Is Adaptive Co-Management a Strategic Technique for Canada's Transportation 2030 Policy Planning?

Chris G. Moser, Johnson Shoyama Graduate School of Public Policy[1]

Introduction

The Government of Canada is currently developing public policy improvements to the long-term transportation strategic planning, environmental, and regulatory review systems within the country. These initiatives aim to create innovative solutions to support job creation, economic growth, and Canada's middle class (Transport Canada, 2016). For many years, the Government of Canada has published the intent to respect the environment and adhere to principles of sustainable development (Bone, 2012; Indian Affairs and Northern Development Canada, 2009). However, the existing planning, assessment, and review systems were not structured to efficiently allow this intent to occur in practise. Recognizing the problems inherent to the existing systems, both the Minister of Natural Resources and the Minister of Environment and Climate Change announced a full review and transition to change the regulatory review and environmental assessment systems (Government of Canada, 2017). Additionally, the Minister of Transportation announced a new vision for Canada's national transportation system, titled Transportation 2030 (Transport Canada, 2016). Transportation 2030 will focus on five themes during the process: the traveller; safer transportation; green and innovative transportation; waterways, coasts, and the North; and trade corridors to global markets (Transport Canada, 2016). These five guiding themes will influence the changes made to the national transportation system.

This transportation policy research paper has two main objectives: firstly, to define the concept of northern and Indigenous areas within Canada; secondly, to demonstrate how adaptive co-management is a strategic technique for Canada's Transportation 2030 public policy planning. To achieve these objectives, this paper begins by first providing a brief overview of collaborative and adaptive management and then introducing the governance methodology of adaptive co-management. After addressing the limitations of adaptive co-management as a governance methodology, the paper investigates the current Canadian landscape defining a key concept of northern and Indigenous areas. Subsequently, the paper discusses the degree to which adaptive co-management is a strategic technique for Canada's national transportation public policy planning. Finally, the paper provides a summary to the subjects addressed in the previous sections. Transport Canada should consider a collaborative partnership uniting all stakeholders impacted by the activities related to the Transportation 2030 policy planning.

Collaborative Management and Adaptive Co-management

By adapting the command and control style of governance with a renewed focus on power-sharing collaboration, government agencies create innovative solutions to challenging problems. Scholars have introduced a governance method of collaborative management, also known as co-management, as a potential solution (Armitage et al., 2008; Berkes, 2009; Carlsson & Berkes, 2005; Forbes & Kofinas, 2014). The basic concept of co-management is that social-ecological systems are vertically integrated, and for sustainable management practises, government agencies should share power and responsibility with local stakeholders for management of common resources (Carlsson & Berkes, 2005). Government agencies partner with local stakeholders to carefully consider the social-ecological-economic system balance, while for sustainable development decisions, equity objectives may be preferred over efficiency objectives (Carlsson & Berkes, 2005). In 2017, the Canadian Environmental Assessment Agency (CEAA) asked the public to prioritize the federal governments assessment of the environment, the economy, and the social factors.

Moser

Figure 1: How much do you think Canadian federal environmental assessment processes should consider ... (CEAA, 2017, p. 90)
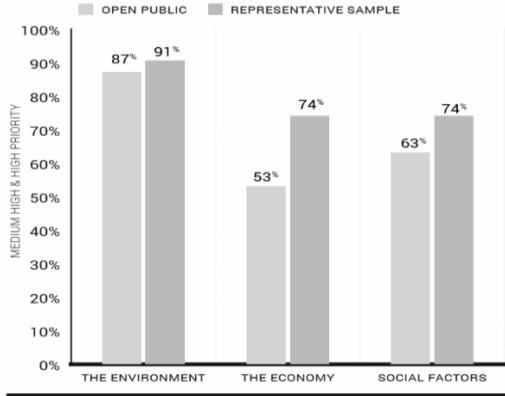
The graph above highlights the importance of environmental and social factors on sustainable development approval within the Canadian government agencies. Co-management includes the process to obtain additional community-based knowledge and feedback on the environmental, economical, and social influences of government public policy. Careful construction and evaluation of the system is critical since various stakeholders are most likely not socially, economically, or politically neutral (Armitage et al., 2008; Berkes, 2009; Singleton, 2000). Decision making within a network of different stakeholders is not the same as problem solving (Carlsson & Berkes, 2005). Problem solving is creating options, whereas decision making is the process of selecting different options (Carlsson & Berkes, 2005). However, each stakeholder is of vital importance for the socio-ecological-economic balance required for win-win-win decisions. Often, the outcome is not known for a long period of time; therefore, adaptive management is an approach to respond to the changing environmental and legal conditions (National Research Council, 2004; Williams, 2011). Adaptive management is defined by the National Research Council (2004) as:

> flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. (p.1)

Below, Figure 2 demonstrates the variations between collaborative management, adaptive management, and adaptive co-management:

Figure 2: Similarities and differences between co-management, adaptive management, and adaptive co-management (Berkes, 2009, p. 1698)

	Co-management	Adaptive management	Adaptive co-management
Linkages	Primary focus: vertical institutional linkages	Linking science and management for learning-by-doing	Horizontal and vertical linkages for joint learning-by-doing
Temporal scope	Short to medium: tend to produce snapshots	Medium to long: multiple cycles of learning and adaptation	Medium to long: multiple cycles of learning and adaptation
Organizational level	Bridging between local and government levels	Focus on managers' needs and relationships	Multi-level, with self-organized networks
Capacity building focus	Resource users and communities	Resource managers and decision-makers	Needs and relationships of all partners

The type of governance framework selected will determine whether the result is a co-management decision-making system or an adaptive problem-solving system (Carlsson & Berkes, 2005). Combining best practises of adaptive management and co-management results in an adaptive co-management (ACM) governance methodology. Carlsson and Berkes (2005) define ACM as a "process by which institutional arrangements and ecological knowledge are tested and revised in a dynamic, ongoing, self-organized process of trial and error" (p. 73). ACM expands the basic co-management governance model to where the institution is constantly reflecting and implementing best practises to maintain the socio-ecological-economic balance (Berkes, 2009; Forbes & Kofinas, 2014). The ACM problem-solving governance process involves a wide range of private and public institutions, which have common goals of sustainable knowledge generation and sharing, as well as crafting decisions balancing the socio-ecological-economic

impacts (Berkes, 2009; Bone, 2012; Carlsson & Berkes, 2005; Sandstrom, 2009). Relationships between all stakeholders is critical for the ACM governance process' success.

ACM stresses relationships between all stakeholders – including Indigenous Peoples, scientists, engineers, managers, government, industry associations, non-governmental organizations (NGOs), and the public – in a dynamic, systematic, collaborative problem-solving governance model (Armitage et al., 2008, Berkes, 2009). In this model, there is still the requirement of regulation enforcement, protected areas, and market incentives to ensure sustainable development (Armitage et al., 2008). Sustainable development decisions can be best made when power sharing is the outcome – versus the beginning – of the process (Berkes, 2009; Sandstrom, 2009). As power is shared, there is a requirement for other institutions to build knowledge, trust, and social capacity while the government agencies move forward-together (Berkes, 2009; Sandstrom, 2009). Government agencies are accountable to resolve dynamic issues, and while positive progress has been made, numerous existing ACM frameworks are restricted.

Adaptive Co-management Limitations
Many existing ACM governance models are limited by capacity, authority, and trust among the board members. By becoming aware of these limitations, Transport Canada should introduce the best practises when developing their strategic transportation management governance system. The National Energy Board (2017) summarized the diverse range of expertise required to manage complex government systems:

- Knowledge of infrastructure operations and energy systems
- Indigenous traditional knowledge and worldview
- Engineering
- Engagement

- Environmental Science
- Rules of procedures
- Gender issues and equality
- Law
- Regional knowledge
- Landowner perspectives (p. 65)

With the dynamic legal, regulatory, scientific, and heterogeneous community opinions, ACM boards are often restricted. Increased efforts measuring the positive and negative impacts of development through the various assessment processes evaluate factors such as health and safety, education and training, social and cultural values, financial and business benefits, and wildlife and environmental protection (Bone, 2012; CEAA, 2017). Such a broad range of factors requires the governance system to have capacity, authority, and trust to ensure fair and equitable benefit for all those impacted.

In complex government systems, ACM boards are often beyond capacity in personnel expertise, funding allocations, and system framework structure. Personnel expertise in scientific and traditional knowledge, public policy, law, and the industry and community domains are required for decision making (Canadian National Energy Board, 2017; Carlsson & Berkes, 2005; Singleton, 2000). Funding constraints limit the effectiveness of innovative governance systems as competing initiatives influence budget allocations (Singleton, 2000). Moreover, board participants are immersed in budget allocations combined with extensive documentation required to fulfil legal or organizational obligations. As the government creates the political space to build and assesses the capacity of the ACM board, the balance of authority also challenges this governance system.

Decentralizing authority is directly coupled with decolonization, which both federal and unitary nation states hesitate to move forward on. The following state systems have decentralized some authority over the past few decades: Alaska, USA; Greenland, Denmark; and Nunavut, Northwest Territories, and Yukon, Canada (Bankes et al., 2004; Broderstad & Dahl, 2004). The decentralizing authority techniques are subject to capture and control government agencies as power is shared in various governance boards and committees. As Singleton (2000) describes, "community-based management or co-management is likely to result in either (i) successful collaboration between a state agency and a local community or (ii) 'capture' of a public agency by private or special interests" (p. 1). Capture occurs when either a group of individuals

or the total agency can no longer remain neutral to reflect the public's or agencies' broader interests (Singleton, 2000). To minimize the risk of 'capture', the governance framework requires a delicate balance of power between government agencies, industry stakeholders, northern and Indigenous communities as each attempt to influence the collaborative problem-solving decisions which still reflect their individual interests.

Since ACM requires a collaborative relationship among stakeholders, a substantial issue challenging this governance methodology is board member trust. Board member trust challenges are dynamic and often stem from the root cause that Indigenous and Western societies have different philosophies in viewing and understanding our relationship with the earth and each other (Bone, 2012; Cardinal & Hildrebrant, 2000; Wilkinson, Clark, & Burch, 2007). Indigenous culture observes all humans, animals, plants, water, air, and land as a holistic relationship, whereas Western culture has sanctioned humans as having authority over animals, plants, water, air, and land (Bone, 2012; Cardinal & Hildrebrant, 2000; Wilkinson, et al., 2007). The diverse cultures have different perspectives of how to advance public policy; regardless, the government agencies are understanding their responsibility to begin incorporating Indigenous Knowledge into public policy amendments within their management systems. For sustainable developmental decisions, an increase in stakeholder trust is required for any governance model to be successful.

Northern and Indigenous Areas
Many North Americans view the North as the polar region within the Arctic circle (Bone, 2012). Due to geo-political boundaries, most Canadians view the federal territories as north and often overlook the similar socio-economic challenges found with the provincial northern regions (Bone, 2012; Coates & Poelzer, 2015). Bone (2012) summarized the northern physical and human elements in the following table:

Figure 3: Common Characteristics of the North (Bone, 2012, p. 9)

Physical Characteristics	Human Characteristics
• Cold environment	• Sparse stabilized population
• Limited biophysical diversity	• High cost of living
• Wilderness and remoteness	• Few highways
• Permafrost	• Aboriginal population
• Vast geographic area	• Settling of land claims
• Fragile environment	• Financial dependency
• Slow biological growth	• Resource economy
• Importance of wildlife	• Reliance on imported foods
• Global warming	• Country food
• Continental climate	• Economic hinterland

By understanding the similar physical and human elements among the Canadian territorial and provincial norths, it is possible to comprehend the major challenges related to northern and Indigenous governance methodologies.

Multi-level governance models attempting to manage the socio-ecological-economic balance are often limited, which originates from the federal state's method of decentralizing administration or authority. Such decentralization is a direct result of international law requiring greater commitments of domestic laws which enables regional public or ethnic self-governance (Bankes et al., 2004; Bone, 2012). The failure in international human rights law to influence countries to deal with colonialized issues led to the creation of the International Labour Organization Convention 169 – Indigenous and Tribal Peoples in Independent Countries (ILO-C169) and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP; Bankes et al., 2004). The Indigenous rights outlined in the Canadian constitution, ILO-C169, and UNDRIP continue to shape the legal and political systems.
In Canada, Indigenous rights are firmly seated in both legal and public policy frameworks; however, additional legal clarity is required for land and resource rights (Bankes et al, 2004; Bone, 2012; Coates & Poelzer, 2015). Broderstad and Dahl (2004) explain the following:

The indigenous peoples of the Canadian Arctic opted for land claims agreements, inspired by the Alaska Native Claims Settlement Act [1971]. But they went further than the Alaska Natives and, from the outset of negotiations, they demanded that economic, social, cultural, and political rights be included. (p. 90)

Beginning with the James Bay and Northern Quebec Agreement in 1975, Aboriginal communities and leaders continue to rewrite the legal and political systems within Canada (Bone, 2012; Broderstad and Dahl, 2004; Coates & Poelzer, 2015). The comprehensive agreements shown on the map (Figure 4) restructured the socio-economic conditions to allow Aboriginal communities to function in Canada's economy while protecting self-determination principles of land, language, culture, and political self-governance (Bone, 2012). These modern treaties (Figure 4), which overlap with the Historical Pre-1975 Treaties (Figure 5) and the Metis Nation Homeland, define the concept of northern and Indigenous areas in which alternative governance structures are required due to various legal and political agreements.

Figure 4: Map of Modern Treaties and Self-Government Areas (Indigenous and Northern Affairs Canada [INAC], 2016a)
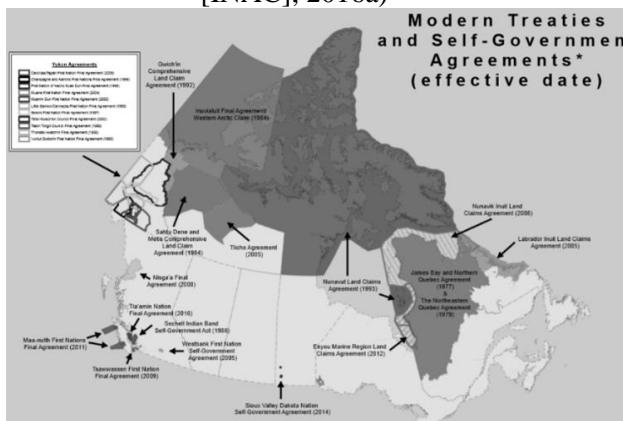

Figure 5: Historical Treaties: Pre-1975 (INAC, 2016b)

Legal and political agreements are the structures for the socio-ecological-economical balance to occur, managing the human interaction of the different governance system models (Bankes et al., 2004). Two self-governance models are found within northern and Indigenous areas: regional public governments and ethnic self-governance based on Indigenous membership (Bankes et al., 2004). Regional public government is demonstrated in the Nunavut Land Claim Agreement and the Yukon Umbrella Agreement in Northern Canada (Bankes et al., 2004; Bone, 2012; Josefsen, Morkenstam, & Nilsson, 2016). The Aboriginal Metis and First Nations within Canada demonstrate ethnic self-governance (Bankes et al., 2004; Bone, 2012; Josefsen et al., 2016). These self-governance agreements are creating the political space for Indigenous Peoples to self-determinate as described in the various UNDRIP articles.

In May 2016, the Canadian government announced its acceptance and full supporter of UNDRIP which began the parliamentary procedure to change public policy (INAC, 2016c). To implement public policy changes into the Canadian framework, each government agency will propose changes to their respective systems to respect the nation-to-nation relationship and the following articles within UNDRIP:

- Right to self-determination (Articles 3, 4, and 5);
- Right to participate in decision-making and maintain institutions (Articles 18, 19, 34, and 40);
- Right to make decisions over traditional territory (Articles 26 and 29);
- Right to free, prior, and informed consent (Article 32);
- Right to culture (Articles 8, 11, and 25);
- Right to maintain and protect Indigenous knowledge (Article 31); and
- Right to financial assistance (Article 39). (CEAA, 2017, p. 29)

ACM is an innovative partnership approach to the complex issues, which surround environmental and resource management for different government agencies, while respecting the existing legal and constitutional framework of the state, UNDRIP, ILO-C169, land claims, and treaty agreements. Transport Canada should integrate these innovative solutions for a transportation governance methodology in northern and Indigenous areas.

Adaptive Co-management as an Innovative Transportation System Governance Methodology
It remains the Government of Canada's duty to consult and engage actively with Aboriginal communities prior to any government decisions (Department of Justice, 2017; Newman, 2014). The government's recognition of UNDRIP is a step forward in the reconciliation process, with each government ministry currently changing public policy to reflect the intention of UNDRIP. UNDRIP has many potential impacts and will require the Canadian government and Indigenous leaders to negotiate amendments to Canadian law (Coates & Favel, 2016; Newman, 2017). Reconciliation, duty to consult, and the free, prior, and informed consent (FPIC) process will continue with an end goal of cooperation among Indigenous communities, industry partners, and governments in the sustainable development of Canada (Department of Justice, 2017; Finnegan & Coates, 2016; Newman, 2014). It is important that the government and Indigenous communities understand that although FPIC is a promising procedure, the process does not mean Indigenous veto authority to project development (Coates & Favel, 2016; Newman, 2017). Recently, the Department of Justice (2017) stated the intention that "the Government of Canada will look for opportunities to build processes and approached aimed at securing consent, as well as creative and innovative mechanisms that will help build deeper collaboration, consensus, and new ways of working together" (p. 4). This bold visionary statement by the Department of Justice (2017) challenges the segregated Indigenous Peoples, leaders, communities, and governmental assemblies to reconcile their own differences and begin utilizing their shared worldviews and values to govern the actions and agendas.

Transport Canada should consider ACM as a potential governance methodology which has the potential to link Indigenous communities, government scientists, engineers, and managers with industry stakeholders and the public in a dynamic, systematic, and collaborative problem-solving governance model (Armitage et al., 2005; Berkes, 2009). The problem-solving governance model involves a wide range of private and public institutions, which have common goals of sustainable knowledge generation and sharing, and crafts decisions balancing the socio-ecological-economic impacts (Berkes, 2009; Bone, 2012; Carlsson & Berkes, 2005; Sandstrom, 2009). Furthermore, Transport Canada should analyze best practises from the Inuvialuit Settlement Region where environmental impact assessments are co-managed by the Environmental Impact Screening Committee and the Environment Impact Review Board (Berkes, 2009; Bone, 2012). The overall goal is to develop new processes which are fair and robust, respect the rights of Indigenous Peoples, incorporate Indigenous Knowledge with science, and protect our environment for future generations (Government of Canada, 2017). For example, the National Energy Board Panel (2017) asked the following questions during their review and planning exercises:
1. Does this honour the commitment to nation-to-nation relationships?
2. Do our recommendations respect and give full expression to Indigenous rights, aboriginal and treaty rights, and title?
3. Does the system we envision meet Indigenous peoples on their own terms? (p.11)

The Transportation 2030 planning panel should also lead change with the concepts presented in the government's commitment of the nation-to-nation relationships. While respecting the existing legal and constitutional framework of Canada, UNDRIP, treaty and land claim agreements, ACM boards are potential governance models which may be implemented by Transport Canada.

There is a heightened need for the government to consider not only the immediate environmental or economic concerns, but also all positive and negative impacts of development. This was reinforced in the environmental assessment review process where stakeholders across Canada shared a common voice of the requirement to review cultural, socio-economic, health, and environmental impacts of development (Bone,

2012; CEAA, 2017). The new process to review the cultural, socio-economic, health, and environmental impacts will now be referred to as Impact Assessments (IA; CEAA, 2017).

The National Energy Board (2017) introduced "a Cree term *I-kanatak Askiy* (respectfully interpreted as 'keeping the land pure' in English)" (p. 26) as a depiction of the continuous improvement objective. This point of view stresses the importance of observing all humans, animals, plants, water, air, and land as a holistic relationship and not as humans having authority over nature (Bone, 2012; Cardinal & Hildrebrant, 2000; National Energy Board, 2017). *I-kanatak askiy* relates directly to the complex principles of *pimacihowin* which is based on the holistic view of the balanced economical, physical, and spiritual relationships between all interactions (Cardinal & Hildebrant, 2000; Kovach, 2009). Modern Western environmental eco-systems-based philosophy is aligned with these Indigenous Knowledge concepts (National Energy Board, 2017), and the integrity of existing and proposed infrastructure directly relates to the health and safety of our holistic environment – humans, animals, plants, water, air, and land. The following diagram is a proposed continuous improvement cycle meeting the intention of *I-kanatak askiy*.

Figure 6. Indigenous Knowledge Application: *I-kanatak Askiy* –
Proposed regulatory continuous improvement cycle (National Energy Board, 2017).

Through ACM governance agreements, Indigenous Peoples should be empowered to collaborate with federal and provincial governments as an opportunity for move forward-together on reconciliation, duty to consult, and the free, prior, and informed consent process. Therefore, the transportation industry stakeholders should ask themselves the following question: How is *I-kanatak askiy* integrated into their own strategic plans?

Conclusions

The Government of Canada is currently developing public policy improvements to the long-term transportation strategic planning, environmental, and regulatory review systems within the country. The federal government has recognized the need to collaborate with Indigenous Peoples in all phases of decisions, as well as the value of Indigenous Knowledge, which act as guiding principles to the success of the initiative. The current public policy changes proposed by the Government of Canada will require strong, passionate leaders to champion the innovative systems, which focus on collaboration, reflection, and learning instead of the historical command and control management model (Armitage et al., 2005).

For sustainable development and common resource management, the governance model must be structured to process a dynamic and diverse range of complex impacts. These operational, legal, procedural, regional, and legal requirements all have human factors dramatically influencing the outcome based on consensus and cooperation. Stakeholder consensus and cooperation can be best achieved with trust and when power sharing is the outcome – rather the beginning – of the process (Berkes, 2009; Sandstrom, 2009). Power sharing occurs through collaborative ACM governance methodologies where the government agencies establish cooperative partnerships to guide decisions on sustainable development across Canada. ACM is a governance technique which stresses the importance of improving the process and results of the system

while collaborating both vertically and horizontally with all stakeholders (Armitage et al., 2008; Berkes, 2009; Carlsson & Berkes, 2005). This governance model attempts to create an atmosphere of collaboration in management among government, industry, and northern and Indigenous communities. Therefore, it is critical to structure the model to de-centralize decisions, thus empowering regional influences, while maintaining accountability and constant improvement.

The vertically integrated ACM governance methodology is often limited to effectively balance the complicated socio-ecological-economic impacts of sustainable development, and the effectiveness is hindered with three main issues: authority, capacity, and trust. The issues originate from the federal government's method of decentralizing administration or authority and differences of traditional worldviews. The decentralizing of administration or authority, thereby enabling Indigenous regional public or ethnic governance, is a direct result of international law, which requires greater commitments from state governments (Bankes et al., 2004; Bone, 2012). The failure in the international human rights law to deal with colonialized issues led to the creation of the International Labour Organization Convention 169 – Indigenous and Tribal Peoples in Independent Countries (ILO-C169) and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP; Bankes et al., 2004). The Indigenous rights outlined in state constitutions, ILO-C169, and UNDRIP continue to influence the legal and political systems, creating space for governance without government in the Canadian governmental system today. Adaptive co-management is a governance methodology where the Government of Canada agencies could establish partnerships to guide decisions on sustainable development, thereby ensuring a governance model of co-operation moving forward-together. As stated by Coates and Poelzer (2015), now is the opportune time for all Canadians to begin to live the unified values as treaty peoples, which includes a permanent partnership of collaborative cohabitation that unites Indigenous and non-Indigenous people within the territory of Canada. This collaborative partnership uniting Indigenous and non-Indigenous people includes the activities related to the Transportation 2030 policy planning.

Acknowledgement

References

Armitage, D. R., Plummer, R., Berkes, F., Arthur, R., Charles, A. T., Davidson-Hunt, I. J., . . . Wollenberg, E. K. (2008). Adaptive co-management for social-ecological complexity. *Frontiers in Ecology and the Environment, 7*(2), 95-102. doi:10.1890/070089

Bankes, N., Koivurova, T., Allard, C., Baker, B., Duyck, S., Ford, V., … VanderZwaag, D. (2004). Legal systems. In N. Einarsson, J. N. Larsen, A. Nilsson, & O. R. Young (Eds.), *Arctic human development report* (pp. 101-118). Stefansson Arctic Institute, Akureyri.

Berkes, F. (2009). Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management, 90*, 1692-1702. doi:10.1016/j.jenvman.2008.12.001

Bone, R. M. (2012). *The Canadian north: Issues and challenges* (4th ed.). Don Mills, ON: Oxford University Press.

Broderstad, E. G., & Dahl, J. (2004). Political systems. In N. Einarsson, J. N. Larsen, A. Nilsson, & O. R. Young (Eds.), *Arctic human development report* (pp. 85-100). Stefansson Arctic Institute, Akureyri.

Canadian Environmental Assessment Agency. (2017). *Building common ground: A new vision for impact assessment in Canada – The final report of the expert panel for the review of environmental assessment processes.* Retrieved from https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/environmental-assessment-processes/building-common-ground.html

Cardinal, H., & Hildebrant, W. (2000). *Treaty elders of Saskatchewan: Our dream is that our peoples will one day be clearly recognized as nations.* Calgary, AB: University of Calgary Press.

Carlsson, L., & Berkes. F. (2005). Co-management: Concepts and methodological implications. *Journal of Environmental Management, 75*, 65-76. doi:10.1016/j.jenvman.2004.11.008

Coates, K.S., & Favel, B. (2016). *Aboriginal Canada and the natural resource economy series: Vol. 9. Understanding FPIC: From assertion and assumption on 'free, prior, and informed consent' to a new*

     model for Indigenous engagement on resource development. Retrieved from
     http://macdonaldlaurier.ca/files/pdf/MLINumber9-FPICCoates-Flavel04-29-WebReady.pdf

Coates, K.S., & Poelzer, G. (2015). *From treaty peoples to treaty nation – A road map for all Canadians.*
     Vancouver, BC: UBC Press.

Department of Justice. (2017). *Principles respecting the Government of Canada's relationship with Indigenous*
     peoples. Retrieved from http://www.justice.gc.ca/eng/csj-sjc/principles-eng.pdf

Forbes, B.C., & Kofinas, G. (2014). Resource Governance. In J. N. Larsen & G. Fondahl (Eds.), *Arctic human*
     development report – Regional processes and global linkages (pp. 255-298). Denmark: Rosendahls-Schultz
     Grafisk.

Government of Canada. (2017). *Environmental and regulatory reviews – Discussion paper.* Retrieved from
     https://www.canada.ca/content/dam/themes/environment/conservation/environmental-reviews/share-your-
     views/proposed-approach/discussion-paper-june-2017-eng.pdfIndian Affairs and Northern Development
     Canada. (2009). *Canada's northern strategy: Our north, our heritage, our future.* Retrieved from
     http://www.northernstrategy.gc.ca/cns/cns.pdf

Indian Affairs and Northern Development Canada. (2009). Canada's northern strategy: Our north, our heritage, our
     future. Retrieved from http://www.northernstrategy.gc.ca/cns/cns.pdf

Indigenous and Northern Affairs Canada. (2016a). *Modern treaties and self-government agreements.* Retrieved from
     http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ-AI/STAGING/texte-text/mprm_pdf_modrn-
     treaty_1383144351646_eng.pdf

Indigenous and Northern Affairs Canada. (2016b). *Pre-1975 treaties.* Retrieved from http://www.aadnc-
     aandc.gc.ca/DAM/DAM-INTER-HQ-AI/STAGING/texte-text/mprm_treaties_th-
     ht_canada_1371839430039_eng.pdf

Indigenous and Northern Affairs Canada. (2016c). *Canada becomes a full supporter of the United Nations*
     Declaration on the Rights of Indigenous Peoples. Retrieved from https://www.canada.ca/en/indigenous-
     northern-affairs/news/2016/05/canada-becomes-a-full-supporter-of-the-united-nations-declaration-on-the-
     rights-of-indigenous-peoples.html

Josefsen, E., Morkenstam, U., & Nilsson, R. (2016). The Nordic Samediggis and the limits of Indigenous self-
     determination. *Galdu Cala – Journal of Indigenous Peoples Rights, 1*, 1-40. Retrieved from
     http://img8.custompublish.com/getfile.php/3521462.2388.xxctvadcyy/1_2016_GÃƒÂ¡ldu+Ã„Å'ÃƒÂ¡lÃƒ
     Â¡_Nordic+Samediggis_ENG.pdf?return=www.galdu.no

Kovach, M. (2009). *Indigenous methodologies – Characteristics, conversations, and contexts.* Toronto, ON:
     University of Toronto Press.

National Energy Board. (2017). *Forward, together – Enabling Canada's clean, safe, and secure energy future.*
     Retrieved from https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/pdf/NEB-Modernization-Report-EN-
     WebReady.pdf

National Research Council, 2004. *Adaptive management for water resources planning.* Washington, DC: The
     National Academies Press.

Newman, D. (2014). *Aboriginal Canada and the natural resource economy series: Vol. 4. The rule and role of law:*
     The duty to consult, Aboriginal communities, and the Canadian natural resource sector. Retrieved from
     http://www.macdonaldlaurier.ca/files/pdf/DutyToConsult-Final.pdf

Newman, D. (2017). *Aboriginal Canada and the natural resource economy series: Vol. 13. Political rhetoric meets*
     legal reality: How to move forward on free, prior, and informed consent in Canada. Retrieved from
     https://macdonaldlaurier.ca/files/pdf/MLIAboriginalResources13-NewmanWeb_F.pdf

Sandstrom, C. (2009). Institutional dimensions of co-management: Participation, power, and process. *Society and*
     Natural Resources, 22, 230-244. doi:10.1080/08941920802183354

Singleton, S. (2000). Co-operation or capture? The paradox of co-management and community participation in
     natural resource management and environmental policy-making. *Environmental Politics*, *9*(2), 1-21.
     doi:10.1080/09644010008414522

Transport Canada. (2016). *Transportation 2030.* Retrieved from https://www.tc.gc.ca/eng/transportation-2030-
     infographic.html

Wilkinson, K. M., Clark, S. G., & Burch, W. R. (2007). Other voices, other ways, better practices – Bridging local
     and professional environmental knowledge. *Yale School of Forestry & Environmental Studies, Report*
     Number 14. Retrieved from http://environment.yale.edu/publication-series/documents/downloads/a-g/FES-
     Report-14.pdf

Williams, B.K. (2011). Adaptive management of natural resources – Framework and issues. *Journal of*
     Environmental Management, 92, 1346-1353. doi:10.1016/j.jenvman.2004.10.041