novel methods and language bridges when discussing and advancing equitable water governance (Themes 5 and 6).

Finding novel ways to mobilize knowledge to distribute gender equality research results beyond the academic world are also needed in research on water governance and gender in the Global North. Authors in the sample referred to the importance of using participatory approaches; however, only five articles referred to alternative methods that make research accessible to non-academics. For example, Hania and Graben (2020) advocated for storytelling as a political and legal tool that facilitates dialogue, while revitalizing women's responsibility and authority in water governance. They spoke of stories "as a cognitive device that enables thinking and interactive listening" (p. 323). Incorporating new unconventional tools of knowledge sharing —like storytelling— provide means for individuals and communities to actively participate in and contribute to research rather than being just research objects. The results of this work suggest that researchers working on water governance could break the tradition of consistently putting forward hierarchical western perspectives as key results in favour of sharing and advocating for the use of new gender-sensitive knowledge on water governance to promote social change. This type of change may be crucial in the Global North, considering that Indigenous populations have suffered disproportionately there from water problems.

Finally, it is important that scholars working on water governance be mindful of the lack of attention given to gender inequalities in the Global North. Traditionally, more research on gender has been developed in the Global South (Sinharoy & Caruso, 2019) than in the North. The results obtained in this review, however, showed that water equity and fairness in the Global North have still not been achieved. Marginalized groups in these geographic areas lack political and social pathways for participation and decision making, and, at the same time, are the ones most exposed to water risks (Jackson, 2018). Nonetheless, the poor and limited inclusion of gender into a broader analysis is not a new finding in the environmental realm in the Global North. Reed and Christie (2009) argue that "researchers focused on problems in First World settings continue to omit gender (…) as a central construct in interpreting how power circulates and affects environmental change, conflict, and management" (p. 247). Ten years later this gap is still present for water governance, inviting researchers to expand perspectives and be aware of gender disparities in all contexts.

3.5 Conclusions and Recommendations

As a summary of this scoping review, water governance research and analysis in the Global North excludes gender as a critical variable for reflection and as a key determinant of enhanced governance. The limited documented experiences of women in the context of water governance calls into question whether environmental justice has been achieved for people living in the Global North. The sample showed that the Global North has become a spectator of the gender problems happening in the South without reflecting on the complexities present in the North in terms of meaningful inclusion of gender, social-political class, and ethnicity. Moreover, research and publication on gender and water governance in the Global North needs to be expanded, acknowledging that gender equality has not been achieved for all people, especially for Indigenous women. A few scholars, mostly women, are working in the field and publishing. Yet, even among the small sample, less than half are aware of and cite each other's work. Encouraging funding agencies to incorporate gender as a transversal or intersecting variable in future research on water governance could be key to increasing the number of studies, as well as scholars from different backgrounds involved.

Arising from our research, we make three recommendations for academic researchers, government agencies, and water governance organizations. First, academic researchers need to include intersectional frameworks in their analysis to recognize the diverse social categories influencing water inequalities, acknowledge gender disparities as a present problem in water governance in the Global North, and reflect on the role of power that researchers play as either the 'creators' or the 'facilitators' of new knowledge and approaches to disminish social inequalities, including gender ones. Overcoming disciplinary barriers and using available and new channels to share information and measure progress are part of this recommendation. Second, government agencies in the Global North should consider gendered disparities, knowledge, and innovation when distributing directives, funding, and resources for water governance in specific regions and watersheds. Third, water governance organizations would benefit from intersectionality approaches and frameworks while embracing water challenges at local levels to create pathways for gender inclusivity in water governance decision-making. The findings of this work point to ongoing discrepencies in the inclusion of gender in water governance in practice and in research and offers recommendations to address them.

PREFACE TO CHAPTER 4 – HONOURING WATER: THE MISTAWASIS NÊHIYAWAK WATER GOVERNANCE FRAMEWORK

To achieve consensus, water governance requires shared processes of decision-making among those involved in and affected by water conflicts. Collaborative Water Governance is a suitable framework for holistic, inclusive, representative, and legitimate governance arrangements in Indigenous lands. However, collaborative approaches can fail when Indigenous principles, ontologies, epistemologies, and self-determination are omitted from the water governance process. Using a case study in Saskatchewan, Canada, this paper presents "The Mistawasis Nêhiyawak Honour the Water Governance Framework" as a collaborative water governance model that enhances long-term relationships, promotes processes of shared decision-making, encourages opportunities for bridging different knowledge systems, and legitimizes Indigenous self-determination. This article contributes to the discussion on the respectful inclusion and representation of Indigenous ontologies, epistemologies, and self-determination in collaborative water governance approaches.

This chapter reveals that:

- For the case study selected, water governance needs to be built on Indigenous worldviews, culture, values, and self-determination confronting hegemonic water governance structures and systems in Canada.
- Mistawasis Nêhiyawak water ontologies frame water governance from principles and actions that reveal honour and respect for water, contrary to western utilitarian water conceptions.
- Shared dialogue, or dialogue where complementarity exists between Indigenous Knowledge and western scientific knowledge, is central in water governance.
- Dialogue should open equal spaces for different ways-of-being-with-water, representation, participation, and learning opportunities in the governance of water.
- The Mistawasis Nêhiyawak Honour the Water Governance Framework as a bottom-up governance approach represents the opportunity for Mistawasis Nêhiyawak to de-construct hegemonic colonial water governance approaches towards shared processes of participation, decision-making, and responsibility.

Overall, this chapter shows that collaborative water governance provides spaces for de-colonized water governance in Canada, as long as the system can assert Indigenous self-

determination, legitimize Indigenous Knowledges, and recognize Indigenous Peoples' identity and cultural backgrounds.

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CHAPTER 4 – HONOURING WATER: THE MISTAWASIS NÊHIYAWAK WATER GOVERNANCE FRAMEWORK

Abstract

Collaborative water governance in Indigenous territories requires the building of a Nation-to-Nation relationship where different water worldviews and knowledges are acknowledged, valued, and included in water governance. This article presents the Mistawasis Nêhiyawak Honour the Water Governance Framework, an alternative collaborative water governance approach in Saskatchewan, Canada. The Nêhiyawak principles, identity, knowledge, and self-determination are its foundation. Equitable dialogue is the central axis. The framework represents an alternative water governance structure to the current Canadian system that may more effectively respond to the water challenges of this First Nation. This framework supports the appeal from Mistawasis First Nation and other Nations for the de-construction of hegemonic colonial water governance systems and the co-construction of shared processes of water participation, decision-making, and responsibility.

4.1 Introduction

Water problems in Indigenous territories in Canada represent a constant challenge for many Indigenous Peoples, including First Nations, Inuit, and Métis. Indigenous Peoples' physical health and their social, cultural, and spiritual well-being are negatively impacted by these water challenges (Baird & Plummer, 2013; Basdeo & Bharadwaj, 2013; Bradford et al., 2017). Many water problems can be attributed to failures of the Canadian water governance system, a system that has been characterized by complex institutional arrangements and power conflicts (Arsenault et al., 2018; Von Der Porten & De Loë, 2014b).

In Canada, water governance works through a decentralized and multi-jurisdictional system that constitutionally recognizes the provincial governments as authorities for waters that lie solely within a province's boundaries. However, the federal government is considered the water authority on First Nations lands. This institutional fragmentation has resulted in inter-governmental conflicts, duplication, overlapping responsibilities, ineffective means of data collection, poor water monitoring, and negative impacts on Indigenous Peoples' well-being (Bradford,

Ovsenek & Bharadwaj, 2017; Bakker & Cook, 2011; Baird & Plummer, 2013). In this complex system, colonial hegemonies exist, and Indigenous Peoples' worldviews, knowledge, voices, and needs are underrepresented, ignored, and excluded. (Day et al., 2020; Jackson, Stewart, & Beal, 2019; Memon & Kirk, 2012; Van Tol Smit, de Loë, & Plummer, 2015; Von der Porten & De Loë, 2013a; Von der Porten et al., 2016; Von Der Porten et al., 2015; Wilson et al., 2019). To meet Indigenous Peoples' needs and aspirations, the Canadian water governance system needs to change. Modifications to the system would provide an opportunity for the co-existence and co-interaction among different ways-of-being with water (Wilson & Inkster, 2018).

Collaborative strategies for water governance, built upon formal approaches to collaborative governance (Koebele, 2015; Poelina, Taylor, & Perdrisat, 2019; Simms, Harris, Joe, & Bakker, 2016; Von der Porten et al., 2016), have been proposed as suitable approaches for equitable water arrangements (Harrington, 2017). Collaborative water governance is a mixture of collaboration (cooperation among stakeholders who voluntarily participate in public decision-making and meet common goals) and water governance (how societies arrange water actions and decision-making at different scales, levels, and through different mechanisms) (Brisbois & De Loë, 2016a; Orr et al., 2015; Von der Porten & De Loë, 2013a). Collaborative approaches are defined as holistic, inclusive, and representative (Harrington, 2017). Collaborative arrangements include "face-to-face deliberation, shared learning, a willingness to reconsider assumptions, pooling of resources, construction of long-term relationships, and consensus-focused decision making (Brisbois & De Loë, 2016b). Collaborative water governance approaches are seen as attempts to "operationalize" water governance in practice (Harrington, 2017).

Collaborative approaches to governance are commonly cited as appropriate theoretical lenses to frame water governance discussions in Indigenous territories (Jackson et al., 2019; Poelina et al., 2019; Von Der Porten et al., 2015). Collaborative approaches are known to better address representation conflicts while improving the durability and acceptance of collective decisions (Jackson et al., 2019). Although collaborative approaches to water governance are recognized as constructive (Brisbois & De Loë, 2016a), collaborative efforts fail when local Indigenous water governance goals, governance principles, and self-determination are not recognized (Von der Porten & De Loë, 2013a). Inadequate or inappropriate inclusion of Traditional Knowledge

(TK), insufficient dialogue, and limited Indigenous representation in water decision-making also affect collaborative water governance efforts with Indigenous Peoples (Jackson et al., 2019). When TK and Indigenous worldviews are omitted in local water governance frameworks, gaps in water policy are often identified (Anderson et al., 2013; Maclean, 2015; McGregor, 2012, 2014; von der Porten et al., 2016)

Both in theory and practice, collaborative water governance requires the building of genuine relationships with Indigenous Peoples from a Nation-to-Nation perspective and the inclusion of Indigenous Peoples' self-determination, knowledge, and worldviews (Von der Porten & De Loë, 2013a). The recognition of alternative water governance models built on Nation-to-Nation relationships is needed. Nations are demanding that TK form an integral part of water governance because it brings insights and values that are missing in the water governance dialogue (McGregor, 2014). Alternative models and holistic elements to frame water governance are needed to open spaces for shared dialogue and to create meaningful collaborative water governance approaches that are respectful of Indigenous Peoples' historical water demands and needs.

The purpose of this article is to contribute to the discussion on collaborative water governance through the presentation of a collaborative water governance framework co-developed with Mistawasis Nêhiyawak (MNFN) in Saskatchewan, Canada. The MNFN Honour the Water Governance Framework represents an alternative water governance structure to the Canadian system that may more effectively respond to the water challenges in MNFN. The MNFN Honour the Water Governance Framework affirms the importance of holism, inclusiveness, and representation. It presents and represents the Nêhiyawak way-of-being with water, their knowledge, and their interconnected relationships with water. The meaning of water governance for the people of MNFN is represented through a symbolic framework that promotes collaborative water governance by honouring water.

This paper begins with a theoretical discussion of collaborative water governance and decolonized approaches for opening paths for shared dialogue. The importance of water ontologies and epistemologies for decolonized collaborative water governance is discussed. After the discussion about theory, the case study and methodology are presented, followed by an introduction of the MNFN Honour the Water Framework. The meaning of water is presented from the voices of MNFN

members, and each framework element is described. The framework is discussed as an alternative to the current water governance system and as a way to de-colonize collaborative water governance. We argue that when decolonized paths are opened to reconcile Indigenous and non-Indigenous worldviews and perspectives, positive outcomes for holistic, collaborative water governance systems in Canada may be achieved.

4.2 Collaborative Water Governance from a Decolonized Perspective

In this section a brief definition of collaborative water governance is discussed from decolonized approaches needed in the context of Indigenous Peoples. Part of the rationale for a collaborative approach infers the need to include different types of knowledge for consensus. Dialogue is proposed as the tool that can help to bridge different knowledge systems and worldviews into water decision-making.

4.2.1 Defining Collaborative Water Governance

Water is a 'multipurpose flow resource,' whose benefits or harms cross political boundaries, affecting different "users, sectors and scales of governance" (Baird & Plummer, 2013, p. 277). To manage this multipurpose flow resource, water governance requires systemic approaches that promote active stakeholder participation, demonstrate the flexibility of governance institutions, and are sensitive to local contexts (De Loë & Patterson, 2017; Schulz et al., 2017). One systemic approach is collaborative water governance. This approach comes from a political perspective that points to formal arrangements among state and non-state actors, who voluntarily come together to participate in public decision-making (Orr et al., 2015). The rationale for a collaborative approach is that by using shared processes of decision-making, actors involved in and affected by water conflicts can achieve consensus by incorporating different types of knowledge (Brisbois & De Loë, 2016b; Von der Porten et al., 2016; Von Der Porten et al., 2015). Consensus can be achieved when guiding principles like representation, inclusiveness, fairness, equity, enduring relationships, and face-to-face interactions are involved (Brisbois & De Loë, 2016b; Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014b).

Collaborative water governance represents an opportunity to actively include Indigenous Peoples in solutions to water conflicts. When Indigenous governance foundations are excluded, collaborative solutions can fail. For example, Wilson (2020) argues that placing Indigenous Peoples as stakeholders in the governance system reinforces colonial relationships based on power asymmetries. Several scholars have argued that Indigenous Peoples should not be seen as stakeholders but as rights holders with legitimate inherent rights for authority and power of decision-making on a Nation-to-Nation basis (Castleden, Hart, Cunsolo, Harper, & Martin, 2017; Von der Porten & De Loë, 2013a; Von Der Porten, De Loë, & Plummer, 2015; Wilson, 2020). The reassertion of Indigenous self-determination provides the political framework for the recognition and inclusion of Indigenous worldviews and knowledge in water decision-making (Bradford et al., 2017; De Loë & Patterson, 2017; Montgomery et al., 2015; Von der Porten & De Loë, 2013a; Von der Porten et al., 2016). To develop constructive de-colonial venues for trustful relationships and shared arrangements in water decision-making, it is essential that Indigenous self-determination, worldviews, ontologies, and knowledge systems be recognized (Von Der Porten & De Loë, 2014b; Von Der Porten et al., 2015). In addition to this recognition, decolonized collaborative water governance approaches require spaces for co-building formal arrangements of shared decision-making and a commitment to co-build long and trustful relationships between Indigenous Nations and water stakeholders. Decolonized efforts also include the de-construction of the meaning of water. When Indigenous water worldviews are included in water governance, relationships between water and humans that are interconnected, respectful and reciprocal become the foundational guidelines for water arrangements (Arsenault et al., 2018).

4.2.2 Dialogue as a Knowledge Bridge in Decolonized Collaborative Water Governance

Dialogue is a strategic tool for creating spaces of encounter between different epistemologies and worldviews (Arsenault et al., 2018; Leff, 2003; Martínez-Torres & Rosset, 2014). Dialogue has been defined as the space where different knowledges and ways of knowing are shared and exchanged on a horizontal basis without imposing one knowledge system over the other(s) (Martínez-Torres & Rosset, 2014). Dialogue requires open spaces where different worldviews, knowledges, experiences, and

interests bridge with western sciences (Leff, 2003). This dialogue empowers and respects communities and their local knowledge (Day et al., 2020), as well as promoting reciprocal learning processes, where knowledge flows back and forth between learning partners (Arsenault et al., 2018).

Bridging Indigenous Knowledge and western scientific knowledge promotes dialogue in equal conditions (Castleden et al., 2017; Johnson et al., 2016), where social justice, identity, and self-determination of Indigenous Peoples are recognized (Bohensky & Maru, 2011). Bridging knowledge systems highlights mutual benefits, not differences, while collectively people work towards resilience, holistic environmental understanding, synergies, and complementarities (Berkes, 2012; Bohensky & Maru, 2011; Hatcher, Bartlett, Marshall[13], & Marshall[14], 2009; Plummer et al., 2017; Tengö, Brondizio, Elmqvist, Malmer, & Spierenburg, 2014), all of which can improve collaborative efforts in the governance of water.

4.3 Decolonizing Collaborative Water Governance in Canada: What's Currently Missing?

In this section the role that Indigenous water ontologies and epistemologies play in decolonized approaches to collaborative water governance are discussed. Different ways-of-being-with water set different parameters in how people understand and relate to water. It has been argued that Indigenous Peoples water ontologies and epistemologies are missing in the current water governance system challenging meaningful collaborative processes of water decision-making.

4.3.1 Indigenous Water Ontologies as the different ways-of-being-with water

Contributing to water problems and conflicts is a failure to recognize and understand multiple water ontologies—a significant issue in the Canadian water governance system (Brisbois & De Loë, 2016a; Von der Porten & De Loë, 2013b, 2013a; Von Der Porten & De Loë, 2014b, 2014a; Von Der Porten et al., 2015; Yates, Harris, & Wilson, 2017). These water governance problems have, in part, been attributed to the absence of discussions about what water ontologies mean in the context of water governance. As

[13] (Mi'kmaw)

[14] (Mi'kmaw)

Harrington (2017) writes "The overall absence [of water ontologies] (…) remains a significant oversight, given how important it is in establishing a credible understanding of how water governance is imagined, understood and performed" (p. 262). How people recognize, perceive, relate, live with, and value water may reveal a way to recognize, perceive, and live water governance (Wilson et al., 2019; Wilson & Inkster, 2018; Yates et al., 2017) because acknowledging multiple water ontologies can help to dismantle dominant forms of water governance based on the specific meaning and use of water. As Harrington (2017) states "Collaboration requires a shared ontological understanding of water, to determine what exactly is being negotiated. In other words, a shared language of water must be present for collaborative practices to be envisioned and undertaken" (p. 263).

Water ontologies are understood as multiple water realities or ways of being-with-water (Harrington, 2017; Wilson & Inkster, 2018; Yates et al., 2017). Modernist western ontologies are rooted in scientific rationalism and conceive water as a resource owned, used, and manipulated by humans (Harrington, 2017; Wilson & Inkster, 2018; Yates et al., 2017). They differ drastically from Indigenous water ontologies, which are relational (Datta, 2015), holding that water is a living spiritual entity that connects (water-as-lifeblood), sustains life, and provides healing to people (Baird & Plummer, 2013; Basdeo & Bharadwaj, 2013; McGregor, 2014; Von der Porten et al., 2016; Wilson & Inkster, 2018). Indigenous water ontologies should be understood beyond water perceptions or cultural perspectives, as they are realities built upon historic, cultural, and material processes (Blaser, 2014; Yates et al., 2017).

Indigenous water ontologies are marginalized in or absent from the Canadian water governance system, where the modernist water ontology is dominant (McGregor, 2014; Yates et al., 2017). Because modernist water ontologies dominate water governance in Canada, there are few opportunities for collaborative efforts. Collaborative water governance involves shared understanding and discourses of what water is, and from this understanding how relationships with water are built. Some have argued that if this shared understanding is absent then collaborative efforts will remain inefficient at addressing complex water issues in the context of Canadian water governance (Harrington, 2017).

4.3.2 Indigenous Knowledges importance and challenges in Collaborative Water Governance

Complex water problems affecting different people demand solutions based on different types of knowledges including Indigenous Knowledges (Von der Porten et al., 2016). Indigenous Knowledges are defined as holistic ways of knowing that open space for sustainable environmental governance models (including water governance) that acknowledge Indigenous Peoples' demands and inherent rights (Tengö et al., 2017; Von der Porten et al., 2016). Indigenous Knowledges symbolize collective adaptive processes that gather practices, interactions, and interconnections between alive and non-alive beings in equal relationships (Battiste[15], 2008; Golden et al., 2016; Hart, 2010; Kealiikanakaoleohaililani & Giardina, 2016; Muir et al., 2010). Indigenous Knowledges based on ethical arguments seek respectful and responsive spaces for the articulation of Indigenous priorities and needs in water governance (Castleden et al., 2017; Wilson, Todd Walter, & Waterhouse, 2015).

Challenges, however, are ever present: "Balancing multiple forms of knowledge remains a challenging component of water governance as many water worldviews exist, sometimes in complete opposition to one another" (Simms & de Loë, 2010, p. 12). Water decision-making is based on western scientific knowledge (Castleden et al., 2017; Von der Porten et al., 2016), disregarding holistic contributions of Indigenous Knowledges (Maclean, 2015). The failure to acknowledge Indigenous Knowledges' inherent value perpetuates power asymmetries (Mignolo, 2009; Rathwell, Armitage, & Berkes, 2015). Scholars argue that too few pragmatic bridges have been built to interconnect oral and written forms of knowledge in the discussions of water governance (Castleden et al., 2017; Von der Porten et al., 2016), thereby undervaluing Indigenous oral experiences in conversations and water governance decision making (Day et al., 2020).

4.4 Methods

In this section the methodology and methods used to develop this research are explained. The section starts by describing the setting where this research was

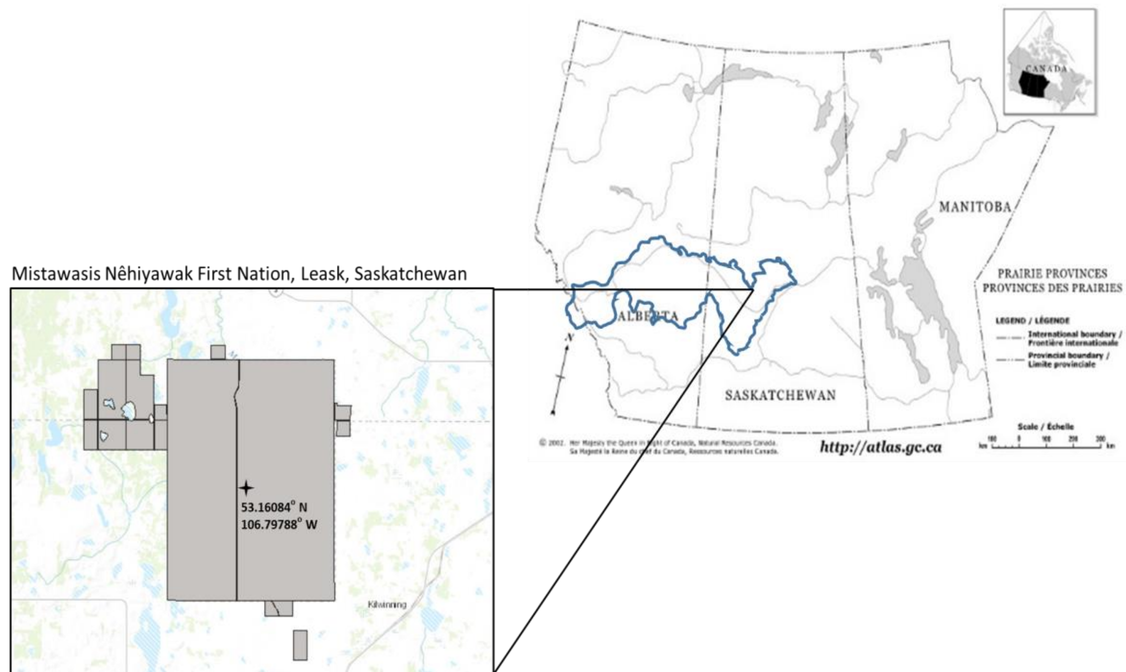
[15] (Mi'kmaw)

developed, and then continues with the researchers' positionality and ethical considerations. The methods of data gathering are described along with the data analysis process.

4.4.1 Research setting

Located in Treaty 6 Territory in Saskatchewan, Canada, approximately 77 kilometers southwest of the city of Prince Albert and 120 kilometers north of Saskatoon, the Cree First Nation MNFN covers an area of 120 square kilometers, with 681 inhabitants registered in 2016 (Statistics Canada, 2016). MNFN is within the North Saskatchewan River Watershed (NSRW, see Figure 4.4.1) (Saskatchewan Watershed Authority, 2007). The NSRW covers an area of 41,000 km^2 and includes 51 Rural Municipalities, 29 First Nations lands, and 17 reserves. Beginning in the Columbia Icefields in the Rocky Mountains of Alberta, the North Saskatchewan River flows north-easterly towards the South Saskatchewan River and through Saskatchewan, travels across Manitoba, and drains into Hudson's Bay. In Saskatchewan, the NSRW includes the Battle River, Eagle Creek, and the Goose Lake internal drainage basin while the physio-geographic regions identified in the province are the Missouri Coteau Upland, the Saskatchewan Upland, and the Saskatchewan Rivers Plain where MNFN is located (Saskatchewan Watershed Authority, 2007). The 2013 NSRW Environmental Risk Scan and Assessment identified droughts and flooding due to runoff from intense thunderstorms as two main hydrological concerns (Council, 2013).

Figure 4.4.1 Mistawasis Nêhiyawak in Canada (Treaty 6)



MNFN experienced extreme flooding in 2011 and 2014, the result of heavy snowfalls in winter coupled with early rapid snowmelt and heavy rains in spring. The First Nation experienced elevated water levels, damaging the dams and levees used to prevent flooding impacts (Thapa et al., 2019). The well-being of MNFN members has been negatively impacted by the contamination of water sources, deterioration of riparian habitat and road infrastructure, and displacement of people from their homes (Dawe, 2016; Thapa et al., 2019).

In the NSRW, water decision-making is shared between the Water Security Agency (provincial government), local rural municipalities, Indigenous communities, and landowners on a microscale (conversation with Katherine Finn-NSRCB Manager, Aug 2019). However, MNFN has water decision-making powers only within the boundaries of their reserve and treaty entitlement lands. Outside the reserve, MNFN's influence on water decisions depends on their leadership and capacity to build partnerships with neighbouring municipalities and other water stakeholders in the watershed. As a result of this water governance reality, MNFN's water issues require approaches based on collaboration with other water stakeholders, shared capacity, and shared resources.

Following the floods of 2014, MNFN Chief and Council invited federal and provincial government organizations to MNFN to initiate conversations and to develop partnerships to find, resolve, and apply solutions to their flooding issues. These organizations included: Environment and Climate Change Canada (federal), Indigenous Services Canada (federal), and Water Security Agency (provincial), rural municipalities Leask and Canwood (rural municipalities), Saskatchewan Research Council (a provincial Treasury Board Crown Corporation), North Saskatchewan River Basin Council (a non-profit river basin council), and the School of Environment and Sustainability-SENS at the University of Saskatchewan-USASK (an academic institution). Four meetings were held in the Nation over a year. As an outcome of these meetings and with the support of invited partners, MNFN developed a three-year project called "Honour the Water." This project, initiated in 2015, focused on source water protection, drainage studies, and the implementation of innovative drainage systems for the prevention of flooding in the Nation.

Growing beyond the initial goals, The Honour the Water project transformed into a mission to develop holistic water governance and management approaches for the benefit of water and the Nation's people. The project created opportunities for MNFN to engage and develop long-term partnerships, and long-lasting friendships with non-Indigenous water stakeholders in the NSRW who were interested in its governance. Partnerships with the North Saskatchewan River Basin Council (NSRBC) and the SENS led to the co-development of successful proposals addressing climate change, health, and flooding. The co-development of the water governance framework, described herein, was one such project initiated through partnership development and directly contributing to the mission of honouring water in the Nation.

4.4.2 Positionality and Building Relations

Driven by shared interests, four authors participated in this research. The first author (Mora) is a scholar from Latin America who self-identifies as 'mestiza,' acknowledging the blend of Indigenous and Spanish roots brought about by colonization in South America. Her work experience with Indigenous communities in her home country demonstrates her perspectives and critical reflections about diversity and her recognition of different ways of being, thinking, learning, and living. The second author (Johnston) is an Indigenous leader from MNFN, co-researcher for this research, and

lead of the Honour the Water project. As a descendant of Chief Mistawasis who first signed Treaty 6, Johnston believes in and works towards real processes of reconciliation and partnerships with non-Indigenous people as means to heal colonization legacies. The third author (Watson) is a young women leader and member of MNFN and the second co-researcher for this research. Watson's interest in the traditional relationship between water and women in her community guided her to learn how to honour water from her Knowledge Keepers. Also, part of the Honour the Water Project, she is a member of the Land Committee. The fourth author (Bharadwaj) is a non-Indigenous scholar who has developed research relations in environmental health with various First Nations and Indigenous groups over the past 20 years.

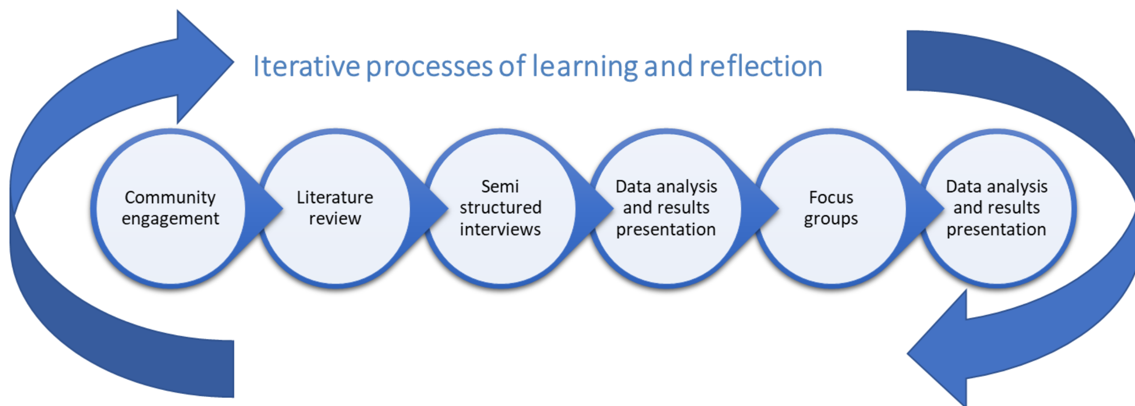
The research was co-developed and built on trustful relationships with people in MNFN. The first and fourth authors in the research are considered 'outsiders' as they are non-Indigenous people. From an outsider positionality, inherent western scientific biases might have influenced the interpretation of the knowledge shared and data collected throughout the research process. Nonetheless, the two Indigenous co-researchers were mindful of possible bias while developing participative, trustful, and respectful approaches along the research process. The first author, who collected data in MNFN together with the two co-researchers, engaged with people in the Nation by sharing common backgrounds and stories of marginalization and struggles in colonized societies. Shared experiences opened spaces for dialogue and empathy that helped to engage, connect, and build solid and lasting friendships. A strong friendship among the research team members was developed before the research began. Time to evolve and develop friendships opened many opportunities to learn about MNFN history, culture, protocols, and aspirations for the well-being of their people and their land. Participation in cultural events (e.g., Pow Wow, Treaty Day, and Summer Cultural Camps), activities in the schools, and various meetings occurred during this pre-research phase. This period provided space for horizontal and respectful dialogue along our research journey.

4.4.3 Research Design and Ethical Consideration

Delineated within qualitative transformative research (Kovach, 2009), this research was guided by the principles of CBPR, prioritizing the community's issues, interests, and goals as the main objectives in all stages of the research (Adams et al., 2014). The research process, co-developed to meet the needs of MNFN, consisted of six sequential

stages: community engagement, literature review, semi-structured interviews, data analysis and presentation to MNFN member participants, focus groups, and data analysis and presentation to co-researchers (See Figure 4.4.2). Iterative processes of learning and reflection were incorporated within the six stages to create spaces for communication and learning opportunities among researchers, co-researchers, and research participants (Ball & Janyst, 2008).

Figure 4.4.2 Research Design – Six Sequential Stages



The research team presented the research goals, objectives, and process to Chief and Council and MNFN members before engaging community members and initiating research activity. This research was approved by the Behavioural Research Ethics Board of the University of Saskatchewan (certificate number REB-BEH-17-237).

4.4.4 Data Gathering Methods

Data was gathered through a semi-systematic literature review, semi-structured interviews, and focus groups. Data gathering was conducted by the first author (Mora) and supported by the second and third authors (Johnston and Watson).

Literature Review. A semi-systematic literature review was conducted to examine published literature on collaborative water governance. Not intended to find all empirical evidence on a specific topic, semi-systematic reviews "look at how research within a selected field has progressed over time or how a topic has developed across research traditions" (Snyder, 2019, p. 335). The main question guiding the review was: What does collaborative water governance entail in Canadian Indigenous contexts? The review objectives were to understand the meaning of collaborative water governance

and to identify key aspects or elements of collaborative water governance. This information was shared with MNFN participants to initiate conversations about collaborative water governance and as a starting point to co-build a water governance framework.

The review was conducted from May to August 2018 using four academic databases (Web of Science, Sci Verse Scopus, Academic Search Complete, and Google Scholar) and key terms included 'water governance' and 'collaborative.' Duplicates were removed, and the review involved a two-step screening process. First, records with two or more keyword combinations in the title and/or abstract were selected. Second, articles were limited to peer-reviewed, English language articles on the Canadian context published between 2000 and 2018. Records were exported to Microsoft Excel (Microsoft Corporation 2013) for full text review. The questions used to select the final sample were: i) Is collaboration an approach used to discuss water governance? ii) Is participation and/or partnership described as part of collaborative water governance? iii) Is collaborative water governance linked to bridging knowledge systems? iv) Does the article refer to self-determination? v) Does the article mention reconciliation in the discussion? Main themes were subsequently identified.

Semi-structured Interviews. Semi-structured interviews were conducted between September 2018 to January 2019 to gather information on the meaning of water and water governance, water issues and challenges experienced, participation in water decision-making, and water responsibility. Thirteen community members (eight males and five females) were purposefully selected by the co-researchers. Among the participants were local leaders, Elders, and community members leading departments or projects, and water managers. Each participant was offered tobacco as a symbol of gratitude for their time and knowledge shared. Interviews took place at locations where participants felt most comfortable such as the Health Centre, the Band Office, and the Buffalo Iron Centre. Interviews were audio-recorded, transcribed, and provided back to participants for review and validation.

Focus groups. Two focus groups were conducted in 2019, one in March and one in May. The first was held at the Buffalo Centre in MNFN. Eight adults aged 20 to 70 years participated: four males and four females. They were purposefully selected by the co-researchers. Participants included local leaders, including women, Elders, and members who participated in interviews. Some new participants were also invited. The

first focus group was initiated with a presentation of the key elements of collaborative water governance identified through the literature review. A conceptual model of these key elements was presented (see Figure 4.4.3) to initiate conversations about collaborative water governance. As well, the interview results on the meaning of water governance, dialogue, partnerships, water responsibilities, and participation were shared. Following these presentations, participants engaged to co-build the MNFN water governance framework. The process for co-creating this water governance framework required finding symbolic representation of concepts that were abstract to participants. The initial question guiding this focus group activity was: If there is a symbolic representation of water governance, what should it look like? Participants identified key water governance elements and corresponding symbolic representation for these key elements.

Figure 4.4.3 Collaborative Water Governance Conceptual Model

The second focus group took place in the Mistawasis Nêhiyawak High School, with eight students from Grade 12 (six girls and two boys). Participants were purposefully selected by the co-researchers and the high school principal. The main purpose of this focus group was to bring younger voices into the framework. The framework co-built with participants in the first focus group was presented to the youth for discussion. The questions guiding the youth discussions were: i) What does water mean to you? ii) What

should water decision-making look like for you? iii) What elements are important in the framework? iv) What elements are missing in the framework? All focus group participants contributed to the co-creation of the water governance framework for MNFN. Focus groups were audio-recorded, and notes were taken by the first author (Mora) using flipcharts. The focus group data was transcribed and provided back to the participants for review and validation.

Participant Observation. To collect systematic descriptions of different events at MNFN, participant observation was applied, which demanded an open and non-judgmental attitude while keeping the interest on learning more about MNFN history, worldviews, culture, and aspects of governance. The observer was the first author (Mora), who used active looking and detailed notes as the main strategies. Participant observation took place mostly during the community engagement stage at cultural events (e.g., Pow Wow, Treaty Day, and Summer Cultural Camps), activities in the schools, and various meetings in the Nation. Participant observation was used to identify different relationships between people in MNFN and outside the Nation. This method also helped the researcher (Mora) to get a feel for how MNFN is organized, the role of their Chief and Council members, and who participates at the different events. Participant observation also helped in understanding the cultural protocols people in MNFN follow and consider important, especially when outsiders visit the Nation. This method provided data that helped the first author (Mora) to become familiar with people in MNFN and to be sensitive to what people in this Nation believe is important for their people and their land.

4.4.5 Data Analysis

Two stages of data analysis were performed: First, the literature was analysed, followed by an analysis of the information gathered in interviews and focus groups. The initial analysis in both stages was performed by the first author (Mora), and results were subsequently shared with co-researchers and research participants for validation.

Literature Review. Qualitative analysis used inductive approaches to identify the meaning and theoretical components of collaborative water governance in Canada. A final sample of 208 records was reviewed and imported to NVivo software. Main theoretical themes (e.g., collaboration, self-determination, Indigenous ontologies and epistemologies, participation, relationships, partnerships, and colonization legacies)

were identified, providing the theoretical basis needed to inform interviews and focus group activities. Four elements were found to be key to collaborative arrangements for the achievement and practice of decolonized efforts in collaborative water governance: the recognition of First Nations' self-determination, the inclusion of different ontologies and knowledge systems, collective formal arrangements for shared decision-making, and efforts towards co-building long-term and trustful relationships. The authors developed a conceptual model, whose elements were not considered prescriptive. Additional elements could be suggested by water stakeholders and rights' holders at specific times or geographic locations.

Interviews, Focus Groups, and Participant Observation. Inductive qualitative approaches were applied to data gathered through interviews, focus groups, and participant observation. Transcription data collected from the interviews, focus groups, and notes from observations made were imported to NVivo qualitative research software package, version 8.0. (July-August 2019). The authors used inductive approaches in the analysis by labelling main units and grouping them into themes (e.g., the meaning of water, water decision-making, local leaders, government roles, community participation, Nêhiyawak culture, flooding, drinking water, lakes, and TK). Additional themes obtained through the literature review were added (e.g., colonization legacies, power asymmetries, blending knowledge systems, collaborative water governance, water ontologies, and Indigenous Knowledge). Themes were reviewed by the second and third author (Johnston and Watson).

4.5 Results

4.5.1 The Mistawasis Nêhiyawak Honour the Water Governance Framework

The framework was named 'The Mistawasis Nêhiyawak Honour the Water Governance Framework' by research participants. For participants, water deserved honour—respect and protection—because it represents a deity and life: "[water] it's the spirit that brings life to the community" (Focus Group, March 2019). All participants referred to the strong connection between water and life. Expressions such as 'water is life,' 'water is the essence of life,' or 'water is the basis of existence' were commonly mentioned. The connection between water and life helped participants to identify what water governance should look like in MNFN.

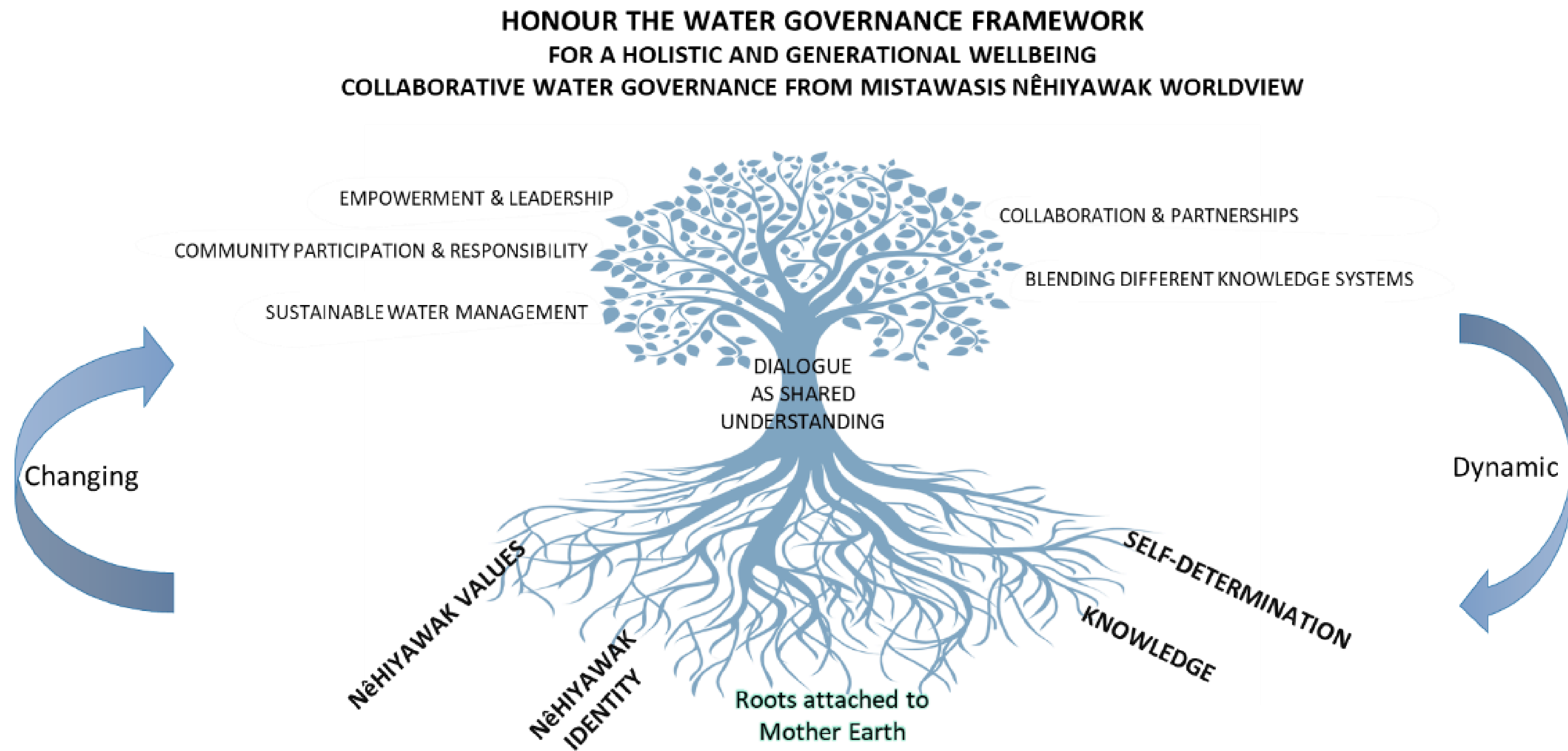
Water governance for participants was represented as a tree: "A tree is the image to represent what we're talking about here, a big strong birch, the tree of life, it's a strong foundation" (Focus Group, March 2019). According to participants, the image of the tree (therefore the image of water governance) should look tall, strong, and healthy, demonstrating the wellness or the well-being of the tree. For participants, the well-being of the tree (water governance) assured the well-being of water and the people living in the Nation. Participants also stated that the tree (water governance) should be rooted in Mother Earth—the nurturer that will provide the nutrients needed for the tree to grow healthy.

Participants also indicated that it was important to have a vision for the water governance framework. Participants referred to this vision as a promise that they would make as a Nation. They stated: "Mistawasis Nêhiyawak recognizes the shared responsibility to protect, conserve, and maintain water for present and future generations." For participants, water governance implied a sense of shared responsibility between people in MNFN and outside of the Nation. Water governance represented a collective work to protect and care for water for the well-being of water, people, and life. Participants also asserted that the Mistawasis Nêhiyawak Honour the Water Governance Framework should be seen as a dynamic system, constantly changing and adapting to the present and future generations' needs. The framework also represents a holistic acknowledgement that water governance should be inclusive in MNFN:

> It [the framework] means that it's holistic, comprehensive, all the opinions and views have to be included whether or not you believe in the traditional, you have to be respectful of everybody's views and opinions (Focus Group First Nation participant - female, May 2019).

Participants also identified the different parts of the tree (roots, trunk, and branches) as elements they thought important in the governance of water according to the MN worldviews (see Figure 4.5.1). These elements are discussed in the subsections below.

Figure 4.5.1. Mistawasis Nêhiyawak Water Governance Framework – The Tree of Life



Mistawasis Nêhiyawak recognizes the shared responsibility to protect, conserve and maintain water for present and future generations

"Anoch ekwa okaynêkan mamo kamatoyak miyo pimatisiwin ta pay pemitsahmak"

(Today and into the future we will work together for a beautiful/good life for all)

4.5.2 The Nêhiyawak sacredness in water governance: the roots of the framework

The Nêhiyawak sacredness is represented in the roots of the tree. Like tree roots—underground branches connected to Mother Earth—so is the Nêhiyawak sacred. This sacredness provides the 'nutrients,' or the foundation, of who the Nêhiyawak people are: their values, identity, knowledge, and self-determination. For the governance of water, participants associated four main elements as the underground roots connected to Mother Earth: the Nêhiyawak values, the Nêhiyawak identity, the Nêhiyawak TK, and self-determination.

Participants identified the Nêhiyawak values as the guiding principles or standards of behaviour guiding people, actions, and decisions within water governance. One of the participants referred to the importance of these values:

> Mistawasis have been really working towards getting back to our traditional values and beliefs, our cultural way. We got the Seven Sacred Teachings. I think those are the important ones to understand them. Not only to guide us in making the best decisions for the community and water but to understand the impacts and how it [water] relates not only to us but to everything (interview 12S First Nation Elder - male, October 2018).

For participants, the Nêhiyawak values of love, respect, courage, honesty, wisdom, humility, and truth provide space for developing an appreciation for water as the life provider. The values also provided the ethical guidelines for the arrangements needed in the governance of water.

Along with the values, participants reflected on Nêhiyawak identity, recognizing themselves as Nêhiyawak people with their own culture, language, worldview, and TK. According to participants, the Nêhiyawak identity has been lost over time—a legacy of the colonization process. The loss of their identity implied the loss of their relationship with water as the water stewards. By bringing back the Nêhiyawak identity, the connection and relationship with water would also come back:

> We're supposed to be protecting Mother Earth, which includes the water. We've lost our role. We've lost that identity. We need to bring back our

> culture and strengthening people's understanding of our culture, like the water ceremony we did. I think that really opened a lot of people's eyes that were there, about just how important water is (focus group First Nation participant - female, March 2019).

As part of water governance, TK received particular attention from the participants, who referred to the importance of TK for understanding water:

> I think [TK] it's a big part of who we are and where we came from, and understanding the land, the water, and the environment. It's what we observe, it's about sharing with others and making good decisions about water (focus group First Nation participant - female, May 2019).

When referring to TK, participants also talked about the important role that Elders play in water decision-making. Elders have the experience, the historical perspective, and the understanding of what water is and means:

> Elders should be present whenever decisions should be made because they're our history. They have to bring the knowledge back to us that we don't know, the ones that don't know and haven't been taught. It's for them to bring our identity, our roles in protecting water (interview 10C First Nation Elder - female, October 2018).

Finally, the reflections about TK and water governance opened space for discussion of self-determination. Self-determination was proposed as the process for relationship-building between First Nations and the Canadian government from a Nation-to-Nation standpoint. For participants, the recognition of their self-determination included the recognition of their principles, rules, practices, and knowledge exercised and adapted in time:

> We want our self-determination, the governance of our own waterways, the funding beyond that to go ahead with certain things, to take care of things for the future for our children (focus group First Nation participant – male, March 2019).

Once the foundational elements were identified and formed the roots, participants referred to elements that formed the trunk and branches of the tree.

4.5.3 Shared dialogue as the trunk in the framework

Participants identified the need for pathways and spaces for shared dialogue between what they called 'water responsible holders,' including Indigenous and non-Indigenous people. Everyone has a responsibility for the well-being of water. The trunk represents shared dialogue and understanding people's different perspectives, approaches, and worldviews. Participants remembered how shared dialogue was crucial for dealing with the past flooding crisis in the community:

> When we looked at the water, we dialogued and talked with other key government agencies, as well as technical people, institutions of higher learning, to come collectively to our community to help us resolve the issues of water, issues in the community, we were open to hearing and sharing strategies (…) You've got to have that dialogue. If you don't have that dialogue, how are they [non-Indigenous people) going to know what the needs of First Nations are (…)? Dialogue makes us a stronger community when we align ourselves and work with other people, other communities at the same table (focus group First Nation participant - male, March 2019).

By opening spaces for shared dialogue, people in Mistawasis reached out to different water stakeholders interested in working together and contributing learning opportunities to the community. For participants, dialogue implied coming "all to the common table," the table of water decision-making. At this table, everybody has a say, has knowledge and experience to share, and has power of decision-making. The trunk represents the means for communication between different worldviews, knowledges, and perspectives. Shared dialogue represented for participants the strategy for achieving common goals by recognizing the responsibility that every actor (e.g., government, local communities, industries, and non-governmental organizations) has in the governance of water.

4.5.4 Elements needed to honour water: The growing branches and leaves

Honouring water is an action needed for the water governance system to grow and strengthen. The MNFN participants identified five main elements to honour water: empowerment and leadership, community participation and responsibility, sustainable water management, collaboration and partnerships, and blending different knowledge systems. According to the research participants, the branches and leaves in the framework relate to specific tasks the community needs to work on for the Tree (governance system) to keep growing. As the branches and leaves in the tree are responsible for converting sunlight into chemical energy for the growth and health of the tree, the actions to honour water provide the energy required for the water governance system to keep growing strong.

Empowerment and leadership. According to participants, water governance in MNFN requires strong and empowered local leaders to guide water decision-making. For participants, leadership in the Nation should be given to Elders and youth. Elders, or knowledge holders, represent the wisdom, the knowledge, the experience, the learning, and the history, while youth were seen as the future of their community:

> Elders should play a big role in water decision-making. Elders have that knowledge from the past and that understanding of water that a lot of us take for granted and don't have anymore. They know what it's like to have to haul water or to have to work hard to get to your water. Nowadays, people just turn on a tap and they have water right there. They take it for granted so much. Those Elders have that respect for water, and they know what it took to get that water before. If they can bring that perspective to the table and help people understand just how important it is, then I think that they should be [there] (interview 02D First Nation Chief - male, October 2018).

> They've [the youth] gotta be part of the decision making because they are our future. You've gotta let them have that participation. That's important for the leadership to bring this younger generation in and teach them that. They should be included in everything that they do with water so that they'll know and they'll understand what it is that we need to do. When it comes time for them to lead us now, they'll only be that much stronger

> because they'll have that background, and that information, and that understanding of water that they need to make proper decisions (focus group First Nation participant - female, March 2019).

As reflected in this quotation, the participants maintained that knowledge holders and youth should be more involved as leaders in water decision-making. Elders are the source of knowledge needed for decisions, and the youth is the future, the human resource the Nation has for their survival as Nêhiyawak people. Although Elders have been included in water decision-making at some point in the past, leadership roles are missing, and the situation is similar for the youth.

Community participation and responsibility. Another element identified was the promotion of community participation and responsibility. Community members in MNFN require that people will become responsible holders (owning individual responsibility) in the water governance system to be actively involved in water decision-making. For research participants, participation issues are present in the Nation because not all members are aware of their role as active decision-makers:

> I think there's an incorrect community view that individuals or families or households aren't involved in water decision-making, I think that's wrong. All community members should be involved, should take responsibility, and ask to be part of that process, rather than just say "Oh, it's somebody else's responsibility." I think maybe for the community as a whole, we have to take that same view, that it's not the responsibility of the federal government or the province, it's not somebody else's responsibility, it has to be the responsibility of Mistawasis as a whole (focus group First Nation participant - male, March 2019).

Participants reflected on the community's awareness of the responsibility each person has for water, the decisions taken and how those decisions affect water and people's lives. Participants agreed that when people lose their responsibility for water, they also lose their connection and relationship with water, and this loss is what is preventing the community from honouring water. Solutions or strategies to increase participation included (re)learning processes about the sacred relationship between people and water.

Sustainable Water Management. Participants referred to sustainable water management as the actions the Nation needs to maintain a holistic and sustainable approach to water management. Participants identified actions to address first: updating the community's source water protection plan and educating community members about water protection. Participants indicated that both activities require both technicians or staff trained in environmental and financial resources to cover expenses. However, technical and financial resources are scarce in the Nation, representing constant obstacles in the management of water. One of the participants talked about the issues the Nation faces with water monitoring:

> There's monitoring that needs to go on there to ensure that the garbage there isn't leaking into our aquifers, our groundwater source. There's no set schedule for that, there is no set guideline for that. But is there enough resources? In the community, no, there isn't. We don't have the finances in place to actually do that type of work. So in order for us to have these things in place, that does take money and time [and] people (focus group First Nation participant - female, March 2019).

Participants agreed that the lack of technical and financial resources represent important barriers in the governance of water for this Nation. Nonetheless, these obstacles have been partially addressed through collaborative efforts with external partners.

Collaboration and Partnerships. To address the lack of technical and financial resources, participants, and leaders in MNFN considered the importance of collaborative work: trustful partnerships with Indigenous and non-Indigenous responsible water holders. They pointed out that earlier water problems at MNFN were addressed mostly through trustful relationships built in the past. Participants considered collaboration and partnerships as strategic resources for water governance:

> I think we've made many good connections with others. Our partners, our NGOs, the university, and from time to time, different levels of government. So we have those connections. But what we don't have yet is sort of a commonly understood way of working together. So it's fairly informal (focus group First Nation participant – male, March 2019).

> At times, we don't really realize how, perhaps, organized we are, but I think outside observers see that we're doing something together. But we don't have anything on paper, it's not defined. It's sort of an informal relationship right now, but I think there's a need to give it a definition because something is working good here (interview 01A First Nation water leader - male, October 2018).

The good partnerships experienced in the community represented opportunities for finding spaces of collaborative understanding between people in Mistawasis and outsiders.

Blending Different Knowledge Systems. The last element identified in the branches was blending different knowledge systems as an opportunity for bringing together Indigenous Knowledges and western science as complementary for solving water issues in MNFN. By partnering with different organizations, Mistawasis has built spaces for inclusion of Indigenous and western knowledges from a complementary perspective. Participants saw blending knowledge systems as a key strategy for making better decisions:

> Bringing both aspects of what traditionally all those keepers have and mix that into more contemporary aspects of how water quality should be monitored and engaged by blending both traditional philosophies in Nêhiyawak but also the more modern-day aspects of what water regulatory standards mean to everybody (…) I think as we start to reconnect to land and water and have this other [western] knowledge and data, then we'll make better decisions (focus group First Nation participant - male, March 2019).

The combination of the elements placed in the roots, trunk, branches, and leaves represent the meaning of water governance from a collaborative perspective in MNFN. Finally, participants discussed their mission for water governance as a Nêhiyawak community. The mission entails notions of shared responsibility for protecting water in the present and the future. The last goal is the achievement of a beautiful or good life for water and people.

4.6 Discussion

4.6.1 Confronting Hegemonic Water Governance Ontologies and Epistemologies in Canada

The Honour the Water Governance Framework is based on and composed of elements that represent the MNFN worldviews, culture, and values (roots); the importance of shared dialogue in water governance (trunk); and specific tasks or actions the community is aiming to strengthen in the governance of water (branches and leaves). The framework was built on the recognition, inclusion, and understanding of MNFN Indigenous water ontologies and epistemologies. Using this framework, MNFN intended to recover their Nêhiyawak identity lost in the history of colonization while building more holistic and sustainable pathways in water governance. Indigenous Peoples' worldviews, TK, and ways of life provide lessons and teachings that create responsibility and stewardship for water as a sacred spirit (McGregor, 2012).

MNFN's principles and knowledge established the water governance guidelines based on the idea of life. From the Nêhiyawak worldviews and TK, water is life; it owns spirituality and sacredness. From this conceptualization, people in MNFN aim to develop a sociocultural relationship with water based on respect and honour. According to Wilson (2014), the sociocultural relationships, or 'Indigenous hydrosocial relations,' are determined by the principles, beliefs, and knowledge of Indigenous Peoples, and from these hydrosocial relationships, actions in water governance are delineated. The MNFN people's values, knowledge, and beliefs are represented in the proposed framework, from which will emerge the actions that will help the Nation to honour both water and water governance. From the hydrosocial relationships incorporated into the MNFN water governance framework, the water governance system would benefit from a more holistic perspective. Water is no longer a resource to be managed; water now represents a political, historical, and cultural element in the system (Wiegleb & Bruns, 2018). The hydrosocial relationships of the MNFN framework contribute to expanding the understanding of water in the NSRW and eventually in Canada. The framework's emphasis on the hydrosocial relationships challenges colonial understandings of water as a resource, moving understanding of water towards the notion of water as a relation that can lead to transformative relational changes with water and the different water stakeholders in the watershed.

The framework co-built with MNFN differs from western dominant approaches that focused on the materiality of water as a resource to be used, with the economic value of water as the most important quality. The radical difference between Indigenous ontologies and dominant western ontologies is crucial for the practice and actions in water governance. Yates et al. (2017) wrote about these two ontologies— water-as-a-lifeblood' and 'water-as-a-resource'—in water governance in British Columbia, Canada. Hegemonic approaches divide water by its uses (e.g., drinking water, water for irrigation, etc.), and these approaches drive water governance and policies. The authors argue that alternative ontologies might develop different policies and actions, which will conceive of water as an interconnected system where humans and non-humans are constituents of the system, and they are connected.

Water governance requires the inclusion of Indigenous ontologies and epistemologies beyond cultural constructions or beliefs. Indigenous ontologies and epistemologies are official proclamations of self-determination: "Indigenous epistemologies and ontologies represent legal orders, legal orders through which Indigenous Peoples throughout the world are fighting for self-determination" (Todd[16], 2016, p. 18). Water ontologies represent a site of 'political contest' because in this space multiple and diverse water worlds intersect while challenging western ontologies dominant in the governance of water (Yates et al., 2017). In Canada, some efforts have been made to include Indigenous ontologies and epistemologies in the governance of water. For example, Arsenault et al. (2018) presented the influence of Indigenous Knowledge in the negotiations and policy agreements on the Great Lakes' water quality. After years of advocacy, the Chiefs of Ontario, working with Elders and Knowledge Keepers representing 133 First Nations in Ontario, influenced and changed water policy and governance. As a result, several innovative water policy frameworks that include Indigenous Knowledge have been developed, such as the Great Lakes Water Quality Agreement between Canada and United States in 2012, the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health in 2014, or the Great Lakes Protection Act in 2015. In Australia, a novel water governance body, the Martuwarra Fitzroy River Council (MFRC) was established by Traditional Owners in 2018 as an opportunity to develop a model of 'better-practice' for water management for the West

[16] (Métis)

Kimberley, Western Australia (Poelina et al. 2019). The MFRC was a locally designed collaborative solution based on cultural governance. The MFRC was founded on a collaborative water governance approach and is an inclusive and collective governance model, illuminated by First Law, and maintains the spiritual, cultural and environmental health of the Fitzroy River catchment (Poelina et al. 2019).

4.6.2 Decolonized water governance through equal dialogue and meaningful cooperation

Based on the sacredness of water, the Mistawasis Nêhiyawak Honour the Water Governance Framework suggests dialogue as the central axis in the governance of water. The framework calls for shared dialogue where dialogical approaches of complementarity between Indigenous and western knowledges are the strategy for reaching more sustainable and holistic outcomes in the governance of water. Dialogic spaces proposed by MNFN can open spaces for critical reflections and recognition of the social and environmental injustices this First Nation has suffered. Social and environmental injustices require spaces for shared dialogue that can deconstruct power dynamics that have undermined MNFN culture, participation, and inherent rights of decision-making on their traditional land. By identifying shared dialogue as the axis of the framework, MNFN is contributing to collaborative approaches in water governance in NSRW and in Canada. Dialogue can promote real spaces of participation and two-way communication and understanding between water rights holders and stakeholders. Dialogue can orient actions that contribute meaningful agreements or consensus and that represent one of the main goals pursued in collaborative water governance.

Dialogue as the main axis (the trunk) that connects the internal community (the roots) with actions and interactions among water responsible holders inside and outside the community (the branches and leaves). From MNFN worldviews and thinking, dialogue should open equal spaces for different ways-of-being-with-water, representation, participation, and learning opportunities in the governance of water. MNFN is calling for new and meaningful forms of collaboration in water governance, as are other Indigenous Nations in Canada. For example, Yates et al. (2017) refer to experiences in the Okanagan region of British Columbia, where Indigenous Peoples use the philosophy of *En'owkin* or the process of consensus-making dialogue "that nurtures

voluntary cooperation and which recognizes that existing life forms have status, rights and privileges that are equal to humans, and which must be protected" (p. 808). For MNFN, their framework is helping them to advocate for a collaborative dialogue that identifies multiple ontologies that recognise the sacred value of water. The sacredness of water demands a relationship between humans and water that is based on the honour and respect water deserves. By including MNFN water ontologies, MNFN advocates for the affirmation of their Indigenous laws, worldviews, and knowledge to govern, to relate, to be-with water.

From this research, we have found that the Mistawasis Nêhiyawak Honour the Water Governance Framework represents a bottom-up governance approach that differs drastically from the top-down centralized water governance model usually exercised in Canada. The structure of water governance grows from Mistawasis identified as a Nêhiyawak community in the right to assert their self-governance, legitimize their TK, and recognize their identity as Nêhiyawak people. These are crucial aspects of collaborative efforts in the governance of water. The Mistawasis Nêhiyawak Honour the Water Governance Framework supports Mistawasis's vision for de-construction of hegemonic colonial water governance systems. At the same time, it supports the co-construction of shared processes of participation, decision-making, and responsibility while acknowledging MNFN knowledge, culture, self-determination, and their ways of being-with-water. The process for building the Honour the Water framework represented a de-colonized effort in research in Saskatchewan and Canada. Nonetheless, it would be naïve to claim that the framework represents the perspective of every Nation member in MNFN, and the fact that it does not represent everyone could be considered a limitation of this study. This study represents the experience, knowledge, and aspirations that some members of MNFN have regarding water governance and the importance of collaboration and partnerships through inclusive and respectful dialogue.

Sustainable cultural approaches provide opportunities to strengthen Indigenous Peoples' capacity to improve their holistic well-being (Poelina et al., 2019). The Honour the Water Governance Framework co-built with MNFN intends to contribute to the holistic well-being of their First Nation and the NSRW. The Nêhiyawak water worldviews are represented, confronting current hegemonic water governance structures and systems in the NSRW and in the wider Canadian context. This is a bottom-up water governance holistic approach that proposes as foundational the empowerment of MNFN

identity, culture, and knowledge. MNFN is advocating for their right of self-determination and their position as water rights holders in the watershed. Current water governance systems are challenged to assert Indigenous Peoples' authority to confront water crises (Parsons & Fisher, 2020). In the case study selected, the framework proposed open spaces for the recognition of MNFN water authority and, at the same time, for the development of shared processes of participation and decision-making with the different water stakeholders in the NSRW.

To honour water, participation, partnerships, efforts in bridging knowledge systems, and sustainable actions for water management are all critical. Participation requires breaking with non-inclusive practices in water decision-making. The MNFN framework calls for actions that can promote better participative spaces inside and outside the Nation. Participation in water governance commonly has been either a fortuitous fact or a 'tick the box approach' to accomplish specific requirements. Participative processes need to be de-constructed, so they become legitimate and holistic processes, where participants "are actively playing their part" (Akhmouch & Clavreul, 2017, p. 30). Partnerships are also crucial in this collaborative framework. Partnerships are based on relationality. Relationships with other people are part of reality; they are part of Indigenous worldviews (Tynan[17], 2021). Partnerships built on trust have been strategic for MNFN when addressing water problems in their Nation. For example, the development of a source water protection plan among USASK, NSRBC, WSA, SRC, Indigenous Services Canada, the municipalities of Canwood and Leask, and the planning team of MNFN (Chief and Council members, special project managers, and water technicians) partners was developed and by outlined the potential risks to source water systems and delineated management actions for water source protection (other related examples are described in more detail in chapter 5). The partnerships built represent decolonial efforts towards building Nation-to-Nation relationships between MNFN and their water partners in the NSRW. By building trustful parentships, MNFN identifies and promotes in their framework opportunities for bridging western knowledge and their TK. MNFN includes in their framework pluralistic approaches that are needed to address complex socio-ecological problems and to respond to current and future generations' needs (Johnson et al., 2016). MNFN

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[17] (Trawlwulwuy)

acknowledges the benefit western science can provide to understand better the complexities in their water landscape as part of the NSRW. Nonetheless, they demand the recognition, understanding, and inclusion of their TK as holistic knowledge that can respond better to the well-being of people and water. From this holistic approach, the MNFN framework aims to reinforce sustainable pathways for water governance and management, recognise water-human connections and relations, and contribute to more resilient water landscapes and local communities in the NSRW.

4.7 Conclusions

For Indigenous Peoples in Canada, water issues and crises represent historical political conflicts of power. The solutions proposed to date demand the inclusion of collaborative approaches that will force the water governance system to make structural changes to address the water ontological disjuncture. The Mistawasis Nêhiyawak Honour the Water Governance Framework proposes a collaborative approach for the de-construction of hegemonic colonial water governance systems and the co-construction of shared processes of water participation, decision-making, and responsibility by acknowledging different ways of being-with-water. The framework challenges water governance—from overcoming cultural barriers to opening spaces for dialogue among multiple ontologies. The framework also represents a bottom-up approach to understand how to relate to water. By reflecting the understanding that water is life and water is sacred, the ethical guidelines in the water governance framework place stewardship, relationships, and partnerships as the key components in this system. The relevance of these components could potentially force decision makers to change perspectives that tend to divide water by its use. Ontological disjunctures are real and present in water governance; nonetheless, the disjunctures should be used for reformulating water governance towards meaningful and inclusive water governance approaches respectful of Indigenous authority over their well-being.

This study contributes to the debate on the importance of de-colonizing water governance in Canada. New forms of governance are emerging in Canada, and the MNFN framework is one of them. The Mistawasis Nêhiyawak Honour the Water Governance Framework provides important insights about perspectives and understandings that are excluded but required when dealing with current water governance issues. The inclusion of this framework, however, requires water

governance systems to recognize that legal pluralism will affirm Indigenous ontologies, knowledge, and laws. As Rathwell et al. (2015) argue "Effective governance responses to multi-scale challenges must align action with values of social justice and democracy, and must validate the legitimacy of diverse knowledge systems" (p. 853). Only when Indigenous Knowledges are validated and legitimized, will the complementarity between Indigenous Knowledge and western knowledge be possible. The validation of Indigenous ontologies by legitimizing Indigenous Knowledges could represent the first step for meaningful and effective collaborative water governance systems able to navigate the water complexity and uncertainty for Indigenous Peoples in MNFN and in the wider community in Canada.

PREFACE TO CHAPTER 5 – RESTORING RELATIONS: HONOURING WATER IN THE NORTH SASKATCHEWAN RIVER WATERSHED (NSRW) WITH MISTAWASIS NÊHIYAWAK

In Canada, reconciliation in water governance is challenged by colonial policies and institutional structures that keep eroding Indigenous peoples' lives and excluding them from water policy and decision-making. New political, organizational, and administrative water governance structures inclusive of Indigenous peoples' worldviews, knowledge, history, and needs are needed for meaningful reconciliatory actions. Collaborative water governance is proposed as an approach to broadened understanding of water injustices and present opportunities for attitude shifts that could lead to resolution of water governance issues and pathways toward reconciliation. The case study documented in this paper, presents the "The Honour the Water Project" as an example of collaboration among Indigenous and non-Indigenous people working together to address water governance and management issues while practicing reconciliation in the North Saskatchewan River Basin.

This Chapter demonstrates that:

- Collaborative water governance based on relationships of relationality, reciprocity, and respect can provide spaces for meaningful processes of reconciliation.
- Meaningful partnerships are essential for both collaborative efforts in water governance and reconciliation processes.
- Collaborative efforts in water governance open spaces for transforming unjust and broken relationships when respect and reciprocity are guiding relationships.
- Water governance structures inclusive of Indigenous peoples' worldviews, knowledge, history, and needs contribute to meaningful reconciliatory actions.
- Individual and collective structural changes in water governance are possible when Indigenous values, experiences, knowledge, and resources are part of the governance system.
- Dialogue is key in reconciliation and provides spaces for acknowledging the differences, the history behind each stakeholder and rights holder, and from these differences to co-build a shared understanding.

Overall, this chapter shows that collaborative interests and efforts for water governance could overcome harmful colonial relationships and legacies. Reconciliation in Canada finds space, representation, and actions in water governance when respectful and reciprocal partnerships are built and from these partnerships shared decision-making power is promoted.

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CHAPTER 5 - RESTORING RELATIONS: HONOURING WATER IN THE NORTH SASKATCHEWAN RIVER WATERSHED (NSRW) SASKATCHEWAN WITH MISTAWASIS NÊHIYAWAK

Reconciliation is a river. Or could be a river. Not simply one drop of water. So all the water drops are flowing together (interview 01A First Nation water leader - male,, September 2018).

Abstract

Meaningful reconciliation in Canada requires the acknowledgement of past and present harmful legacies of colonization. Unequal relationships of power and decision-making that exclude Indigenous peoples from water policy and governance decision processes are present but not answered. The re-establishment of respectful relationships between Indigenous and non-Indigenous peoples requires different water governance approaches aware of Indigenous Peoples' worldviews, knowledge, self-determination, history, and needs. Through a case study with Mistawasis Nêhiyawak First Nation and their water partners in the North Saskatchewan River Watershed (NSRW), the Honour the Water Project (HWP) is presented as one example of reconciliatory work in water governance. Collaborative water governance approaches and efforts in the NSRW provided proactive opportunities to recognize and work on water disparities while building pathways toward reconciliation. Collaborative water decisions and relationships of relationality, reciprocity and respect were the basis to overcome water problems affecting this First Nation. The characteristics for successful collaborative water governance, foundational to the HWP and transformative reconciliation are discussed.

5.1 Introduction

In Canada, reconciliation is proposed as an ongoing national project towards the reaffirmation of Nation-to-Nation relationships between Indigenous Peoples and Canada (Ladner, 2018). The Truth and Reconciliation Commission (TRC) report calls Canada to "[r]enew or establish Treaty relationships based on principles of mutual recognition, mutual respect, and shared responsibility for maintaining those relationships into the future" (The Truth and Reconciliation Comission of Canada, 2012, p. 119). Re-establishment of respectful relationships between Indigenous and

non-Indigenous peoples requires the acknowledgement of colonial history and overcoming past and present conflicts (The Truth and Reconciliation Commission of Canada, 2015). Reconciliation, however, has been categorized as a top-down-state-conceived process (Freeman, 2014), limited to 'past issues' mostly related to the Indian Residential School and its generational harmful legacies, and a settler project grounded in denial of present injustices, unequal power relationships and dispossession of Indigenous Peoples' lives (Clark & de Costa, 2011; Ladner, 2018; Nagy, 2017).

A present injustice, often overlooked and resulting from various colonization policies and institutional structures, is the ongoing erosion of Indigenous Peoples' livelihood systems, culture, resource base, and the exclusion of Indigenous Peoples from Canadian water policy and governance decision processes. Water policy and governance processes are exclusively entrenched in western scientific viewpoints and disregard Indigenous values, norms, and conceptions of water governance (Black & McBean, 2017; Bozhkov, Walker, McCourt, & Castleden, 2020; Bradford et al., 2017; Yates et al., 2017). The acknowledgment and resolution of current injustices and unequal power relationships in Canada is required for meaningful reconciliation and re-establishment of relationships among Indigenous and non-Indigenous people in this country.

To build pathways toward reconciliation, water governance approaches are required that bring Indigenous and non-Indigenous people together to work on the health of water and people (Wong, 2011). Co-building new political, organizational, and administrative water governance structures inclusive of Indigenous Peoples' worldviews, knowledge, history, and needs can contribute to meaningful reconciliatory actions (Brisbois & De Loë, 2016a; Castleden et al., 2017; Von der Porten et al., 2016; Von Der Porten et al., 2015). For Indigenous Peoples, the construction of new water governance structures and relationships requires that Indigenous Peoples be recognized as sovereign Nations (Nation-to-Nation relationship) and involves the inclusion of Indigenous Knowledges as legitimate knowledge systems in water decision-making (Phare, Simms, Brandes, & Miltenberger, 2017; Von Der Porten & De Loë, 2014b; Von Der Porten et al., 2015). One proposed solution to the water governance issue is collaborative water governance, a governance process characterized by representation, inclusiveness, fairness, equity, endured relationships, and face-to-face interactions towards consensus building (Brisbois & De Loë, 2016a; Von der Porten & De Loë,

2013a; Von Der Porten & De Loë, 2014a). A collaborative water governance approach dismantles colonial principles of power rooted in the political, organizational, and administrative water structures, and this process can provide opportunities for broadening understanding of water injustices, resulting in attitude shifts that resolve water governance issues and provide pathways to reconciliation (Black & McBean, 2017; Castleden et al., 2017; Simms et al., 2016). For meaningful relationships of reciprocity to develop through a collaborative governance process, water needs to be respected and protected and the weight of power among people and nature levelled. Thus, water governance needs to be grounded in Indigenous teachings in which the kinship between nature, water and people is valued (Asch, Borrows, & Tully, 2018; Bradford et al., 2017; Muir et al., 2010; Wilson & Inkster, 2018). From this foundation, collaboration among Indigenous and non-Indigenous people on water governance issues could provide opportunities for reconciliation and reciprocal relationship building through a collaborative water governance process (Phare et al., 2017; Von Der Porten & De Loë, 2014b; Von Der Porten et al., 2015).

This paper presents a collaboration among Indigenous and non-Indigenous people working together to address water governance and management issues in the North Saskatchewan River Basin. This collaboration led to the HWP, an example of a reconciliatory water governance process in which collaborative water decisions and relationships of relationality, reciprocity, and respect were created and water problems were overcome. The HWP, which began in Mistawasis Nêhiyawak (MNFN), shows how this First Nation and the various water stakeholders in the North Saskatchewan River Watershed (NSRW) found opportunities to build trustful and reciprocal relationships while confronting and solving their water issues. This paper begins by presenting theoretical discussions on reconciliation and collaborative water governance. It then discusses the local context where the HWP develops before turning to the research journey, the research design, and methodology. The evolution and partners of the HWP are presented, as are the contributions of this project to meaningful processes of reconciliation. Final reflections and conclusions are offered on the reconciliatory opportunities the HWP provided in the NSRW.

5.2 Decolonizing Reconciliation Trough Transformative Reconciliation

Canadian history is marked by periods where discriminatory and racist policies were enacted, affecting Indigenous Peoples. Throughout colonization, the Canadian government took control over Indigenous Peoples' lives and land, resulting in what has been considered as a 'cultural genocide' (Amir, 2018; The Truth and Reconciliation Commission of Canada, 2015) or "the destruction of [the] structures and practices that allow the group to continue as a group" (The Truth and Reconciliation Commission of Canada, 2015, p. 1). Cultural genocide was implemented through Indigenous Residential Schools (IRS). Indigenous children were forced to attend these church-run schools, whose purpose was to eradicate Indigenous Nations by dispossessing Indigenous lands, self-determination, languages, cultures, and worldviews (Corntassel[18], 2009). Class action lawsuits against the Canadian government and the Indian Residential Schools Settlement Agreement (IRSSA) were the prelude for the creation of the Truth and Reconciliation Commission of Canada (TRC). A main mandate of this commission was to guide reconciliation and healing between Indigenous and non-Indigenous people in Canada by renewing their relationships of respect and understanding (The Truth and Reconciliation Commission of Canada, 2015).

The validity and process of reconciliation in Canada has been criticized (Wyile, 2017). Scholars argue that reconciliation is a settler project that reinforces colonial asymmetric relationships (Ladner, 2018; Nagy, 2017; Wyile, 2017) and is limited to 'past issues,' mostly related to the IRS and its generational harmful legacies, while current injustices and unequal power relationships affecting Indigenous Nations remain invisible (Clark & de Costa, 2011; Nagy, 2017). Jung (2018) argues that reconciliation is a process for adaptation and integration of settler-Indigenous Peoples' relations (assimilation strategies) rather than a meaningful process that transforms these relationships. Reconciliation ignores structural changes at individual and societal levels that are required to recognize and redress colonial injustices still present (Daigle, 2019; Freeman, 2014). The process has been described as a discourse that perpetuates a political *status quo,* recognizing past injustices and harms but not the legacies of this violent past or their legitimization in the present (Corntassel, 2009; Nagy, 2017; Wyile, 2017). The historical and current exclusion of Indigenous Peoples from Canadian water

[18] (Cheroke)

policy and governance decision processes and the continued violence perpetrated on Indigenous land are legacy injustices unrecognized or legitimized today (Borrows, 2018; Castleden et al., 2017; Daigle[19], 2019; Day et al., 2020).

In response to these unsolved issues of justice and power, scholars are calling for transformative reconciliatory approaches able to defy and break up current colonial legacies and structures to transform (or change) not only unjust relationships between settlers and Indigenous Peoples (Borrows & Tully, 2018; Nagy, 2021) but "all our relations." Transformative reconciliation requires reconciliation with more-than-human living beings (Tully, 2018), and restoring relationships includes re-establishing meaningful relations with Mother Earth (Ladner, 2018; Starzyk et al., 2021; Tully, 2020). Unequal power relationships between Indigenous and non-Indigenous people are rooted in unsustainable relationships between humans and the living earth (Tully, 2018).

Reconciliation with nature implies the acknowledgment of Indigenous worldviews and knowledge (Borrows, 2018). Reconciliation, then, requires approaches that bridge Indigenous Knowledge and western knowledge from a complementary perspective. Bridging different knowledge systems implies a shift in perspective because the process works to strengthen relationships needed to implement, develop, and disseminate information in respectful environments (Castleden et al., 2017). When joint desired outcomes are achieved through knowledge bridging in dialogue spaces, sustainable paths are created for the management and governance of nature's elements (Adams et al., 2014; Bohensky & Maru, 2011; Tengö et al., 2014), and when Indigenous and non-Indigenous peoples share interests in and concerns about nature, positive examples of reconciliation have been demonstrated (Starzyk et al., 2021).

5.3 Collaborative water governance: A bridge to transformative reconciliation

Canada has a highly fragmented water governance system (Bakker & Cook, 2011; Hill et al., 2008). Constitutionally, the federal government is responsible for fisheries, navigation, international waters, and federal lands, including Indigenous lands. Provinces are responsible for water resources and water supply within their boundaries,

[19] (Cree)

but colonial legacies, still present in this system, reduce space for Indigenous Peoples' rights, voices, and active and meaningful participation in water decision-making (Basdeo & Bharadwaj, 2013; Simms & de Loë, 2010). Current water conflicts in Indigenous territories are based on political tensions, unresolved disputes of equity and justice, and colonial water policy, governance and management systems (Basdeo & Bharadwaj, 2013; Von Der Porten & De Loë, 2014b).

Collaborative water governance has been proposed to guide processes of decision-making for current complex and uncertain water issues affecting Indigenous Peoples (Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014a). Based on representation, inclusiveness, fairness, equity, endured relationships, and face-to-face interactions, this type of governance aspires to consensus as the ultimate goal (Brisbois & De Loë, 2016a; Von der Porten & De Loë, 2013a; Von Der Porten & De Loë, 2014b). A constructive process in which hybrid and complementary pathways are applied to achieve consensual decisions, collaborative water governance promotes voluntary, active, and proactive participation of Indigenous Peoples (Von der Porten & De Loë, 2013b); the inclusion of their knowledge and worldviews (Von der Porten & De Loë, 2013a; Von der Porten et al., 2016); and the reduction of power asymmetries in decision-making (Bakker & Morinville, 2013; Brisbois & De Loë, 2016a; Von Der Porten et al., 2015). Recognizing Indigenous self-determination in water governance represents a constructive de-colonial venue to overcome issues of power asymmetries (Von der Porten & De Loë, 2013a, 2013b). From this symmetrical perspective, social relationships are governed by principles of trust, reciprocity, love, and respect, all principles that can be replicated among the water governance participants (Muir et al., 2010). Collaborative governance has created strong partnerships between western and Indigenous managers, planners, and knowledge systems (Finn & Jackson, 2011).

Imbalances in the politics of water can be overcome when principles guiding the political, organizational, and administrative water structures recognize Indigenous Peoples as sovereign Nations and Indigenous Knowledges as legitimate knowledge systems in water decision-making (Wilson & Inkster, 2018). When these principles are recognized, opportunities for bridging dialogue in an equal and equitable manner between Indigenous and non-Indigenous people are feasible. Reconciliation processes are more likely to happen when spaces for dialogue and consensus are opened and trustful and respectful partnerships are built. Thus, collaborative water governance

approaches can contribute to processes of transformative reconciliation (Phare et al., 2017; Von Der Porten & De Loë, 2014b; Von Der Porten et al., 2015), provide opportunities for broadened understanding of water injustices, and shift attitudes, promoting pathways toward reconciliation and resolving water governance issues.

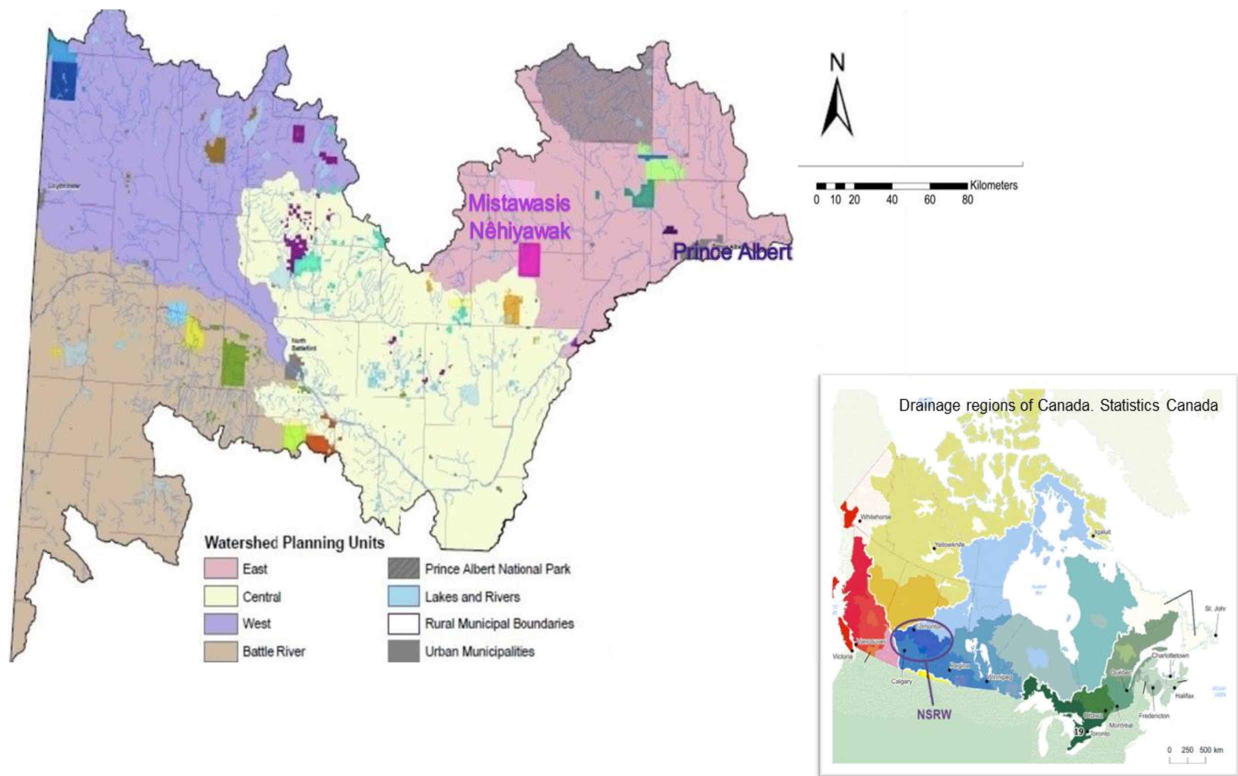
Cases of collaborative water governance among Indigenous and non-Indigenous people working together on water governance and management issues can provide useful learning experiences of practical reconciliation processes beyond political discourses. This paper presents the experiences of MNFN, whose waters are shared in the NSRW, providing useful lessons about reconciliation in the Canadian context.

5.4 MNFN, North Saskatchewan River Watershed, and Governance

MNFN is in Treaty 6 Territory in Saskatchewan, Canada, approximately 150 kilometres north of Saskatoon and the University of Saskatchewan. This Cree First Nation covers an area of 120 square kilometres, with 681 inhabitants recorded in 2016 (Statistics Canada, 2016). MNFN is part of the NSRW. The watershed covers an area of 41,000 km^2 and includes 51 Rural Municipalities, 29 First Nations lands and 17 reserves, 100 towns and villages, and the cities of Lloydminster, North Battleford, and Prince Albert. The NSRW starts with the North Saskatchewan River in the Columbia Icefields in the Rocky Mountains of Alberta and flows northeasterly to Saskatchewan towards the South Saskatchewan River. In Saskatchewan, the NSRW covers a total of 41,000 km^2 and includes the Battle River, Eagle Creek, and the Goose Lake internal drainage basin northeast of Rosetown. The physiogeographic regions identified in the province are the Missouri Coteau Upland, the Saskatchewan Upland, and the Saskatchewan Rivers Plain (Saskatchewan Watershed Authority, 2007). The MNFN is located in the East and Central Watershed Planning Units in the watershed (Figure 5.4.1). MNFN shares this sub-basin area with different towns and cities (e.g., Leask, Canwood, Hafford, Blaine Lake, Shellbrook, among others) and many First Nations (e.g., Muskeg Lake, Beardy's and Okemasis, Lucky Man, among others).

Figure 5.4.1 North Saskatchewan River Watershed Planning Units Map

North Saskatchewan River Watershed NSRW



Adapted from First Nations Lands Map. Saskatchewan Watershed Authority.

A complex water governance system delineates water decision-making and policies in the NSRW that influence and impact MNFN. The governance of water in this area is shaped by the provincial and municipal governments, non-profit organizations, and landowners (non-Indigenous farmers) (conversation with Katherine Finn, NSRBC Manager, Aug 2019). Water governance challenges for MNFN included tensions and poor communication and dialogue between the First Nation and different water stakeholders, especially government stakeholders at different levels; the lack of Nation-to-Nation relationships, and limitations in accessing technical resources and funding to address water problems. Spaces for representation, inclusiveness, equity, and long-term relationships are absent; nonetheless, they are needed and demanded by MNFN and other First Nations in the area.

MNFN, like other Indigenous communities in Canada, have jurisdiction and decision-making powers only within the boundaries of their reserve and treaty entitlement lands. Outside the reserve, MNFN's influence on water decisions depends

on their leadership and capacity to build relationships with the federal and provincial governments, neighbouring municipalities, and other water stakeholders in the watershed, including non-profit organizations. A water crisis in 2011 and 2014 forced MNFN leaders to bring 'everyone to the table' and find solutions to water problems affecting their people and *Nipy* the water spirit.

5.5 MNFN Water Crisis

Heavy snowfall and rapid snow melt in 2011 and 2014 resulted in extreme flooding in MNFN. The Nation experienced elevated water levels and damage to flood protection infrastructure (like dams and levees) (Thapa et al., 2019). Both flooding events led to contamination of water sources, degradation of riparian habitat, damage to road infrastructure, and displacement of people from their homes, significantly impacting the well-being of MNFN people (Dawe, 2016; Thapa et al., 2019). To address flooding in the East-Central Planning Units of the NSRW, Chief and Council recognized the need for collaborations, shared capacity, and resources between the First Nation as a water rights holder and the water stakeholders in the watershed. The actions taken to address flooding in the area evolved into what it is known as HWP, a three-year project that started in 2015. The HWP is presented as an example of a reconciliatory water governance process.

5.6 Research Journey with MNFN, Water Stakeholders of the NSRW, and the Honour the Water Project

The research journey with MNFN and water stakeholders in the NSRW and HWP evolved over an iterative four-stage qualitative research process, which commenced in 2016. Framed as a case study, this qualitative research design was guided by critical approaches within qualitative methods (Kovach, 2009). This research journey resulted in a comprehensive or in-depth understanding of the HWP. Principles of CBPR were applied to balance power by co-producing knowledge that could meet the expectations of MNFN and co-researchers. CBPR allowed the development of trustful and reciprocal relationships with research participants. From these relationships, spaces for respectful dialogue, learning opportunities, and complementarities were found, all of which helped

to elucidate the process of the HWP and demonstrate how relationships were built among the project's participants.

5.6.1 Engagement with MNFN and water stakeholders - stage one

The first stage consisted of an engagement process with MNFN and later with their water partners. This engagement process was crucial because it provided essential opportunities and spaces for building trust and meaningful relationships between people in MNFN and the first author (Mora) as the outsider researcher. Two co-researchers and members of MNFN were invited to participate (Johnston – Special Projects worker and Watson – Special project worker assistant), and both had active community portfolios in environmental special projects in MNFN. This stage involved attendance at various community events (like Pow Wows, summer and winter cultural camps, school activities, meetings on/off reserve, and Treaty Days), where the researchers had opportunities to interact with First Nations members and their water partners and to build relationships. The engagement and relationship-building stage occurred over a two-year period prior to active research.

5.6.2 Participant recruitment and research activities with MNFN and water stakeholders – stage two

The second stage was devoted to participant recruitment and research activities. Recruitment criteria and methods of data gathering were guided and informed by both co-researchers (Johnston and Watson). Methods of data gathering in this stage included semi-structured interviews and participant observation. Semi-structured interviews were conducted between October 2018 to September 2019 by the first, second, and third authors (Mora, Johnston, and Watson). Interview questions were related to the meaning of water, water governance, partnerships, and the process of the HWP.

Thirteen MNFN community members (eight males and five females) (See Table 5.6.1) were purposely selected by co-researchers.

Table 5.6.1. MNFN Interviewees' Positions or Roles in the First Nation

MNFN Member	**Number of Participants**
Elders	4
Water technician/operator	2
Council members	3
Leadership	2
Director of Health	1
HWP project manager	1
Total	**13**

MNFN local protocols were followed, including offering tobacco as a symbol of gratitude for participants' time and knowledge shared. Interviews with MNFN members took place at participants' convenience in familiar spaces such as the Health Centre, the Band Office, and the Buffalo Iron Centre.

Seven interviews with HWP non-Indigenous partners (three males and four females), two Indigenous Federations and Councils (both females), and two First Nations partners (both males) closely involved in the HWP were conducted by phone or in some cases at the organizations' offices (See Table 5.6.2). Invitations to the provincial and municipal governments for interviews were also sent out (four invitations), but positive confirmations for their participation were not received. All interviews were audio-recorded and transcribed.

Table 5.6.2. HWP Water Stakeholders and Rights Holders Involved in the HWP - Interviews

Name of the First Nation or Water Organization	Number of Participants
Non-government organizations	5
Academic institution and project	2
Indigenous Federations and Councils	2
Indigenous partners (First Nations)	2
Total	**11**

Participant Observation

Participant observation was used to learn more about MNFN history, worldviews, culture, and governance dynamics, as well as MNFN members' interactions and relationships with non-Indigenous partners. The observer was the first author (Mora). Observation of participants took place largely during the engagement stage at cultural events (such as Pow Wows, Treaty Days, and Summer Cultural Camps), school activities, and national meetings attended with MNFN co-researchers. The method of participant observation provided the researchers with better understanding about the nature of relationships MNFN had with their water partners.

5.6.3 Interview results: Presentation to co-researchers and research Participants - stage three

Interviews were transcribed and sent to all interviewees (Indigenous and non-Indigenous). Participants revised the information to ensure it was accurate according to their individual criteria. The information was later shared with co-researchers, who also verified the results before proceeding to the research data interpretation.

5.6.4 Results interpretation and analysis – stage four

Results' interpretation and data analysis occurred in the fourth stage—a cyclical process of learning, reflection, and critical analysis of the results. Data gathering was conducted

by the first author (Mora) and supported by the second and third authors (Johnston and Watson). Interviews' transcriptions and field notes from observations were imported into the NVivo qualitative research software package, version 8.0 (July – September 2019). The analysis followed inductive approaches by identifying the main units and grouping them into categories or themes (for example, HWP history, actors, relationships and partnerships, water governance problems, dialogue, among others) The themes were reviewed and approved by the second and third authors (Johnston and Watson).

5.7 The Honour Water Project: Evolution and Partners

Following the 2014 floods, MNFN Chief and Council invited representatives from the federal and provincial government organizations (Environment and Climate Change Canada (federal), Indigenous Services Canada (federal), and Water Security Agency(provincial), rural municipalities Leask and Canwood (rural municipalities), Saskatchewan Research Council (a provincial Treasury Board Crown Corporation), North Saskatchewan River Basin Council (a non-profit river basin council), and the School of Environment and Sustainability at the University of Saskatchewan (an academic institution) to initiate dialogue, establish partnerships, and co-develop practical solutions to flooding issues. A series of meetings among those invited were held in the Nation over the period of a year. The outcome of these meetings was the development and initiation of the three-year Honour the Water Project (HWP). Financially supported by the Environment for Canada-Eco Action Community Funding Program, this project officially started in 2015. The HWP had three goals: 1) establish a steering committee with MNFN, municipal and provincial governments, supportive agencies (non-governmental organizations), and the academy (SENS-USASK) to identify water issues and threats to water quality; 2) develop a source water protection plan that includes key prioritized actions; and 3) educate people in the First Nation about the value of water systems.

An HWP working committee was formed, which included representatives from USASK, NSRBC, WSA, SRC, Indigenous Services Canada, the municipalities of Canwood and Leask, and the planning team of MNFN (Chief and Council members, special project managers, and water technicians). As part of the HWP, this committee worked on a five-year source water protection plan, outlining the potential risks to

source water systems and delineating management actions that would protect MNFN's water sources. This plan identified the on-reserve drinking water system in MNFN, the inventory of water services including piped water and sewer systems, the inventory of all land uses and activities with potential to degrade water quality on-reserve and adjacent to the reserve, the risk assessment and ranking of the potential activities affecting water sources, and the management actions needed to confront the risks. Along with developing the source water protection plan, the committee found opportunities to study the water drainage system on reserve and adjacent lands, implement more efficient drainage systems, and work on shoreline restoration. After the source water protection plan was completed, the work continued, and new water stakeholders joined the HWP (Prince Albert Model Forest, the Redberry Lake Biosphere Region, the Saskatchewan Association of Watersheds, Prairie Water Project (Global Water Futures), Federation of Sovereign Indigenous Nations (FSIN), and the Red River Commission). Two rights holders also joined in the efforts of honouring water (Muskeg Lake Cree Nation and Beardy's in Okemasis First Nation). MNFN and the water partners co-built relationships of trust, respect, and reciprocity. Many of the encounters between MNFN people and water partners happened on MNFN land, showing the intention and decision to work together. According to the HWP manager, the addition of new partners in the project provided opportunities to access more funding to support the project:

> Honour the Water began off as a project that had a dollar value of just under half a million. In three years of Honour the Water, the dollar value increased to close to 1.4 million because we found additional partners (interview 01A, Oct 2018).

The partnerships provided opportunities for building capacity in MNFN, finding needed technical support and co-building bridges between western knowledge and TK. These opportunities are seen in tangible outcomes: the source water protection plan; a LIDAR study to create flood mapping and monitoring; drainage studies; new infrastructure for drainage; repair of roads affected by flooding, relocation of people affected by flooding (new homes); transdisciplinary research around the importance of collaborative approaches in water governance and disaster risk reduction; source water awareness workshops with elementary and high school students; two educational videos with

traditional story telling practices about cases of extreme drought or flooding; and reforestation plans on-reserve to protect shorelines. Through HWP, MNFN and their water partners found ways to work together for the benefit of water and people in this First Nation. The benefit of this collaborative project in terms of working towards transformative reconciliation is explained in the following section.

5.8 Collaborating on Water Governance Through HWP- A Process Towards Transformative Reconciliation

Research participants identified the HWP as the catalyst for positive outcomes for the governance and management of water in MNFN. The HWP as a living project provided opportunities for structural changes to enable reconciliation and collaborative water governance. When research participants were asked about the process of the HWP they responded and reflected on the following observations: meaningful long-lasting partnerships in equality, shifts in unjust relationships, the inclusion of Nehiyawak principles, values, and knowledge to break with colonial structures, and dialogue in equality. These observations were made by different interviewees, and they can be considered to reflect the characteristics of the HWP; they are interconnected and the sum of them represents the success of the HWP. These characteristics coincide with the foundational characteristics of transformative reconciliation and collaborative water governance as seen in Table 5.8.1.

Table 5.8.1. The HWP's Characteristics that Enable Transformative Reconciliation and Collaborative Water Governance

Concepts	Observations (Characteristics)	HWP Characteristic identified by participants	Brief evidence
Transformative Reconciliation	Transform colonial unjust relationships (from power-over-others towards power-with-and-for-each-other)	Meaningful long-lasting partnerships in equality Dialogue in equality	Water rights holders and stakeholders coming to the same table to find solutions and approaches to deal with water problems
	Reconciliation with Mother Earth (interconnectedness)	The inclusion of Nehiyawak principles, values, and knowledge to break with colonial	Including as a guiding principle the sense of honouring (respecting and caring) *Nipy* the water spirit. Building

		structures Shifts in unjust relationships	symmetrical relationships with water
	Recognizing the value of Indigenous Knowledge systems and bridging different knowledge systems	The inclusion of Nehiyawak principles, values, and knowledge to break with colonial structures	Incorporating the spiritual value of water in decision-making and activities along the project
	Gift-reciprocity (reciprocal relationships of friendship)	Meaningful long-lasting partnerships in equality Shifts of unjust relationships	Water partners became MNFN friends, and they were recognized by receiving the 'star blanket'
	Collaborative work (working together)	Meaningful long-lasting partnerships in equality Dialogue Shifts in unjust relationships	The HWP was co-built with MNFN and water stakeholders interested in supporting the First Nation to solve their water issues
Collaborative Water Governance	Participation (voluntary and active)	Meaningful long-lasting partnerships in equality Shifts in unjust relationships	MNFN invited different water stakeholders to their reserve to participate actively and voluntarily
	Reduction of power asymmetries in decision-making (representation, inclusiveness, fairness)	Meaningful long-lasting partnerships in equality Dialogue Shifts of unjust relationships	The HWP was built jointly between water rights holders and stakeholders under the idea of working together at the same level
	Inclusion of Indigenous worldviews and knowledge systems in water governance	The inclusion of Nehiyawak principles, values, and knowledge to break with colonial	The spiritual value of *Nipy* as the sacred spirit was the basis of the HWP

		structures	
	Enduring relationships	Meaningful long-lasting partnerships in equality	Relationships built during the project became meaningful friendships

5.8.1 Building Meaningful and Equal Partnerships

The HWP provided opportunities for building meaningful partnerships based on equality. These partnerships were co-built over time, requiring patience, commitment, and a genuine interest in working together. The co-built partnerships brought advantages and resources that were needed to accomplish the objectives proposed in the HWP (for example, capacity-building and an increase in technical and financial resources). Participants interviewed referred to the success of these partnerships derived from collaborative approaches in the work performed alongside the HWP. The HWP implied breaking with distant, unequal, and hierarchic relationships while bringing people to one common table for sharing, talking, and making decisions in equality:

> Honour the Water meant working together and coming together to do what we need to do for the water. Whether it's making it safe, protecting it, treating it. Also, I think that provided learning opportunities, learning from each other, the different perspectives and understandings of water. Even though Honour the Water, the focus was to deal on high water and flooding events, just as important was to Honour the Water through the creation of partnerships, alliances, and friendship. So, now, we know there are others that we can work with on other issues whether it's water or other issues. We know the way to effectively deal with things is through those partnerships (interview 06M First Nation water leader - female, Oct 2018).

Collaborative approaches that led to meaningful partnerships represented opportunities for equally sharing resources, knowledge, and help, which dismantled practices of exclusion and marginalization that characterize colonial-unequal relationships. Partnerships in the HWP entailed relationships where all the parties involved had a legitimate say and benefited from the work performed. The HWP became a strategic

learning experience that contributed to the success both of MNFN members and their water partners. MNFN interviewees expressed the following:

> Through Honour the Water some relationships were just for that moment or just for a number of meetings but some of the other organizations our relationship has become stronger. We're finding ways alongside our partners to continue to Honour the Water through different projects, through different sources of funds (Interview 01A First Nation water leader - male, Oct 2018).

> We are stronger together because each organization represents a body of people. Our partnerships mean having consideration, having a discussion, and coming to a point where we all agree and work towards making a success (Interview 04B First Nation health director - female, Oct 2018).

As a non-Indigenous water partner indicated,

> We could never have achieved all that we've done if it wasn't for the partnership with Mistawasis. I value them as a key priority in all our strategic management. Our partnership with MNFN led to some initiatives that are long lasting. It's what keeps us going (Interview 05FSR non-governmental organization – female, Jul 2019).

Collaboration and partnerships in the HWP were referred to as the traditional way MNFN people used to work: As one interviewee explained, “Honour the Water was bringing people together. Our ancestors, the Indigenous communities, used to work together all the time” (interview 01A, Oct 2018). Members of MNFN interviewed indicated that this collaborative traditional approach contributed to their inner strength as a cohesive and recursive community. This perception was also shared by some of their water partners. One of them saw MNFN’s collaborative efforts as the means to contribute to healing:

> Chief Mistawasis signed Treaty 6. He was the first to sign, they believe in partnerships and working together, and I think that’s how they will heal their culture by working with other communities and stakeholders to

> rebuild their knowledge and their history and their understanding (interview 06NSK non-governmental organization - female, Jul 2019).

Partnerships in equality represented novel approaches of engagement in the HWP, providing opportunities for power sharing, positive contributions, and benefits for both sides of the partnerships. Emerging from conversations with research participants, in general, were partnerships built in the HWP that influenced the capacity MNFN and their water partners had to overcome water crises, providing positive results to the governance of water. In the long term, these partnerships offer opportunities for dismantling unequal relationships and restoring relationships.

5.8.2 Shifts in Attitudes - Transforming Unjust Relationships

Collaborative approaches in water decision-making within the HWP required both MNFN and water stakeholders in the NSRW to shift their attitudes—to be more open and work towards meaningful relationships. For some participants, the nature of the relationships between MNFN and the different water stakeholders was distant, sporadic, and disconnected from the real issues affecting people in this First Nation. Exclusion and lack of representation had marked the nature of water governance relationships, especially with government rights holders:

> When it came to different areas or different aspects of how we manage the water and what we do with our water I didn't see them [different government levels] really involved as much. (…) the relationship I don't think was as strong as it was supposed to be (Interview 06M First Nation water leader - female, Oct 2018).

> I think there was a problem or a disconnect when it comes to water matters, water programs are created by the federal government, the provincial government, and we're not necessarily included in designing those programs (Interview 01A First Nation water leader - male, Oct 2018).

When research participants shared what their relationships had been like with water stakeholders before the HWP, they talked about disengagement, distance, and uninterested attitudes. However, despite the weak relationships, for leaders in MNFN

the complexity of the water issues affecting their people required the participation and inputs of their water neighbours in the watershed. For some leaders interviewed, water has no boundaries, so it was necessary to work collectively, as one of the research participants indicated:

> We came together as a community first but soon we realized that it wasn't only the community that it was impacting so we needed to look out further. We brought all together, we knew it wasn't only impacting our community it was impacting our neighbours, water doesn't know no boundaries. It goes where it wants to go (Interview 08S First Nation counsellor - male, Oct 2018).

Collaborative efforts, however, required a shift from disengaged attitudes towards more active, approachable, respectful, committed, cooperative, engaged, and friendly attitudes that were seen to be lacking before this project began. For example, some participants observed that new relationships were born out of the HPW and that these were based on understanding, acceptance, and complementarity:

> We are trying to work together with them [water stakeholders] and coming up with good ideas on how we can work together to bring better drinking water to the communities, not just for First Nations, but all people (Interview 07G First Nation water technician - male, Oct 2018).

> I think that HWP was a chance for us to build up that relationship, or to mend that broken relationship, so that we can work together and live up to the treaties and how our ancestors promised, and the crown promised, to work together (Interview 06M First Nation water leader - female, Oct 2018).

> Mistawasis provided a very good guiding group to help us figure out how do we incorporate or bring in that Indigenous voice and knowledge into sustainable water management and in the context of reconciliation, it is our responsibility to make Indigenous Knowledge more part of our work strategy (Interview 06NSK non-governmental organization - female, Jul 2019).

Changes in attitudes provided opportunities for acknowledging the importance of restoring broken past relationships, the inclusion and recognition of Indigenous voices, knowledges, and worldviews in the governance of water. For research participants, by including Indigenous voices and knowledges, principles of reciprocity were also included, and that made the difference in the HWP.

5.8.3 Towards Structural Changes at Society and Individual Levels

In the HWP, working towards making structural changes at the individual and societal levels implied the inclusion of Indigenous values such as respect and reciprocity. Such values were present in the sense of honouring water by coming together and working together for the benefit of water and people in the NSRW. In the HWP, water was considered as a sacred living entity that ought to be respected. As one participant indicated, "We need to have respect for water and understand how powerful it is, and how strong we need to focus on protecting it" (Interview 04B First Nation health director - female, Oct 2018). If the relationship with water is respected, respectful relationships with people are possible, and ethical decisions in favour of water can be made. From this core premise of the HWP, the relationships built along the project involved individuals learning from different values, experiences, knowledge, and resources, which were brought by everyone who was involved in the project:

> Honour the Water was learning from each other, the different perspectives and understandings of water (Interview 01RBJ non-governmental organization - male, Jul 2019).

> Most of the partners from Honour the Water are from a different place, a different culture, a different belief system. They came and worked with our community, not knowing what to expect, or maybe even not ever working with a First Nation community before. But we've made good connections with them. We worked on our relationship building first just getting together for coffee or becoming friends first, and then working on important issues such as water (Interview 06M First Nation water leader - female, Oct 2018).

> When I work with Mistawasis, the feeling it's very much like we're individuals developing a relationship and when we talk about impacts to the community, we're not just talking about numbers or efficiencies. We're taking about people's homes or stories of the past. It's a lot more personal and linked to each other (Interview 06NSK non-governmental organization - female, Jul 2019).

At a societal level, the HWP presented opportunities for water organizations and First Nations to find similar interests and objectives for the sustainability of water. From these similarities, hierarchical governance approaches practiced in the past changed towards collaborative decolonial approaches for water decision-making:

> We had to find ways to combine all authorities [government authorities and MNFN authority] to work together. We realized that what our actions or our non-Indigenous neighbours' [actions] have impacted our community in terms of flooding, and we know what we do on Mistawasis will impact other communities. We wanna be good neighbours and work together (Interview 01A First Nation water leader - male, Oct 2018).

> We dialogue and talk with other key government agencies, as well as technical people, its institutions of higher learning, to come collectively to our community to help us resolve the issues of water issues in the community. So we looked at a collaborative approach, so we felt that in order to get to where we wanted to be with certain aspects of water issues in our community, we had to bring in more learned people who have had professional designations to key areas, at the same time bringing the policy decision makers from all levels of government to try and formulate and actually plan, moving forward, and this was the premise and basis around Honour the Water (Interview 02D First Nation Chief - male, Oct 2018).

> Honour the Water, I guess, has become a model not just for the community [MNFN] but a model for others on how to bring people together to work together on issues of common concern like water sustainability (Interview 09PAS non-governmental organization - female, Jul 2018).

As these quotations demonstrate, the HWP provided opportunities to understand water from a perspective of honour and respect. From this perspective, the relationships, dynamics, and actions between water rights holders and stakeholders changed to practices of understanding and power sharing, transforming the status quo and making progress towards reconciliation.

5.8.4 Dialogue Spaces Towards Recognition and Understanding

The inclusion of collaborative approaches provided room for dialogue in equal conditions while different worldviews and knowledge were acknowledged and valued for decision-making. Dialogue implied finding and providing spaces for acknowledging the differences, the history behind each stakeholder and rights holder, and from these differences to co-build a shared understanding. For research participants, dialogue represented the best tool to get to know their neighbours (Indigenous and non-Indigenous), who they were, what their water problems were, and how they could work together to solve the water issues affecting people at that moment. One of the participants in MNFN referred to dialogue as the action of reaching out to people outside of their First Nation that requires will and decision:

> If you don't have that dialogue with the non-First Nations that live off the reserve and the surrounding communities, how are they going to know? I know these last four, five, six years, that has been done, Mistawasis has been trying to reach out there talking to them [non-First Nations], and it has been working. If you just sit there and do nothing, nothing's gonna happen. You've gotta get out there and talk to these people. If you're not saying nothing, nothing's going to happen (Interview 07G First Nation water technician - male, Oct 2018).

Non-Indigenous partners also found opportunities for learning and understanding through dialogue:

> From dialogue, what we learned and talked informed how we do Nation-to-Nation building (…) we dialogued and talked bringing decision makers to formulate and actually plan moving forward, and this was the premise

> and basis around ’Honour the Water’ (Interview 07RRS non-governmental organization - male, Jul 2019).
>
> Different points of view from all parties rise in this project [HWP] (…) I think by taking in that knowledge from other partners we got a better idea or sense on how to make better decisions (Interview 04PWJ academic project - male, Jul 2019).

By working together to resolve water issues, MNFN brought their water neighbours to their table (face-to-face) to work together towards increasing understanding and co-learning new ways to interact with water and people.

5.9 Final Reflections and Conclusions

This paper has presented one experience in the Canadian prairies where water crises forced water rights holders and stakeholders to work towards collaborative water decision-making based on relationships of relationality, reciprocity, and respect. Such characteristics with ethical considerations needed for reconciliation in research and higher education in Indigenous contexts (for example, scholars have discussed the relevance of the Four Rs -relevance, respect, reciprocity and relationality, see Kirkness and Barnhardt, 1991; Castleden, Morgan and Lamb, 2012; Castleden et al., 2017). From these ethical considerations and characteristics opportunities for meaningful reconciliation processes were encountered in the NSRW. The HWP is one example of joint determination to do collaborative work to deal with complex water issues. By dealing with water complexities, water rights holders and stakeholders found pathways to transform disconnected relationships and to develop relationships based on trust, reciprocity, and respect. The foundational characteristics of this project—and their sum—contributed to meaningful initiatives and processes of transformative reconciliation that acknowledged MNFN water worldviews and relationships with water. The project provided opportunities to confront historical broken relationships and to recognize the current water inequalities MNFN deal with. Spaces for building trustful partnerships between rights holders and stakeholders were opened providing opportunities for beneficial synergies for people and their relationships with themselves, with Mother Earth, and with *Nipy* the water spirit. The HWP contributes to meaningful and transformative processes of reconciliation beyond traditional discourses of past

injustices. In other words, this project shows that restoring relationships involves changing structural colonial interactions governed by disconnection, marginalization, and harmful past relationships. The HWP demonstrated opportunities for restoring water governance by applying Indigenous governance principles of politics of kinship, including respect, reciprocity, relationality, and responsibility (Wilson & Inkster, 2018). Based on these principles, collaboration was co-built and became the perfect scenario to plant new relationships founded on the goal of transformative reconciliation.

In the exercise of finding resources and solutions to flooding crises, MNFN and their water partners found opportunities to identify the key characteristics of HWP and to honour water and build pathways to reconciliation. For example, MNFN and their water partners co-learnt how to build symmetrical relationships by joining in efforts that respected MNFN self-determination. The HWP was born in MNFN; thus, the Nation's principles, interests, needs, and rules were the guiding points along this project. Water stakeholders were invited to be part of MNFN's 'table' (or their project). At this table, common objectives were determined, resources were provided, opportunities for shared learning were encountered, and support was found. Collaboration was built on symmetrical relationships—relationships between Indigenous and non-Indigenous people where power was shared, similar roles were granted, and shared benefits were formed. Under symmetrical relationships, Nation-to-Nation approaches grew into meaningful collaborative water governance work. MNFN found in collaborative symmetrical relationships the opportunity to better understand their flooding threats while slowly building common ground of understanding with people outside of their reserve. During this project, MNFN voices and decisions, external resources, and capacity building were all valued.

Another important result of this project was a better understanding of what reciprocal partnerships mean. Relationships formed through the HWP evolved from casual meetings to trustful long-term partnerships. Partnerships were nurtured through investing time and engaging with people. As partners started to engage, the importance of understanding differences was revealed. They encountered different worldviews and perspectives on interacting with water and dealing with flooding issues. As these worldviews were shared and explained, dialogue, understanding, and agreements were built. For many Indigenous and non-Indigenous participants, the partnerships formed represented the success of their work and projects. The relationships born out of the

HWP lasted over time, providing chances for more collaborative projects on the well-being of water, Mother Nature, and people living in the watershed.

In the practice of honouring water, partners encountered opportunities for knowledge sharing. The project provided space for bridging western and TK by building capacity for the First Nation and for the non-Indigenous organizations. Flooding crises showed the complexity of present—and future—water problems where individual resources and capacities are not enough to overcome the challenges. MNFN required the scientific data and technical resources shared by their water partners, while the water partners learned the importance of water interconnections, principles, and sacredness. The bridges built provided a better understanding of the flooding dynamics, the causes of the problem, and the holistic solutions needed that could efficiently respond to the environmental, social, political, economic, and even spiritual needs. As a result of the bridges built between Indigenous and western knowledge, opportunities were presented to practice sustainable approaches in water governance. When partners understood each other's values, the water as sacred sprit perspective and water utilitarian perspectives were dismantled. For many of the non-Indigenous water organizations, the sacredness of water represented a threshold concept (see Loring 2020) in their work or a new door that let them to access to new ways to understand water, its value, and the relationships with it. In other words, water stakeholders found themselves in the exercise of building different relationships with water and Mother Nature. Honouring water meant giving agency to water, seeing water beyond only its use, and based on these parameters, managing water in the present for the benefit of current and future generations.

The experience presented in this paper is important because it demonstrates how bringing together concerns about and interest in water governance can overcome harmful colonial relationships and legacies. Through honouring water, MNFN led a project that provided solutions for their flooding and water issues while creating opportunities for the exercise of reconciliation. MNFN is not the only First Nation dealing with water problems while interacting with non-Indigenous water stakeholders. The experience reported in this paper provides insights that could be adapted to other contexts in Canada.

Due to the scope of this study, there were limitations in the analysis of the different partnerships built along the HWP. The purpose of this research was to recount

the process of this project while identifying the positive outcomes from it. However, it would be naïve to say that every single relationship was the same. Depending on the nature of the organization—if it was governmental, or non-governmental—the dynamic of the partnership varied and the response to reconciliatory pathways changed too. It will be important to follow up on the partnerships formed during the HWP to see how they evolve. Future research could address the relationships with government organizations, typically the funding providers for any water project. Bureaucratic challenges are often encountered, making it difficult to sustain trustful relationships over time. Research can provide important insights about the particular dynamics in the relationships between government agencies and Indigenous Nations, and the particular strategies to improve collaborative work in water governance. Government agencies could be more open to be active participants in research and benefit from opportunities for engagement and building relationships with Indigenous nations that are demanded for transformative processes of reconciliation.

CHAPTER 6 - CONCLUSIONS AND REFLECTION

6.1 Introduction

This research provides new knowledge to advance the conceptual and practical building blocks of collaborative water governance through examining the meaning of water governance for one First Nation in Canada—Mistawasis Nêhiyawak. This chapter begins with a brief review of the purpose and objectives of the thesis, followed by a summary of specific contributions from individual chapters (i.e., Chapters 3, 4, and 5). It then more broadly discusses the academic contributions of this research. The chapter ends with a short discussion about the challenges encountered in the research processes, as well as some recommendations for future work.

6.2 Purpose and Objectives

The overall goal of this research was to understand the meaning of water governance for one First Nation in Canada—Mistawasis Nêhiyawak (MNFN). Four key objectives guided this research, each contributing both to the overall understanding of water governance in the context of Indigenous Peoples, especially in Canada, and to the concept of collaborative water governance as an alternative decolonized approach to water governance. By using MNFN as case a study, a local example of a collaborative governance approach was presented and documented. This research provided relevant insights about water governance challenges, opportunities, and efforts that rights holders and stakeholders face in achieving the sustainability of water in the North Saskatchewan River Watershed (NSRW).

This dissertation addressed four research objectives developed in sequential phases. The first objective (Chapter 3) was to identify the conceptualization(s) of water governance defined in the academic and non-academic literature in the Global North (including Canada) and to describe the role of gender. Also identified in Chapter 3 were gender, socio-cultural, and political traits, and challenges structuring water governance for Indigenous Peoples in the Global North. The second objective (Chapter 4) was to conceptualize the meaning of water and water governance from the worldview of MNFN. The specific aim at this point in the research process was to engage and partner with MNFN and to co-identify and understand the meaning(s) water and water governance have for people in this First Nation. The third objective (Chapter 4) was to

co-create a holistic water governance framework with MNFN, with the aim of enhancing participation, empowerment, and opportunities for decision-making for Indigenous Peoples. Based on the meanings of water and water governance co-identified in the second objective, a different model for water governance was collectively co-developed, which would resonate with MNFN water worldviews, principles, knowledge, and interests. The final objective, objective 4 (Chapter 5) was to document the attributes of a collaborative water governance process as a means to inform and contribute to meaningful reconciliation in the NSRW and possibly Canada. Objective 4 was developed in Chapter 5 by documenting the Honour the Water Project, a notable water governance experience lived by MNFN and their water partners, that contributed positively to the co-construction of meaningful reconciliation in the NSRW. By addressing the four objectives proposed, the central contribution of this dissertation documents a collaborative water governance experience in the NSRW that may provide the elements and foundations needed to de-construct colonial structures in Canadian water governance processes.

6.3 Major Findings

Collaborative water governance involves participatory, equitable, and inclusive processes of formal arrangements in water decision-making. These processes incorporate the views and voices of minorities—the most vulnerable in society (Brisbois & De Loë, 2016b; Von der Porten et al., 2016; Von Der Porten et al., 2015). Cited as a critical regimen for addressing water governance problems in Indigenous contexts, collaborative water governance can resolve conflicts and improve rights holder and stakeholder relationships (Harrington, 2017; Von der Porten & De Loë, 2013a). In Canada and the Global North, however, collaborative water governance remains a challenge when power asymmetries in the governance system are perpetuated by colonial structures based on discrimination and marginalization of Indigenous Peoples. Studies reporting the unequal water conditions that many Indigenous Peoples experience compared to the mainstream society reveal the critical socio-political and governance problems that need to be recognized and confronted. Collaborative water governance is challenged to incorporate Indigenous principles, ontologies, and epistemologies that defy colonial legacies of 'power over' entrenched in the system and

move towards ‘power with’ approaches and actions aligned to social justice and environmental sustainability (Bradford et al., 2017).

Chapter 3 explores the literature on water governance and gender in the Global North, using a scoping review methodology. This review provided an opportunity to understand the role that gender plays in water governance in the Global North and to uncover the challenges and opportunities for inclusive water governance models. Chapter 3 highlights three major findings for water governance in the Global North, including Canada, and specifically Indigenous Peoples. First, water governance is rife with gender inequalities, which have been neglected in the Global North (including Canada). The literature challenges the Global North to understand that the complexity of their water problems largely derives from inequalities perpetuated in the water governance system, including gender inequalities. Appropriate, acceptable, affordable, and adequate access to secure water for everyone requires the acknowledgement of gender differences in the access to and use of water, as well as gender roles in water decision-making. Especially needed are women’s water roles, knowledge, and expertise to support more inclusive, participatory, and collaborative water governance systems in the Global North. Indigenous women, as the most affected by water disparities, are demanding the de-construction of water governance structures founded in doctrines of inequality, discrimination, and social exclusion. They are raising their voices for the recognition of their TK and connections to water by improving spaces for active collaboration and participation in water decision-making.

Second, intersectional approaches are needed to better understand the complexities behind gender disparities in water governance in the Global North, especially for Indigenous women. In the Global North, gender inequalities in water governance need to be recognized as the result of the interaction among different social categories (e.g., ethnicity/race, gender, and geographic location) that reinforce power asymmetries and discriminatory dynamics, affecting the most vulnerable. Intersectional approaches need to be included in the theory and practice of water governance to support changes in the social, economic, and political hegemonies of water access and use in the Global North. Both in theory and practice, interdisciplinary and transdisciplinary expertise, frameworks, methods, and language need to be promoted to recognize and better address the perpetuity of gender discrimination practices in water governance in the Global North. Intersectional approaches are crucial in the context of

Indigenous Peoples. Gendered water inequalities in Indigenous contexts are based not only on gender issues but also on racial, ethnical, and socio-economic class categories, which play a role in the relations of power and privilege. Application of intersectional approaches and frameworks is needed to further understand the impact that gender, combined with other systems of power, has on access to safe water for Indigenous Peoples and women in countries like Canada.

Thirdly, to understand and better address gendered water governance challenges in the Global North, context-specific analysis and participatory approaches need to be strongly incorporated. Bottom-up approaches that involve different knowledges, expertise, and shared power can make water governance systems more inclusive. Gender-equity-based participatory models are needed as frameworks to ensure balance of power and empowerment, especially for Indigenous women. Moreover, gender-equity-based models need to account for local differences in water institutions, social structures, and systems of rights that shape water governance systems. These differences shape specific water governance systems and address how the system should respond to gendered inequalities. For Indigenous women, both local and participatory approaches to conduct gender-based analyses gender are pivotal. Although Indigenous women's water needs vary from context to context, their interest in and demand for participation in power are increasing and louder. Together, overall, these three key findings (Chapter 3) suggest that improvement in water governance in Canada and the Global north, and for Indigenous women specifically, require attention: recognition of the role that gender and women play in water governance; intersectional approaches that can reveal the different social categories influencing water-gendered inequalities; and local and participatory approaches to address more holistically gendered water disparities. Chapter 3 raises key questions about how the Global North is understanding gender inequalities, as well as the role that gender is (and could be) playing to represent more inclusive water governance systems in their social and political contexts.

Using a Phased Sequential Partnership-Based and Co-designed Methodological Approach, Chapter 4 focuses on understanding the meaning of water, and from this understanding, co-constructing a collaborative water governance framework with MNFN. Well-understood challenges to water governance for Indigenous peoples in Canada include colonial legacies that establish asymmetric power relationships in water decision-making affecting Indigenous peoples' safe access to and relationships with

water (Day et al., 2020; Von der Porten & De Loë, 2013a; Wilson, 2019). In Canada, practices of marginalization have underrepresented and undervalued Indigenous water ontologies, epistemologies, self-determination, and real needs within the mainstream water governance frameworks (Basdeo & Bharadwaj, 2013; Bradford et al., 2017; Von Der Porten & De Loë, 2014b; Wilson, 2014).

The Mistawasis Nêhiyawak Honour the Water Governance Framework described in Chapter 4 provides valuable Indigenous insights into the literature and the practice of collaborative water governance in Canada. Three major findings of Chapter 4 are emphasized. First, collaborative water governance needs to be founded in Indigenous ontologies, epistemologies, identity, and self-determination. This foundation contributes to real and tangible room for shared spaces of power in decision-making, better consensus achievement, and shared accountability of sustainable water governance processes and outcomes. Current water governance complexities demand collaborative efforts that can acknowledge different knowledges and expertise. Therefore, collaborative water governance should be seen as a constructive process in which hybrid pathways and strong partnerships between western and Indigenous managers, planners, and knowledge systems are co-built.

Second, the conceptualization of water needs to evolve from utilitarian perspectives to relational perspectives based on kinship that respect water as a living being. By understanding water as sentient, relationships of power and dominion over water are dismantled while a sense of accountability develops, and water is honoured. Relational approaches in collaborative water governance contribute to positive changes in the dynamics of water decision-making: Collective benefits take priority over individual ones; ethical considerations find space over economic benefits, and sustainable pathways can be better accomplished. Another contribution is the practice of decolonized approaches in water governance, which are demanded by Indigenous Peoples in Canada, who are calling on the Canadian government to apply them. Thirdly, shared dialogue as the axis of collaborative water governance provides opportunities for bridging different ways-of-being with water and knowledge of water. Boundaries between different systems of knowledge are crossed, opening space to translate local wisdom, knowledge, and interests around water. Shared dialogue contributions to collaborative water governance arrangements include opportunities for local empowerment, while decolonized insights contribute to the sustainability of water

governance. Overall, the results reveal that holistic and more sustainable actions and better response to local Indigenous water needs and demands can arise from collaborative water governance inclusive of Indigenous water ontologies, epistemologies, needs, and self-determination.

Chapters 3 and 4 both provide insights into the theory and practice of water governance in the context of Indigenous Peoples by using different methods and research approaches (e.g., scoping review and CBPR). These chapters explain and analyse the challenges in current water governance systems as they try to include and provide equity for the marginalized in countries like Canada, especially for Indigenous Peoples. Decolonized processes in water governance are needed to dismantle racism and violence historically perpetrated against Indigenous Peoples. To achieve change, the power structure must become emancipatory and empowering and socially and environmentally just. Social and environmental justice includes the legitimization of Indigenous governance principles, ontologies, and epistemologies, missing not only in the water governance structures and policy making but also in research. In addition, both chapters reflect on the importance of different and more inclusive water governance frameworks able to confront the complexity of water problems and water governance, acknowledging and confronting the systemic and colonial water inequalities Indigenous Peoples face.

Chapter 5 documents a novel collaborative water governance experience in the NSRW in Canada, demonstrating the foundations and characteristics that are needed for meaningful processes of reconciliation in water governance. Colonial legacies in water policies and governance systems challenge real and meaningful processes of reconciliation in Canada. Reconciliation implies healing colonial legacies lived through practices of racism, marginalization, and inequality experienced by Indigenous Peoples in water governance. Collaborative water governance is proposed as one strategy for co-building new political, organizational, and administrative water governance structures inclusive of Indigenous Peoples' worldviews, knowledge, history, and needs for meaningful contributions to reconciliation.

The HWP, lived in MNFN and documented in Chapter 5, provides valuable insights for reconciliation in the water governance literature and in practice. First, collaborative water governance needs to be based on relationships of relationality, reciprocity, and respect. Indigenous Peoples in Canada are demanding shared spaces of power and

decision-making, where their water worldviews based on relational accountability to all relations can be legitimate. Reconciliation in Canada requires new pathways for water stewardship and responsibility, pathways that can be of real mutual benefit for Indigenous Peoples, western mainstream society, and water as agency. Second, partnerships, inclusion of Indigenous values and knowledge, shared dialogue, and shifts in previously unjust relationships were identified as crucial characteristics in water governance for meaningful processes of reconciliation. These characteristics contribute to the construction of decolonized collaborative governance processes that are crucial for the solution of water governance problems in the context of Indigenous Peoples. Including these characteristics in water governance dismantles practices of exclusion and marginalization that historically characterized the relationships between water rights holders and stakeholders. The findings of Chapter 5 highlight that restoring relationships of reconciliation means making changes in colonial interactions ruled by disconnection, marginalization, and harmful past relationships. Chapter 5 raises key questions about the understanding that reconciliation has for Indigenous Peoples and western mainstream Canadian society, and, from this understanding, the opportunities that exist to embrace and address past and current water injustices. Chapter 5 was built on the key contributions to Chapters 3 and 4. Even though, water gender inequalities in water governance were not explicitly referred in Chapters 4 and 5, they were inferred in the importance that traditional knowledge has to honour water. Explicitly, gender inequalities were not the main concern for research participants; however, that does not mean that water gender inequalities are not present in water governance for MNFN as part of the NSRW. For MNFN research participants water governance requires co-building and should be practiced and based on their traditional knowledge. This includes efforts to re-learn the connections between Water spirit and women, who are the water care givers. For this case study the gender inequalities represent the loss of their traditional connections to water due to the different process of assimilation that MNFN has and continues to encounter. By confronting and addressing the loss of their cultural connections to water, gender inequalities might be better recognized.

MNFN and their water partners acknowledged also that honouring water meant building new relationships with water and people and building bridges of transformative reconciliation in practice. The HWP represented a social learning process that keeps growing inside of MNFN and outside. The collaborative water governance experience

lived through the HWP represented a guiding point towards transformative reconciliation in the NSRW, contributing to sustainability of water frameworks and governance in Canada.

6.4 Contributions

This dissertation responds to a need to improve both in theory and practice water governance in Canada and, more specifically, in the context of Indigenous Peoples. Water governance systems have been predominantly based on western worldviews and knowledge, resulting in an imbalance of power in water decision-making. This imbalance of power has delegitimized Indigenous voices, knowledges, and inherent rights (such as self-determination), negatively impacting their health, social, cultural, and spiritual well-being. Indigenous Peoples are demanding the recognition and legitimization of their water worldviews and knowledges in water governance to address historical disputes of equity and justice and to practice meaningful processes of reconciliation. Although collaborative water governance has been proposed as an approach and step forward to confront water governance challenges in Indigenous territories, more work is required to improve collaborative governance approaches. This research has focused on the importance of recognizing and legitimizing Indigenous principles, ontologies, epistemologies, and self-determination in collaborative water governance as a path to reconciliation. Water governance as a system requires the understanding of specific sociocultural relationships between water and people. This understanding goes beyond water's utilitarian purpose and moves towards relationships of honour and respect. Reciprocity is a fundamental aspect of successful collaborative efforts in water governance. In addition, the value of opening spaces for equitable, reciprocal, and complementary dialogue has been highlighted in this thesis research. Complex water governance problems demand opening dialogue spaces that respect and bridge different knowledge systems and create paths to achieve sustainable solutions.

Globally, there is an increased interest in cultivating more collaborative approaches to water governance with Indigenous Peoples. However, the lack of recognition and awareness of the importance of Indigenous Knowledges and self-determination challenges the usefulness and efficiency of this approach. Collaborative water governance settings are challenged to learn from Indigenous cultural backgrounds, historical processes, and water needs. Radical changes in the mainstream

mindset are essential to see Indigenous Peoples as proactive partners, who have voices, rights, knowledge, and expertise that can help address water issues. From these radical changes, reconciliation can become real. The dissertation demonstrates that collaborative practices in water governance and awareness of Indigenous principles and governance can benefit Nation-to-Nation approaches and open more sustainable pathways for the well-being of people and water.

6.4.1 Theoretical Contributions

This research contributes to ongoing academic inquiry into the conceptual understanding of collaborative water governance in the context of Indigenous Peoples and transformative reconciliation. In relation to collaborative water governance current theory calls mainly for three points: the importance of inclusive and representative processes of decision-making in water decision-making (Brisbois & De Loë, 2016b; Orr et al., 2015; Von der Porten & De Loë, 2013[a]; Von Der Porten & De Loë, 2014b), the reassertion of Indigenous self-determination (Castleden, Hart, Cunsolo, Harper, & Martin, 2017; Von der Porten & De Loë, 2013a; Von Der Porten, De Loë, & Plummer, 2015; Wilson, 2020); and the recognition and inclusion of Indigenous worldviews and knowledge in water decision-making (Bradford et al., 2017; De Loë & Patterson, 2017; Montgomery et al., 2015; Von der Porten & De Loë, 2013a; Von der Porten et al., 2016). In response to the first point, this dissertation presents a collaborative water governance framework and a collaborative water governance experience that are the result of the active participation of MNFN. The importance of building and fostering relationships between water right holders and stakeholders is also demonstrated through the collaborative water governance experience presented. In both, the framework development and the water governance experience, MNFN played an active and leading role in how collaborative water governance should be understood and practiced. In the process of developing the water governance framework and in the collaborative water governance experience documented (both led by MNFN), a mutual understanding of collaborative water governance was achieved. Collaborative spaces were opened through the opportunities for stakeholder and rightsholders within the NSRW to sit together at the same table with equal power and with equal opportunities to disagree and/or agree perspectives. From this premise, opportunities for being at the same table are encountered in the framework as well as in the experience of the HWP. In the

framework, MNFN research participants discussed and agreed that the trunk represents the canal of dialogue in which equality is achieved through water right holders and stakeholders coming together to sit at the same table and encounter differences, but also at the same time finding opportunities for collaboration in those encounters. The encounters of dialogue were experienced and presented through the HWP where solutions for water crisis were found in open and shared tables where the sacredness of water and the building of trustful partnerships were understood and recognized. Under these conditions, power imbalances in decision-making were better addressed in terms of funding, time, and conflict resolution. Both, water right holders' and stakeholders' interests, knowledge, and relationships were acknowledged. This opportunity for the recognition of diverse knowledge, interests and building of relationships through the HWP represented the basis for successful collaborative processes of decision-making that was experienced in MNFN. In turn, this success intends to be replicated and institutionalized through the proposed MNFN Honour the Water framework.

In response to the second and third points (reassertion of Indigenous self-determination and the recognition and inclusion of Indigenous worldviews and knowledge in water decision-making), the framework and the experience of the HWP provides insights about the recognition and inclusion of Indigenous water worldviews, epistemologies, and self-determination. In this dissertation, collaborative water governance is grounded in the Nehiyawak worldviews, knowledges, and self-determination. The MNFN framework re-asserts their self-determination by framing water decision-making under their traditions, knowledge, identity, and worldviews. The co-creation of the framework brought reflections from elders, leaders, and members of the First Nation about water relational ontologies and epistemologies that defy the current colonial water governance structures within the NSRW, and in a larger perspective within Canada. The framework focuses on a sustained well-being for water (having its own agency) and for people. Colonial understandings of water as a resource that can be owned, managed, used, and capitalized were challenged. Water and its value are understood from ethical and spiritual attributes that place water in a sacred position. From this sacredness, relational ways-of-being-with water are encountered. In other words, water right holders, stakeholders, and researchers were confronted with relationality and accountability to water as the life provider, and to each other as partners in the governance system.

The contributions presented, within this thesis, for the practice of collaborative water governance are seen as direct contributions to the discussions and theory of transformative reconciliation. Specifically, there are two contributions: to understand reconciliation as a process where unjust relationships between Indigenous and non-Indigenous People are reshaped and Indigenous Peoples' self-determination, worldviews, and knowledge are acknowledged (Borrows & Tully, 2018); and to experience reconciliation by restoring relationships with more-than-human living beings (Ladner, 2018; Starzyk et al., 2021; (Tully, 2018); Tully, 2020). The water experiences and framework are grounded on the recognition, incorporation, and validation of MNFN knowledge, worldviews, and self-determination. The practice of the HWP and the co-construction of the Honour the Water Framework involved the recognition of broken and unjust relationships of power between water rights holders and stakeholders that perpetuated water injustices for MNFN. In this thesis for example, MNFN non-Indigenous water partners reflected on the lack of access MNFN has to safe water, their problems of underground water contamination because of agricultural practices in the area, the lack of financial resources and capacity building that MNFN faces, as well as the lack of representation and power MNFN has in relation to water decision-making outside their boundaries. By recognizing all these problems as structural challenges, MNFN and their water partners found spaces to practice relationality, reciprocity, respect, responsibility, and complementarity as foundations of a transformative reconciliation process. In other words, the MNFN water experiences and water governance framework documented in this dissertation revealed the solid efforts towards encounters for trustful and reciprocal partnership building, opportunities for the bridging of western scientific research and technology with traditional knowledge, and the positive outcomes and solutions for water problems affecting, not only people within the NSRW, but also to water as a sacred and living entity.

The proposal of water as a sacred entity with its own agency provides space for the understanding and practice of reconciliation not only between water right holders and stakeholder but between water and people. Honouring water implies the recognition of water's agency as the life provider. Ethical values frame the relationship with water (reciprocity, respect, responsibility, and relationality). Under these ethical values, MNFN water governance framework and experiences contribute to de-construct colonial water governance structures based on the dominion over nature. Relationships

of dominion over are contested by relationships of power-with-and-for-each other as Tully (2020) proposes. In other words, relational water ontologies were (and still are) the foundation for achieving solutions to the water threats and challenges MNFN faced (and still faces). Relational approaches in collaborative water governance are considered in this thesis as advancements in water decision-making. Broken and distrustful relationships were de-constructed to reconciliation processes that embrace spaces for the validation of Indigenous knowledges, opportunities for dialogue in equality, and spaces for co-building trustful partnerships.

This research (scoping review and case study) extends the findings of current debates (see de Loë & Patterson, 2017; Harrington, 2017) and identifies that the analysis and theoretical approaches to water disparities and water governance challenges are changing. This change involves shifts away from positivist ontologies rooted in objectivity and colonial understandings towards decolonial ontologies based on intersectionality, transdisciplinarity, diversity, and holistic perspectives in water governance. Simple answers are not part of the solutions to water governance problems and challenges; rather, the complexity behind the problems demands local, collective, and collaborative efforts to dismantle colonial power asymmetries in water governance structures. In the context of marginalized groups such as Indigenous Peoples and women, attention needs to be paid to colonial water systems of inequity, oppression, and marginalization that impede participation, inclusion, and legitimization of Indigenous and women's voices in water decision-making. Therefore, it is essential to foster collaborative forms of water governance respectfully and to learn Indigenous ways-of-being with water.

6.4.2 Methodological Contributions

This dissertation contributes to practices of de-colonized research. As it was stated at the beginning of this dissertation, decolonized research responds to Indigenous needs and inquiries while research is developed based on Indigenous worldviews and knowledges (Agrawal, 1995; Berkes, 2012; McGregor, 2018). At the same time, decolonized research implies the leadership of Indigenous Peoples in the processes of knowledge production while empowering processes of doing research for social justice (Agrawal, 1995; Ball & Janyst, 2008; Berkes, 2012). Under these precepts, this dissertation intended to respond to decolonized research by recognizing and

empowering MNFN's voices and water experiences as the meaning of water and collaborative water was identified and analysed. This dissertation consciously intended to recognize the MNFN's authority in what objectives the research should respond to, how the research should be conducted, who should be involved in the research process, and how the research responded to the local water governance needs. The exercise of knowledge production responsive to MNFN's authority and needs involved also exercises of critical reflexivity. Critical reflexivity included the opening of spaces for relationality and reciprocity while recognizing other ways-of-being-with water. Critical reflexivity implied a process of self-awareness where I was able to recognize myself as part of the social reality I was studying. In other words, critical reflexivity required efforts of self-introspection on my values, my social background, and my assumptions on the meaning of water and water governance. I was confronted to recognize my colonial mind structures that understood water as a resource in nature at my service. Along the research process those perspectives and understandings changed to understand water from a sense of sacredness and life while learning and applying ethical concepts linked to relationality, reciprocity, and responsibility.

The understanding and practice of relationality (connectedness or relationships), reciprocity (mutual benefits), and responsibility (being accountable) became key points in this dissertation. The three elements represented core ethical guiding values for the processes of knowledge compilation, validation, analysis, and presentation. For example, knowledge compilation, validation and presentation involved respectful processes of engagement and relationship building as well as learning local protocols (relationality). The incorporation of the protocols framed the research within Indigenous ways to relate to knowledge and diminish issues of power in knowledge production. For example, local protocols included offerings of tobacco to the elders and knowledge keepers. The offerings showed the respect I had for the relationships built with research participants while been mindful of their time and knowledge shared. Local protocols also included the official presentation of the research project to Chief and Council members in MNFN. At this encounter, a formal relationship was stablished that guaranteed research accountability for the benefit of water and the people in MNFN.

Responsibility was also important as part of the decolonized efforts in the research process that were in place in this dissertation. For example, for data analysis, as the non- Indigenous researcher, I was responsible or accountable to MNFN of how the

data was used and shared in academic sources and venues. In response to this responsibility, both co-researchers were aware and in agreement with the means used to share knowledge like academic conferences and papers. In response to reciprocity in data presentation both co-researchers' authorships were stated in the papers co-produced as well as oral presentations or posters presented in academic and non-academic conferences.

As relational, reciprocal, and responsible encounters and relationships were co-built between non-Indigenous researchers (myself and my supervisor), co-researchers, and research participants there were more opportunities to build trust. Trust with co-researchers and research participants slowly grew through constant and different opportunities for interactions, conversations, and reflective spaces. These spaces for dialogue and reflection were usually found at the different events I was invited, at the spaces were interviews and focus groups were hold, and even at informal settings like coffee meetings inside and outside of MNFN (specifically with both co-researchers). Trust was evidenced when these conversations were held in respectful terms, acknowledging the different backgrounds and experiences, and through means of reciprocal gratitude (special gifts or sharing food). Trust was also tested through the dynamics of power in knowledge co-production between different knowledge systems. Power imbalances in knowledge were contested by constantly having the revision and feedback from both co-researchers. As members of MNFN they were actively involved especially at the data collection and analysis stage by providing inputs into the interviews and focus groups' questions guides, development of the processes for interviewing and focus groups as well as in the process of data analysis by approving the themes of analysis selected.

Under the characteristics described in the previous paragraphs, the dissertation was guided by ethical considerations that intended to support the respectful cocreation of knowledge which involved the methodological approaches and methods employed within this dissertation. Ethical considerations and guidelines were provided by MNFN (described in the previous paragraphs), and also by the Ethical Board of the University of Saskatchewan. For the latter the ethical principles relate to respect for people involved in the research process and the project; awareness on the welfare of research participants; and equitable and fair approaches in the research methodology. In regard to

trust, this dissertation paid respect to research participants by recognizing their cultural backgrounds and water worldviews without diminishing their intrinsic value as human beings and their autonomy. Trustful research practices in the methods used to collect data with MNFN and their water partners (interviews and focus groups) were sensitive to historical settings of colonization, issues of discrimination, and awareness of each participant's cultural background. The awareness on the welfare of research participants were crucial at the physical, mental, and spiritual levels. Research methods in this research intended to be mindful of research participant's vulnerabilities or sensitive topics or situations. To avoid impinging upon participants' vulnerabilities, the interviews and focus groups scripts were reviewed and approved by both co-researchers as well as the Ethical Board at the University of Saskatchewan. Finally, equitable and fair approaches in the research methodology were also important by levelling the power in research. Power in research was shared between the non-Indigenous researchers and the co-researchers as members of MNFN putting into discussions every stage of the research process, the methods used, and the results obtained.

6.4.3 Practical Contributions

The results of this dissertation contribute to the discussions that contest colonial water governance structures. The HWP represents a collaborative water governance experience within the NSRW that is beneficial for the well-being of water and people. This case study provided reflective spaces for right holders and stakeholders on their role as water responsible holders that are accountable to water and to each other. The dissertation brings to the public a collaborative water governance process that highlights and provides lessons regarding the importance of partnerships, trust, and the recognition of the sacredness of water within a water governance system. Rights holder and stakeholders, expressed through interviews, that partnerships, trust, and the awareness of the sacredness of water were foundational elements experienced and lived through the HWP. These elements were foundational because through the HWP, water governance was framed under relational ontologies, which provided space for reflections about the interconnections that both NSWR rights holder and stakeholders have to water and to each other whether they were Indigenous or non-indigenous peoples. From this perspective, many collaborative water governance practices within the NSRW were ruled by a sense of accountability to the well-being and benefit of each

other. Shifts in attitudes in the relationships with water and between water responsible holders (water right holder and stakeholders) resulted in more effective collaborative efforts in water decision-making among the partners within the HWP. According to the dissertation results, effective collaboration experienced by MNFN included finding support to access technical and financial resources, performing active roles and participation in decision-making at the local level, opportunities to empower their identity, traditions, and knowledge, along with the opportunity to reconcile broken relationships from a nation-to-national level with non-Indigenous partners involved. The HWP experience documented in this dissertation can provide insight to other First Nations and water stakeholders in the NSRW on the process of how to question the current water governance system and develop better collaborative governance arrangements and practices of meaningful reconciliation in Canada.

The results of this dissertation point to the fact that water governance in the NSRW requires a hydro-social system approach where water system challenges, governance, and threats are addressed through an initial process where water responsible holders come to the table together to create space where understandings of water meanings, human activities, collaboration, and water governance are understood. This is considered an integral process for the governance of a water system and for collaborative decision making among water responsible holders. In the NSRW, a hydrosocial understanding of water governance was important because the hydrosocial analysis provided through the HWP created space for a better understanding of the conceptualizations of water governance for all water partners. By this type of analysis, the water responsible holders of the HWP could contribute to the de-construction of mainstream water governance foundations that underrepresent Indigenous water ontologies and epistemologies.

This dissertation reframes water governance according to MNFN water ontologies and epistemologies providing opportunities for the practice of reconciliation in the NSRW water governance system. Reconciliation was practiced when non-Indigenous water partners recognized and understood MNFN's water ontologies that included the way in which this First Nation relates to water. A greater sense of, and ways to honour and respect water within the NSRW grew from the understanding of MNFN's water ontologies, values, and practices. By honouring water, reconciliation was implied as a healing process of the relationships between water and people. By

healing the relationships with water as the sacred spirit, the relationships' restoration with non-Indigenous water partners was implicit for MNFN.

6.5 Challenges Encountered and Recommendations

This dissertation is the result of a research journey in which I encountered challenges and learning opportunities. One of the primary challenges faced was time. As a non-Canadian, I had to invest time to deeply understand the history and colonial legacies Indigenous Peoples live with in Canada. Different resources were useful in this learning process, including resources outside of academia. I found it useful to get involved with organizations working with Indigenous groups in the city. The interaction with them provided me with local knowledge and perceptions that sometimes are hard to find in academic sources.

I also experienced time limitations in the work done on the case study, as I engaged with people in MNFN, learned from their history and experiences, and de-constructed my ways-of-being-with water to understand theirs. Time limitations restricted deeper interactions with local people and hindered learning opportunities. As an outsider, I worked hard on finding opportunities to engage and interact with people, so they could know who I was, where I was coming from, and why I was in their community. Having two local co-researchers along the research journey was pivotal; however, relationships needed a personal touch that only I was able to convey and slowly build on.

Another challenge was participation of local people in the research. My co-researchers and I tried to reach different people to be part of the interviews and the focus groups. However, local people had a hard time committing time due to their different personal responsibilities. The participation of government organizations as water partners was also limited. Provincial and municipal representatives said that they did not have time to participate. These responses raised questions about the government representatives' interest in, will for, and commitment to collaborative work.

An additional challenge was communicating the results in MNFN. Some of the results were presented in person to research participants. A second event was planned to present the final results in the fall of 2019. However, different events happening in the First Nation kept the two co-researchers busy and delayed this event until late January 2020. Ultimately, the event was cancelled due to the threat of COVID-19. Although I

could not share the final results with the wider MNFN community, I shared them with both co-researchers, and they validated the information. Because I keep involved with MNFN working with people and the schools in the Nation I plan to discuss with the Chief and councillors about how they would like the thesis' results to be shared -maybe a short and simple executive summary or any other option they think is beneficial for the Nation.

The research process documented in this dissertation provides recommendations for future research. When research with Indigenous Peoples is anchored in collaborative and participatory approaches, it results in learning opportunities to better understand relationships, partnerships, commitment, and responsibility. The elements of the framework proposed in the Honour the Water Framework co-built with MNFN provide insights for researchers and decision-makers about the priorities this First Nation has for water governance. Even though the framework will not necessarily fit the expectations of every Indigenous Nation in Canada, the framework and experience documented provide guidance for those wishing to conduct similar studies with other Indigenous groups. Future research could focus on applying and incorporating similar frameworks and collaborative approaches to understand the political, economic, and social challenges encountered in practice.

From my research experience, I strongly suggest that future research should consider the importance of investing time with local people. Relationships and trust were developed slowly and as those relationships got stronger, I found more opportunities to discuss water issues and injustices that confronted personal challenges for many of the research participants (for example memories of discrimination experienced at some point in their lives). It is hard to estimate the length of time that should be invested, there is no rule, and it will depend on the dynamics and characteristics of each First Nation or local group. Time for engagement and relationship building could represent a successful starting point in a collaborative water research project or water governance project. However, time for engagement and relationship building among Nation members can represent a challenge when the research project has to fit western time frameworks established for graduate education and research project funding. From my experience I consider CBPR with Indigenous Nations provides the flexibility, adaptability, and collaboration required that are

necessary and mutually beneficial for positive results that are action-oriented and benefit researchers and research participants.

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APPENDIX A: INTERVIEW GUIDES

COMMUNITY INTERVIEW GUIDE

Naturalizing:

1. Could you share with me how long have you been living in Mistawasis?
2. What makes you feel proud about Mistawasis?

Assigning Competence:

3. What are the main water issues that you have noticed in the last 5 years, 10 years, 20 years in Mistawasis?
4. How have these water issues affected you, the life of people here, especially any vulnerable groups?
5. Why do you think these water issues have happened?
6. What actions is Mistawasis taking to prevent these water issues in the future?
7. What do you think could be done to prevent these issues?

Getting the details:

8. What does water decision-making mean to you?
9. What does governance mean to you? Do you think decision-making is the same as of governance? If not, how do they differ? If so, how are they the same?
10. In Mistawasis, how are water decision-making roles allocated? (who takes decisions and how decisions are taken, when are they taken)
11. Are local people in Mistawasis involved in water decision-making? How?
12. In flooding events in Mistawasis, could you recall what actions were taken to cope with the problem? Who was in charge of decision-making? Who participated? (inside and outside Mistawasis). What were their roles/responsibilities?
13. Why are water issues in Mistawasis hard to solve?
14. How are the Federal, Provincial, and Municipal governments involved in water decision-making in Mistawasis? What do you expect from them in terms of effective water decision-making?
15. What do you think about the role of the Band Office and its authorities to address water issues in Mistawasis? What do you expect from the Band office and its authorities in terms effective water decision-making?
16. Can you share with me any water projects that are occurring in Mistawasis?
17. What do you know about the project "Honour the Water"? How did it benefit Mistawasis?
18. Do you know which external organizations are collaborating with Mistawasis on water projects?
19. Do you know which external organizations were collaborating with Honour the Water Project?
20. How do you see the relationship between these external organizations and Mistawasis? How do you think the relationship could improve?

Getting Deep:

21. What values and principles need to be incorporated in water decision-making for the benefit of people in Mistawasis?
22. What values and principles need to be incorporated in water decision-making for effective inclusion and participation of gender in Mistawasis?
23. What does collaboration mean for you? How do you see collaboration in water decision-making?
24. What types of (environmental and social) knowledge are recognized and favoured in water decision-making in Mistawasis?

25. What does water mean for you?
26. What is traditional knowledge for you?
27. Is traditional knowledge important for water decision-making in Mistawasis? Why?
28. What role should play elders in water decision-making for Mistawasis?
29. What role should play youth in water decision-making for Mistawasis?
30. What role should play women in water decision-making for Mistawasis?
31. What role should play men in water decision-making for Mistawasis?
32. What does reconciliation mean for you?
33. How can reconciliation help for effective decision-making in Mistawasis?
34. Could you share with me if you have heard about self-determination? what does it mean for you?
35. Do you think that self-determination important for water decision-making in Mistawasis? Why?
36. What is dialogue for you?
37. Do you think that "dialogue" or talk to others is a key strategy to solve water issues in Mistawasis? Why?
38. How do you think we should talk to others?
39. How does speaking with others could help for effective collaboration for water decision-making?
40. Who should Mistawasis engage with and have a conversation with to address water issues?
41. What could be some barriers to open a dialogue between people in Mistawasis and people from outside?

Thank you for your important participation. Do you have any questions or comments to add to our conversation?

WATER PARTNERS INTERVIEW GUIDE

Naturalizing and assigning competence

1. What are the main objectives that your organization pursues for the wellbeing of water in SK?
2. On what water projects/programs is your organization working at the moment in SK?
3. What is water governance for you?
4. Have you heard about collaborative water governance? (Details)
5. How does your organization or project address gender and diversity in decision-making?

Getting the details:

6. What does partnership mean for you, and for your organization?
7. How long has your organization been working with Mistawasis Nêhiyawak? How is the relationship with them? (partners/stakeholders)
8. How was the participation of your organization in the project Honor the Water (Mistawasis)? (Main contributions and learnings from this project is applies)
9. What were the main values or principles that your organization applied to work with Mistawasis?
10. Is your organization working with any other Indigenous or non-Indigenous community on water and decision-making? What are the main challenges in this work so far?
11. How do you see the role of the Federal, provincial, municipal governments in collaborative water governance (or decision-making) in SK? What are their main characteristics to enable collaborative settings for water decision-making?

Getting Deep:

12. How do you see water decision-making in SK? Whose authority, rights, values, interests, and knowledge are being considered?
13. With Mistawasis, we have built a framework (picture) of what should be involved in water governance? What is the thing that most calls your attention?
14. Do you think the framework's elements are important for other Indigenous communities in SK? Why?
15. How this framework could be part of policies to apply in SK? What needs to be changed in the current governance system to reach collaboration, participation, and equity in decisions?
16. Do you think gender imbalances can affect water governance in Saskatchewan? Why?
17. What are the main barriers to understand the importance of gender roles and diversity in water decision-making?

Ending the interview:

Thank you for important participation. Do you have any questions or comments to add to our conversation?

APPENDIX B: FOCUS GROUPS GUIDES

COMMUNITY MEMBERS FOCUS GROUPS

Focus Group Protocol and Guide:

1. Introduce protocols for the meeting including:
   - We want you to do the talking, therefore we would like everyone to participate. If you wish to talk, please raise your hand I will acknowledge you with a nod.
   - There are no right or wrong answers. All person's experiences and opinions are important.
   - We will be tape recording the group. We want to capture everything you have to say. We don't identify anyone by name in our report. You will remain anonymous.
   - Participants will be able to discuss their ideas around the meaning of collaborative water governance and graphically represent their ideas.
   - The facilitator will present theoretical (academic) approaches to collaborative water governance. After this presentation, participants will discuss if the theoretical approaches and concepts are valid enough to be included in their previous graphical representation. Their discussion and results will be again presented by a representative of each group to the other participants.
   - Participants will be asked to select the graphic that most represents collaborative water governance for Mistawasis Nêhiyawak. A discussion will be placed through a sharing circle to know why participants chose the graphic, and how this graphic representation of collaborative water governance can be applicable.
   - it is important to respect the points made by others, you can disagree but do so respectfully
   - When the activity is over, please keep the points made by others to yourself

2. Guiding questions:

   - What is collaborative water governance for your group?
   - What is collaborative water governance for Mistawasis?
   - What diagram or picture can represent collaborative water governance and make it meaningful?
   - What elements are common or different in the different drawings?
   - What actions need to be taken to reach all these elements?
   - Who needs to be involved in water decision-making?
   - If we have to make one only drawing for Mistawasis how will do it? What elements need to be present in water governance in Mistawasis?

Thanks for your participation. Do you have any questions or comments to add to our conversation?

HIGH SCHOOL FOCUS GROUPS

Focus Group Protocol and Guide:

1. Introduce protocols for the meeting including:
    - We want you to do the talking, therefore we would like everyone to participate. If you wish to talk, please raise your hand I will acknowledge you with a nod.
    - There are no right or wrong answers. All person's experiences and opinions are important.
    - We will be tape recording the group. We want to capture everything you have to say. We don't identify anyone by name in our report. You will remain anonymous.
    - Participants will be able to discuss their ideas around the meaning of collaborative water governance and graphically represent their ideas.
    - The facilitator will present theoretical (academic) approaches to collaborative water governance. After this presentation, participants will discuss if the theoretical approaches and concepts are valid enough to be included in their previous graphical representation. Their discussion and results will be again presented by a representative of each group to the other participants.
    - Participants will be asked to reflect about the water governance framework co-built previously with other community members.
    - it is important to respect the points made by others, you can disagree but do so respectfully
    - When the activity is over, please keep the points made by others to yourself

2. Guiding questions:

    - What does water mean to you?
    - What does it mean to be a water steward?
    - How would you like to be involved in water stewardship?
    - What decisions are important to make for water stewardship?

Thanks for your participation. Do you have any questions or comments to add to our conversation?

APPENDIX C: CONSENT FORM

You are invited to participate in a research study entitled:

"Water Governance: A holistic perspective towards the well-being of Indigenous Nations in Saskatchewan"

Researchers:

Lalita A. Bharadwaj, Principal Investigator. Associate Professor, School of Public Health, University of Saskatchewan, 306-966-5553, lalita.bharadwaj@usask.ca

Maria F. Mora, Project Personnel. PhD Candidate, School of Environment and Sustainability, University of Saskatchewan, 306-966-8570 / 306-250-4498, mariafer.mora@usask.ca

Michelle Watson, Co-researcher. Climate Change Project Specialist – Mistawasis Nêhiyawak, 306-466-2390 ext. 234, mwats83@live.com

Anthony Johnston, Co-researcher. Special Project Specialist - Mistawasis Nêhiyawak, 306-466-2390 ext. 234, anthony.b.johnston@gmail.com

Purpose and Objectives of the Research:

The purpose of this research is to discover what water governance means, involves, and implies for Mistawasis Nêhiyawak from their worldview, traditional knowledge, and socio-cultural connections with water. From this point, a holistic water governance framework built on Mistawasis Nêhiyawak' interests and rights will be proposed. This frame will enhance practices of decolonization that will inform and demand the construction of different processes of reconciliation between the Canadian government and First Nations communities. Thus, different ways of being, think, learn, and live would be recognized regarding respect and equity.

Procedures:

You will be able to provide oral or written consent depending on your preference. The oral consent will be on this documented consent form and indicated as oral consent to participate.
There are two phases of this research project. You may participate in them or not.
If you accept to participate, the first phase involves conducting an interview where the researcher, the co-researcher and you will have a conversation about the meaning that water has for you and your community. We will also discuss the main challenges/issues that Mistawasis Nêhiyawak has regarding water; how decisions are taken to face/solve this matter, and what Mistawasis Nêhiyawak and its people can do to bring local solutions to water problems in reserve.
The second phase involves working with researchers on creating a water governance framework, which includes the possible strategies and principles to use for a better, inclusive and holistic water governance system.
Interviews will be audio or video recording. Nonetheless, participants have the right to turned off the recording device if they do not feel comfortable.
It is important to highlight that neither the participants' names nor any other identifying information will be associated with the audio or audio recording or the transcript. The tapes will be transcribed by me (Maria) and erased once the transcriptions are checked for accuracy.
Transcripts or notes of the interview may be reproduced in whole or in part for use in presentations or written products that result from this study such as in thesis' results, journal articles, conferences. Neither participants' names nor any other identifying information (such as voice or picture) will be used in presentations or in written products resulting from the study.

The data used will be co-developed with the community and it will be useful not only for my academic purposes, but also for the community's benefit and future decisions.
Please remember that your participation is voluntary and you may withdraw from the research project for any reason, without explanation or penalty of any sort. Should you wish to withdraw, you may stop contributing in the interview at any time.
Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Potential Risks:
You may feel anxious or stressed during the interview and because of the nature of discussion. I will undertake to safeguard the confidentiality of the discussion.
Because the participants for this research project have been selected from a group of people all of whom are part of Mistawasis Nêhiyawak, it is possible that you may be identifiable to other people on the basis of what you have said. This may cause you some anxiety.
Risks will be addressed by reminding participants of the rules for the interview discussion, and by ensuring all participants know how to access counselling and support services if needed.
Participants are also free to withdraw from the study at any point up until one month after each interview.
Debriefing will occur when result reports are released and participant comments on the report and process will be sought. Participants will also be informed of how to access counselling and support services if needed at the outset of interviews.

Potential Benefits:
There are some benefits to participating in this work. Participants will gain experience and understanding of what means water governance.
Participants will also be involved in making sense of the research results to co-create a water governance framework from their worldview. This framework will contribute to the main purpose of the Project "Honour the Water".
The research will be co-developed with the participation of the co-researcher. This person will be able to develop or strength his/her research skills. The experience and skills acquired could be useful for future projects that the community would like to start.

Compensation:
There will no compensation provided in this study.

Confidentiality:
To ensure your confidentiality you will not be asked to identify yourself unless you would like to be identified. A computer-generated identification number will be attached to your data, but no personal identifiers will be used unless permission is granted. Only the principal researcher and I, will be able to access the raw data. Data will be stored in a password protected folder on the researcher's computer.
Your confidentiality will be protected in the storage of data as no identifying labels will be stored with the transcripts. When presented in reports or at conferences, data will be shown in aggregate form.

Storage of Data:
Interviews will be stored in a password protected file on principal researcher's computer and will not include any identifying information. Data will be stored for 5 years and destroyed electronically.

Right to Withdraw:
Your participation is voluntary and you can answer only those questions that you are comfortable with. You may withdraw from the research project for any reason without explanation or penalty of any sort up to one month after the interview.

Whether you choose to participate or not will have no effect on your position [e.g. employment, class standing, access to services] or how you will be treated.
Should you wish to withdraw you may email the researcher at mariafer.mora@usask.ca at any time up to one month after the interview.
Your right to withdraw data from the study will apply until December 13th, 2018 (results have been disseminated, data has been pooled, etc.). After this date, it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your data.

Follow up:
To obtain results from the study, please contact the researcher at mariafer.mora@usask.ca

Questions or Concerns:
Contact the researcher(s) using the information at the top of page 1 (lalita.bharadwaj@usask.ca, mariafer.mora@usask.ca);
This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

SIGNED CONSENT
Your signature below indicates that you have read and understand the description provided; I have had an opportunity to ask questions and my/our questions have been answered. I consent to participate in the research project. A copy of this Consent Form has been given to me for my records.

______________________________ ______________________________ ________________
Name of Participant *Signature* *Date*

______________________________ ______________________
Researcher's Signature *Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.