

A FRAMEWORK FOR ASSESSING SKILLS TRAINING PROGRAMS
FOR BUILDING INDIGENOUS CAPACITY IN NATURAL RESOURCE
DEVELOPMENT



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A FRAMEWORK FOR ASSESSING SKILLS TRAINING
PROGRAMS FOR BUILDING INDIGENOUS CAPACITY IN
NATURAL RESOURCE DEVELOPMENT

by

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ABSTRACT

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Indigenous participation in natural resource development has become an integral part of the advancement of major projects both in Ontario and across Canada. This participation until the most recent decades was limited by insufficient capacity for Indigenous communities to represent their interests in project partnerships. The transition to community-based management in natural resource projects has provided an opportunity for better inclusion of Indigenous social values and traditional ecological knowledge (TEK). The development of meaningful environmental monitoring programs is poised to further elevate capacity potential and enhance the stewardship role of Indigenous peoples. Through the establishment of a framework for assessing the options for programs to build Indigenous capacity, an evaluation of relevant and culturally appropriate skills training can be actualized.

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INTRODUCTION

The last decade has seen a marked increase in the number and scale of natural

resource undertakings in Canada (Bullock et al. 2017). While relationships between

government and Indigenous communities continue to evolve through increasingly

meaningful consultation and improved resource sharing agreements, there remains an

opportunity to explore further development of Indigenous capacity (Stevenson and

Perreault 2008, Coates and Crowley 2013).

The principles of management for natural areas and wildlife differ between

Indigenous and non-Indigenous planners to varying degrees, with one constant: the

motivation for a more comprehensive approach to management based on a mutual desire

to ensure a stable investment environment for the development of Canada's natural

resources (Coates and Crowley 2013). Improvements in the complex nature of resource-

based project development have been made through the establishment of co-

management agreements and community forestry opportunities (Wyatt 2008). Variations

in both structures have promoted the assertion of Aboriginal rights over undertakings on

traditional lands and have solidified the importance of Indigenous inclusivity both

politically and economically (Coates and Crowley 2013).

i Aboriginal peoples, as defined in Canada's Constitution Act, 1982, includes Indian, Inuit and Métis. Indigenous is a term used at the international level but is becoming widely used in Canada where it is inclusive of Aboriginal in common language. The constraints of this thesis are such that Métis and Inuit people's participation in natural resources is not explicitly explored and are therefore not to be considered as included in the use of either Aboriginal or Indigenous. The use of the term First Nation(s) (defined as "Bands" under the Indian Act) will also appear, if the context is specific to them.

The position of government and Indigenous peoples continues to emphasize the importance of ensuring that ecological functions remain undeterred by natural resource development. The institutional education sector has also come to realize the significant contributions of Indigenous philosophies pertaining to land use and sustainability, further recognized by their appearance in mainstream curricula (McGregor 2010). Traditional ecological knowledge (TEK) has also begun to find acceptance alongside Western-based science and land use planning courses at both the post-secondary and registered professional levels (Cahill 2018).

What continues to remain absent from this evolution, however, is the incorporation of natural resource training programs that provide relevant and transferable skills for Indigenous peoples. Programming that includes culturally appropriate content alongside technical proficiency requirements can serve as the standard that bridges the gap over what is meaningful and efficient project participation for Indigenous peoples (Bartlett et al. 2012 Allen and Krogman 2013, Madden 2015). The ability for First Nation communities to represent their interests throughout the engagement, planning, and monitoring stages of natural resource undertakings is herein referred to as “capacity.” The Indigenous view of what builds capacity is twofold: Aboriginal communities recognize the economic benefits derived from employment in the natural resource sector, but are more keenly aware that the creation of supports to further their active participation in development planning and project governance are needed to remove the systemic barriers challenging the Indigenous ideal of sustainable land development (Stevenson and Perreault 2008). In the resource development context, capacity that is meaningful and efficient is not necessarily viewed

through a partnership lens; those directly impacted by development find the need to be active project stewards

more meaningful, and those tasked with development seek efficiency through the construction of regulation and policy (Udofia et al. 2017). Addressing this gap will require future iterations of capacity development programs that support appropriate training to enhance the role of First Nation communities from project participants to project managers.

One potential source of programming is referred to as environmental monitoring (EM). EM training programs take on various forms, ranging from standardized curricula at the post-secondary level, to workshops produced by professional development groups, and corporately packaged options that can be licensed for use in project-focused capacity building. The intention of EM training is to equip First Nation communities with skills that can enable the assumption of control over environmental governance opportunities presented through participation in natural resource development projects (Harper 2016).

Contrarily, Indigenous knowledge of environmental change is produced out of experiential relationships with nature and/or provided by interactions with recognized local authorities such as community Elders (Davidson-Hunt 2006). Therefore, if capacity building initiatives for resources development are to be both effective and affective, skills programs for EM must find a balance between the conventions of Western science and the holistic perspectives of Indigenous peoples.

This thesis assesses the effectiveness of Indigenous training initiatives using a case study approach to evaluate how these initiatives support Indigenous engagement in natural resource development projects. A review of the literature provides the context for the importance of enhancing Indigenous participation in the natural resource sector. Case study examples of past and present capacity building schemes support the literature

review and enhance the web-based search of training programs. The theory behind program assessment is also explored to examine the conventions of skills-based training evaluation. The aim of this web-based search and literature review is to produce a framework for evaluating the various skills training options available for building Indigenous capacity and further the discussion of scholarly study in this subject.

LITERATURE REVIEW

The review of literature for this thesis is structured to provide a progression through the content material that will serve as a digest of scholarly opinion while providing context for the construction of a framework to assess skills training programs. Historical participation of Indigenous peoples in natural resource development including a brief overview of traditional land rights and their significance in political discourse is followed by an examination of the discrepancies between the statistical evidence of Indigenous employment in that sector. The building of relationships between Aboriginal communities and the forest industry has an established presence in the scholarship. The development of co-management agreements in the forest sector, both inclusive and exclusive of government participation, are appraised in this review concerning their success at building Indigenous capacity. Evolving acceptance of the need for incorporation of Indigenous knowledge systems in land management is summarized, along with an exploration of new pedagogical models that can be applied in community-based environmental assessment and monitoring programs. Lastly, a review of the theory for assessment and evaluation of skills training programs provides a foundation for the parameters used to establish the framework in the thesis Discussion.

INDIGENOUS PARTICIPATION IN CANADIAN NATURAL RESOURCE DEVELOPMENT

Indigenous participation in Canadian natural resources has a long and storied past. The development of legal protection for inherent and established

Aboriginal treaty rights continues to evolve at both Canadian federal and provincial government levels, as

well as in the international arena. Much of the progress seen in establishing relationships between government, industry and First Nation communities is seen in the development of partnership agreements in the forest sector.

Land Rights, the Constitution Act, 1982 and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

Indigenous participation in natural resource development in Canada began during the time of contact between Europeans and Indigenous peoples. Treaties between colonial settlers and First Nation communities became the impetus for the introduction of the European legal and governmental systems that would direct the nature of Western and Indigenous partnerships (Wyatt 2008). For decades, the rights of Aboriginal peoples outlined within these treaties have been a source of contention that for many First Nation communities has fostered a distrust of government and, by extension, the natural resource development industry.

Despite recognition under Section 35 of the Constitution Act, 1982, which states “The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed” (Constitution Act, 1982), a clear definition as to what constitutes these rights does not exist. Considering this, the Supreme Court of Canada has become the source of jurisdictional oversight for clarifying how Aboriginal rights and land management policy is to applied, including the requirement for direct engagement with First Nation communities in resource development through the Crown’s duty to consult if resource development has the potential to infringe s. 35 Aboriginal and treaty rights (Bergner 2006).

More recently, the United Nations Declaration on the Rights of Indigenous Peoples was adopted by the General Assembly in the fall of 2007 (United Nations 2018). The Declaration is a comprehensive statement “that Indigenous peoples are equal to all other peoples, while recognizing the right of all peoples to be different, to consider themselves different, and to be respected as such”, reinforcing both the collective and individual rights of Indigenous peoples (United Nations 2018). In terms of resource development for Canada, UNDRIP confirms that Indigenous rights to land, resources, and meaningful participation in economic or social development are inalienable. Though not legally binding, UNDRIP represents a paradigm shift, reflective of a new global consciousness that recognizes the need to reconcile past grievances and repeal current systemic biases experienced by Indigenous peoples (United Nations 2018).

Capacity for Free, Prior and Informed Consent

Free, Prior and Informed Consent (FPIC) is a principle linked to the internationally held human rights standard that “all peoples have the right to freely pursue their economic, social and cultural development” and reinforced by UNDRIP (United Nations 2016). The four elements of FPIC are interconnected and are to be considered equally, though “Free” “Prior” and “Informed” are generally applied in practice as setting the conditions under which “Consent” is given. FPIC is required prior to the approval or implementation of any undertaking that has the potential to affect the land or resource rights of Indigenous peoples (United Nations 2016). In 2004, the Supreme Court of Canada established that where a development project was seen to have an impact on Aboriginal rights, consultation or appropriate accommodation on the part of the Crown was required (Fraser and Viswanathan 2013). This obligation is

commonly referred to in Canada as “the duty to consult”. Now a contractual and common law covenant, the development of policies to engage Aboriginal peoples in Canada through consultation has become an iterative process aimed at satisfying project development goals and aiding the process of reconciliation in which Crown and Indigenous interests are reconciled (Ariss et al. 2017). Despite that, such policies are not implemented under the guise of changing the framework established in law regarding Aboriginal and Crown relations, but rather to strengthen partnership agreements and address power imbalances. The greatest of these imbalances is observed within the third principle of FPIC, where “Informed” refers to the nature of consultation and the type of information required for Indigenous peoples to consider development proposals thoroughly (United Nations 2016).

In the context of capacity building, “Informed” can also be extended to include provisions for funding that allow Indigenous peoples to complete preliminary project assessments independent of proponents or the Crown. A recent Ontario Superior Court of Justice ruling in *Saugeen Ojibway First Nation v. Ontario, 2017* highlights the necessity of the Crown providing financial support for evaluating project proposals when capacity is limited. In 2008, the Saugeen Ojibway First Nation (SON) was provided with a list of applications for aggregate projects in their traditional territory by the Ontario Ministry of Natural Resources and Forestry (OMNRF) (Wilson 2019). With SON having only one staff member to review dozens of applications sent to the First Nation, a proposal not seen on previous list submissions was missed, prompting SON to advise they did not feel consultation requirements for that project had been satisfied. The OMNRF conceded to providing funding for SON to participate in further consultation, but without establishing a clear process for that engagement. The funding arrangement

was never realized, prompting the Ontario Divisional Court to suspend the application in question. Ultimately Justice Corbett's 2017 ruling asserted that requests for funding that build capacity where community expertise is lacking are not without merit, especially when the costs incurred are triggered by the desire of the proponent or Crown to advance a project (Wilson 2019). Essentially, the ruling reaffirmed that the benefits of the "duty to consult" cannot be actualized if First Nation communities do not possess the necessary capacity to represent themselves in an undertaking (Bombay 2010a). Moreover, in the context of natural resource development, capacity is not to be understood solely as the ability for Aboriginal peoples to assert their established rights. At the community level, having staff with land and resource management capabilities is essential to maintain the autonomy of First Nation governmental structures. The Crown's requirement to consult and accommodate has legitimized the interests of First Nations in resource development on a case-by-case basis, but the Crown persists at being unable to address the cumulative capacity needs of Indigenous peoples (Bombay 2010a)

First Nation Involvement in the Forest Sector

The inclusion of Indigenous social values, which were not considered a priority in earlier projects, are now germane to most undertakings involving First Nation communities (Zurba et al. 2016). Prior to this current period of enlightenment, First Nation communities turned to industry as the principal mechanism through which wealth was generated from natural resource development (Wyatt 2008). Further development of these partnerships resulted in co-management agreements where the development of forest resources was shared between the forest sector and Aboriginal communities to

varying degrees (Wyatt et al. 2013). From a capacity standpoint, many of these initial industry agreements provided only technical training and basic skills development, without establishing Indigenous decision making at the land management level. Convention during the early stages of Indigenous forestry, for example, held that communities opting to take part in forestry development projects had to adopt and adhere to the dominant practices of the time (Wyatt 2008, Fortier et al. 2013). The objectives of First Nation communities were therefore often in conflict with those of industry. This “conflict” was fueled by the fundamental lack of regard given to the underlying cultural values that framed the ways First Nation communities structured their social and ecological relationships (Natcher et al. 2005). The innate connection to land held by Aboriginal peoples, magnified by the unique legal position of recognition of their rights, established under Section 35, required that industry no longer view First Nation communities as just another partner in business (Smith 2013).

An estimated 80% of First Nation communities are located in forested areas, many of whom are actively seeking ways to develop their lands based on traditional values (Allen and Krogman 2013, Lawler and Bullock 2017). Embracing, traditional ecological knowledge (TEK) and traditional land use (TLU) mapping as components of sustainable land use and forest management during project development increases the likelihood of long-term economic sustainability in the forest, whereas poor planning and practice can have a severe impact on local livelihoods (Fortier et al. 2013, Lawler and Bullock 2017). The success of various industry partnerships and Indigenous community forestry

arrangements continues to empower First Nation communities to take part in other natural resource development endeavours. However, whether capacity is built

through meaningful social development will be the determinant of whether economic security can be sustained (Lawler and Bullock 2017).

INDIGENOUS CAPACITY DEMOGRAPHICS AND DISCREPANCIES

Census data for Indigenous peoples in Canada show upward trends across population and education measures. Employment of Indigenous peoples in the natural resource sector, however, is not reflected to the same degree in Canadian federal statistics. Furthermore, increases in the number of forest tenures held by Aboriginal communities suggest Indigenous in forestry continues to climb. A resolution of the discrepancies between the statistical data could not be established.

Population and Education

Indigenous peoples are the fastest growing population group in Canada having increased by 42.5% between 2006 and 2016, with an expected population of 2.5 million persons by 2040 (Statistics Canada 2018). On average, the Indigenous population of Canada is 10 years younger than other population groups, with a median age of 31 years. Population in the 15-34 age bracket for Indigenous peoples increased nearly 40% from 2006 to 2016 compared with 6% in non-Indigenous groups. Encouragingly, the increase in the youth population seems to correlate with gains made in education during the same 10-year period. Both high school completion rates and qualifications attained at the post-

secondary level grew in each of the three Aboriginal peoples' classifications—

First Nation, Inuit and Métis) (Figures 1, 2).

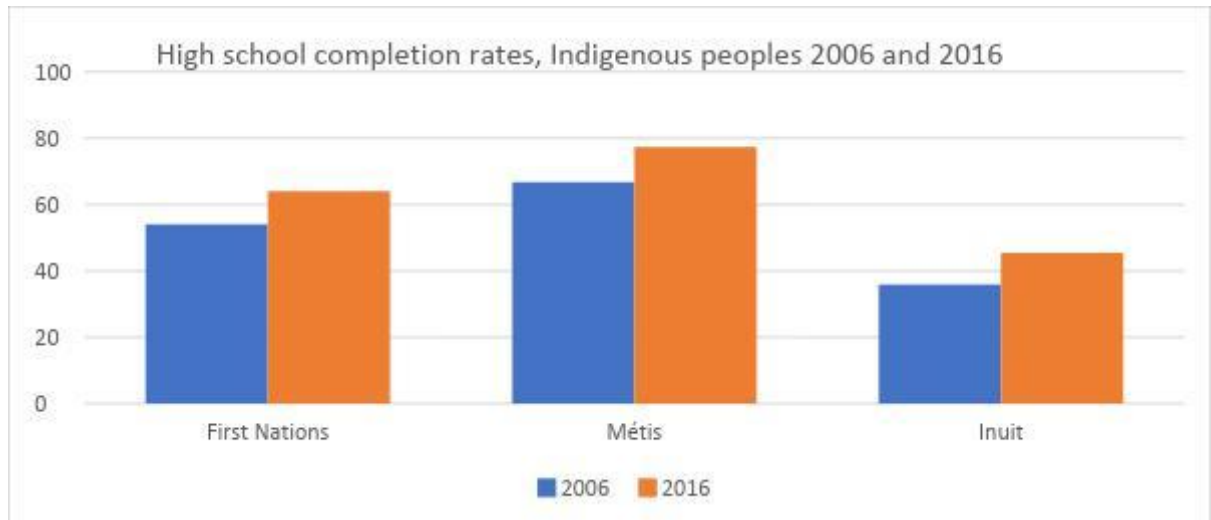


Figure 1. High school completion rates, Indigenous peoples 2006-2016 (Statistics Canada 2018)

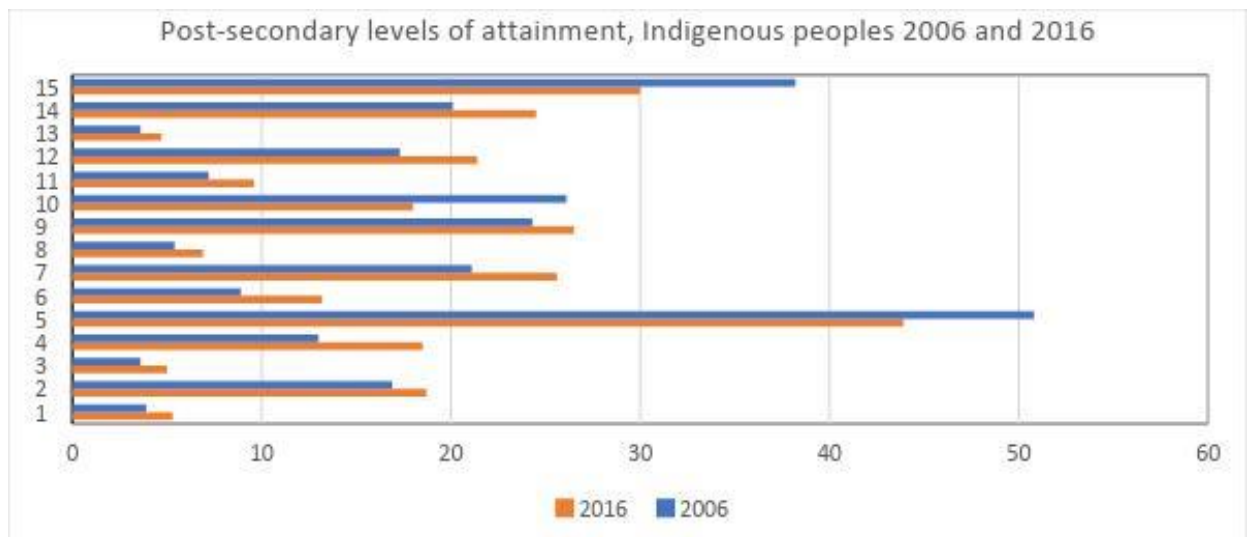


Figure 2. Post-secondary levels of attainment, Indigenous peoples 2006-2016 (Statistics Canada 2018)

Higher education is statistically shown to increase chances of employment with rates above 80% for degree holders in each of the three group classifications (Figure 3); however, gains in education and post-secondary attainment have not resulted in increases to the overall employment rates for Indigenous peoples (Figure 4). Regardless of the level of education attained, on-reserve First Nation peoples have the lowest rates of transferability from education to employment (Figure 3)

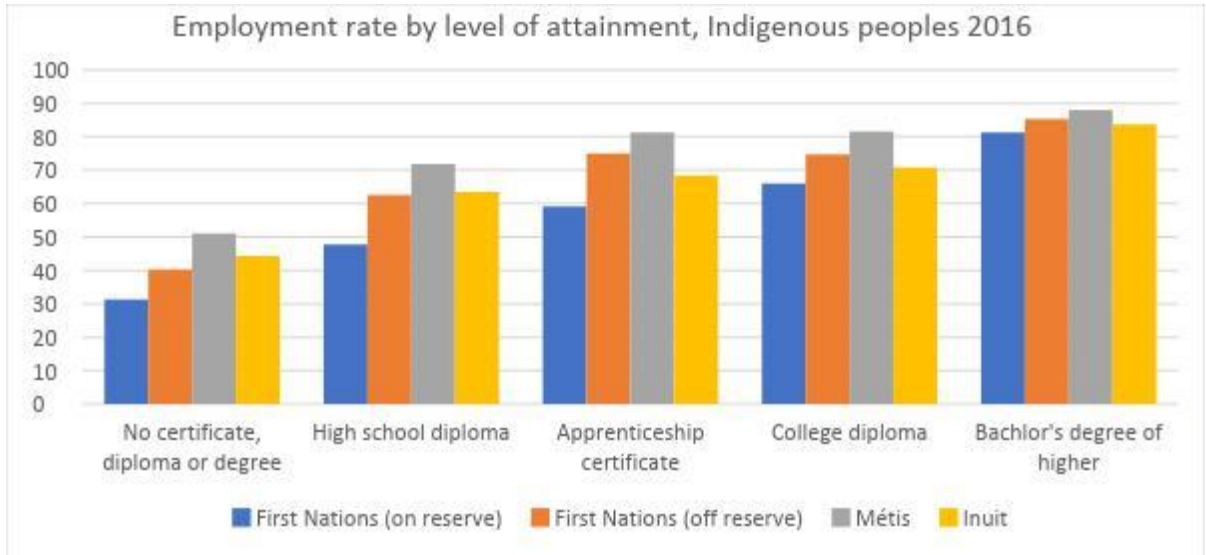


Figure 3. Employment rate by level of attainment, Indigenous peoples 2016 (Statistics Canada 2018)

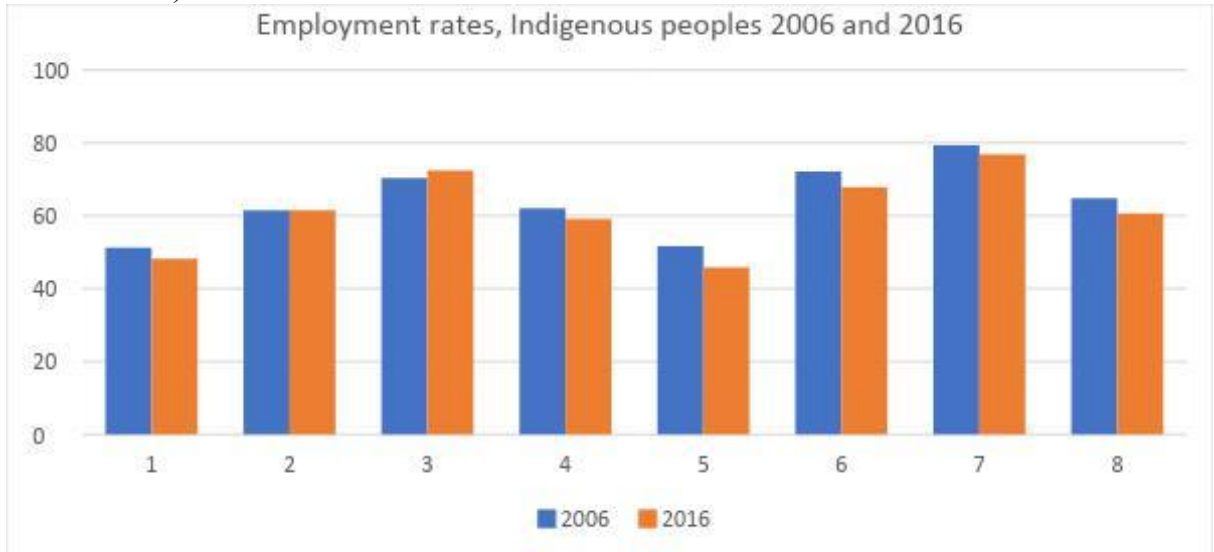


Figure 4. Employment rates, Indigenous peoples 2006 and 2016 (Statistics Canada 2018)

Employment in Natural Resources

During the period of 2013-2017, employment in the natural resources field fell by 7.2% (Statistics Canada 2018). Most of this loss can be attributed to downturns in the energy and forestry sectors, resulting in a recovery of employment in natural resources not being observed until 2017 (Table 1). Natural resources employment statistics are

combined with those from the agricultural and conservation sectors and then subdivided by scientific or technical work (Table 2). Regardless of these categorizations, employment statistics relating to the natural resources sector show differences of close to 200% between the numbers of non-Indigenous people employed to those of Indigenous peoples (Statistics Canada 2018).

Table 1. Employment by sector classification, Natural Resources (rounded to 1000)
(Statistics Canada 2018)

Sector Classification	Year				
	2013	2014	2015	2016	2017
Natural resources	640000	629000	607000	581000	595000
Forestry	125000	126000	128000	128000	131000
Minerals and mining	198000	192000	187000	181000	186000
Energy	294000	288000	268000	246000	252000
Hunting, fishing and water	23000	23000	24000	26000	26000
Energy including fuel wood, coal and uranium	308000	301000	278000	25000	264000
Downstream, forestry	99000	98000	99000	99000	102000
Downstream, minerals and mining	212000	215000	218000	209000	213000

Table 2. Comparison of Indigenous and non- Indigenous employment by occupation classification (x1000)

Occupation Classification	Year				
	2014	2015	2016	2017	2018
<u>Indigenous</u>					
Agriculture, natural resources and utilities	28.6	33.5	30.6	31.3	31.1
Professional, scientific and technical services	15.8	17.6	19.1	21.1	23.5
Natural and applied sciences and related	20.1	20.3	21.1	23.5	24.6
Natural resources, agriculture and related production	15.5	19	18.3	19.4	19.3
<u>non-Indigenous</u>					
Agriculture, natural resources and utilities	785.4	752.8	720.8	709.8	729.7
Professional, scientific and technical services	1315.6	1346.3	1371.6	1424.8	1441.2
Natural and applied sciences and related	1328.3	1379.6	1379.6	1404.8	1452.3
Natural resources, agriculture and related production	371	336.2	336.5	347.1	363.5

Discrepancies between education and employment

The natural resources sector, and more primarily forestry, is a minor employer of Indigenous peoples. In 2016, only 6% of the forestry sector in Canada was represented by Indigenous employees (Natural Resources Canada 2018), despite demographic evidence which places approximately 500 First Nations communities within the forested

areas of Canada (Bombay 2010a). Additionally, the number of Indigenous-held forest tenures in Canada for 2018 remained stable or increased in every province except Quebec 2018 (NAFA 2018). There is currently no rationale for the discrepancies between the federally published statistics and those sourced from other public and private institutions.

While post-secondary education proves to ameliorate the rate of employment for Indigenous peoples, proportional differences exist in the types of jobs offered from development projects taking place in traditional lands. The mining sector in particular, despite policies and quotas for hiring Indigenous workers, continues to supply only entry-level jobs to local First Nations communities while importing outside skilled labour (Gibson and Klink 2005). Education is generally assumed to aid in the development of human capital; however, recent work by Cahill (2018) continues to confirm what is being statistically recorded: that high school and even post-secondary education attainment is not translating to increases in Indigenous employment. Development programs that can appreciate these discrepancies and complement existing education policies are needed to support lasting economic development and employment for Indigenous peoples (Cahill 2018).

BUILDING INDIGENOUS CAPACITY IN THE FOREST SECTOR

The forest sector is a long-time contributor to the Canadian economic landscape. Improvements in the relationships between Indigenous peoples and the forest industry have resulted in an increased recognition of traditional rights

and the economic benefit of meaningful partnerships with Aboriginal communities. Financial support on the part

of the federal government to promote Indigenous participation in the sector is also seen as a step towards building Indigenous capacity in forestry.

National Aboriginal Forestry Association

As a mainstay of the Canadian economy, forestry contributed approximately 2.5 billion of dollars to the country's gross domestic product annually with a direct workforce in 2017 of approximately 210,000 people (Natural Resources Canada 2018). As previously described, First Nation communities, despite their proximity to forestry undertakings, are consistently underrepresented in both the employment and business activities of these operations. The relationship between Aboriginal peoples and forestry has improved over recent years, highlighted by projects that show the potential for increased First Nations participation in the sector (Wilson and Graham 2005).

Having previously acknowledged the need to build Indigenous capacity for the forestry sector, the National Aboriginal Forestry Association (NAFA) began developing material for education and training that would promote interest in forestry employment opportunities (Smith 2002). Beginning in 1995, NAFA surveyed the available post-secondary education programs that had a focus on natural resource management with the goal of compiling a catalogue of options to encourage Aboriginal involvement in the forest sector (NAFA 1997). The survey concluded that several offerings were available for both training and education, but that the level of employment hinged on the level of forestry activity led by the industry. The survey further exposed that the number of Aboriginal students holding technical diplomas did not translate to career advancement as registered professional foresters (RPFs). As the recognized

professional authority in terms of land and forest management, RPFs hold significant decision-making power. In

light of this, NAFA shifted its focus on capacity development towards encouraging Aboriginal forest workers and forestry technicians to pursue the RPF designation (NAFA 2001, Smith 2002). In 2001, NAFA set a goal to increase the number of Aboriginal RPFs to 500 within a decade (NAFA 2001). Through the creation of their Aboriginal Professional Development Action Plan, NAFA would direct its attention to promoting forestry as a career option for Aboriginal youth and develop a framework for initiatives to advance those careers into the professional sphere. NAFA released two publications in 2010 pertaining to building Aboriginal forestry capacity. Both documents highlight that the persistent barriers for Aboriginal participation in the forestry sector are linked to the forest management regimes in place by the provincial and federal governments (Bombay 2010a, 2010b).

Sector support for Aboriginal forestry

In 2005, NAFA, with support from the Forest Products Association of Canada (FPAC), compiled a research team to conduct a study of the partnerships between First Nation communities and forestry companies (Wilson and Graham 2005). One aim of the study was to gain insight into how First Nation participation in the forest sector was translating into employment and business opportunities. Of the many conclusions reached by the study, increasing capacity was cited as requiring a concerted effort on the part of industry and government to assure the First Nation “stake” in forestry undertakings (Wilson and Graham 2005). Rather than gaining only short-term economic benefit from royalties or temporary employment, First Nation communities were consistently shown as attempting to assert their position in forestry to achieve long-term economic goals, including capacity development. (Wilson and Graham 2005). The

methodical improvements to Indigenous-held tenures, catalogued by NAFA in four reports for the periods 2002-03, 2007, 2015, and 2018, have further elevated the station of Aboriginal forestry as reflected in a hold of 10.5% of the total Canadian wood allocation in 2018 (NAFA 2018).

Concurrent to the earlier NAFA studies, a survey by the Sustainable Forest Management Network (Hickey and Nelson 2005) on Aboriginal-forest industry partnerships was also published, revealing that partnerships based on meeting regulatory and legal requirements were unsatisfactory at contributing to the ability for First Nation communities to develop long-term capacity for participation in the forestry sector (Hickey and Nelson 2005) From the study, several policy recommendations were made to clarify the arrangement of partnerships that can come from First Nation engagement with the forest sector. A common thread was the lack of consistency between government and industry policies to establish avenues for capacity building that promoted long-term First Nation participation in forestry (Hickey and Nelson 2005). Co-management agreements, where the rights and responsibilities of forest management ultimately rest with government, as opposed to First Nation communities, are seen to provide no security for long-term economic development (Beaudoin et al. 2015). Furthermore, the delegation of forest management responsibility by government to industry, compounds the complexities surrounding resource authority, causing opportunities for Indigenous capacity building to become lost due to the efforts needed to clarify legal and regulatory parameters (Wyatt et al. 2013, Fortier et al. 2013, Beaudoin et al. 2015).

First Nations Forestry Program

Initially presented as a five-year partnership between Natural Resources Canada (NRCan) and Indian and Northern Affairs Canada (INAC), the First Nations Forestry Program (FNFP) was introduced in April of 1996 (Smyth 1998). The FNFP was a proactive and altogether different economic development model having a central focus on Indigenous self-sufficiency and a majority representation of First Nations on management committees (Dubois et al. 2003). Programs undertaken by the FNFP included silviculture operations, integrated forest resource planning, and studies on TEK. By 2002, at least 400 First Nation communities had taken part in the FNFP which translated into 4,800 participants receiving on-the-job training and experience (Dubois et al. 2003). Although a number of successes were achieved through the FNFP, the initial term limit placed on the program was thought to be insufficient for First Nations to design management systems needed to achieve long-term goals (Smyth 1998). The FNFP was steadfast in recognizing achievements made in skilled labour forestry jobs for Indigenous peoples but acknowledged that technical and professional forestry activities, including project management and administration, required specific levels of education and training (Dubois et al. 2003).

TRADITIONAL ECOLOGICAL KNOWLEDGE AND IMPLICATIONS FOR INDIGENOUS CAPACITY

Contributions by Indigenous peoples to natural resource development include the conjoining of traditional knowledge with conventional research and land management methodologies. However, the integration of the Indigenous

ways of studying the natural landscape has proven difficult to ratify within the confines of Western science. The

development of models to amalgamate, rather than assimilate, Indigenous science provides a viable solution that also has implications for capacity building.

Traditional Ecological Knowledge (TEK)

Recognition of the need to research and integrate TEK in natural resource development and subsequent resource management has steadily risen in the last decade (Nadasdy 1999). It has been surmised that by including this facet of understanding for the natural environment, the capabilities of both land use planners and Indigenous peoples can be elevated. Hence, integration of TEK in natural resource development policy is an important first step towards the creation of meaningful capacity for Indigenous peoples looking to actively participate in the sector (Nadasdy 2005, Reo et al. 2017). A study conducted by Reo et al. 2017 revealed that participants felt opportunities for taking ownership over cataloguing of TEK were found in situations that prioritized Indigenous-led data collection or information monitoring (Reo et al. 2017). The key barrier presented for wider integration of TEK in land-use planning comes from the dialectical opposition in how the Western scientific community and First Nation communities record and catalogue knowledge. The methods for documenting TEK are rooted in the social sciences (Huntington 2000). Most traditionally, TEK would be passed down orally or through direct observation under the guidance of an Indigenous Elder or other recognized local authority (Tengöet al. 2017). This is a difficult approach for Western scientists to incorporate into research and has led to the majority of TEK being catalogued for documentation purposes only (Nadasdy 1999).

There is, however, ample evidence for the utility of TEK. A recent example can be seen in the research conducted by Fish-WIKS (2015), a program which sought to find

ways to integrate Indigenous understandings of sustainability to improve the decision-making processes of fisheries managers. It was the intent of researchers to address gaps in how Canadian fisheries were being managed; primarily that ecosystem-based management using only Western knowledge systems was not holistic enough to provide direction for practices that promoted conservation, adaptability or resiliency for sensitive habitats and species (Latulippe 2015). Ultimately, Fish-WIKS revealed that improving fisheries management was more dependent on improving the fisheries governance structure, one that was entrenched by practices bound within static spatial limits. The very nature of TEK is that its application cannot be made homogenous outside of a regional context.

As a knowledge system, TEK does not subscribe to a standard set of agents, practices or institutions through which information can be shared or disseminated universally (Tengöet al. 2017). TEK is defined by Indigenous peoples as much more than a body of knowledge directing how humans should interact with the natural environment (McGregor 2004). Indigenous views on TEK are that it is an action-based “way of being” as opposed to the product-based classification of the physical aspects of natural areas. TEK solidifies the Indigenous value that humans and the environment are inseparable, to be observed as a whole rather than a collection of systems (McGregor 2004). It has been suggested that the inability to adequately quantify TEK to the satisfaction of the Western scientific community persists as the barrier to its full integration in natural resources policy (Nadasdy 1999, Huntington 2000). A broader willingness to consider the relevance of TEK beyond a mode of classification for ecological information will be required to actualize its academic validity

and its application within resource management. A full integration of TEK as a philosophy for

science is lacking in the curriculum for resource management and, when placed in a context where the majority of research on Indigenous peoples and traditional land is undertaken by non-Indigenous researchers, the potential for bias needs to be acknowledged (Allen and Krogman 2013, Latulippe 2015).

Quantitative research that seeks to include the holistic and experiential nature of TEK in relation to its utility for building Indigenous capacity also continues to falter, due to its inability to be standardized and made ready for universal application (McGregor 2004). The values and knowledge amassed by Indigenous peoples through TEK cannot be compartmentalized, and efforts to create a system for cataloguing TEK based on Western systems of record-keeping can be viewed as an appeasement to reconciliation (Nadasdy 1999, Latulippe 2015). Applications for TEK in natural resource management require effective collaboration of the Indigenous and Western knowledge systems for sector-wide benefits to be realized.

Ecology as an Indigenous Science

Ecology is the Western science that most closely represents the value of the relationship to nature held by Indigenous peoples (Hatcher et al. 2009). As the study of interrelations and interconnectedness, ecology can be identified as an Indigenous science, having informed itself from the Aboriginal collective heritage (Cajete 2000). Represented as a way of knowing that is relevant to aspects of the traditional Indigenous world-view, ecology provides a solid underpinning for the Indigenous learner. To this end, ecology as an Indigenous science summarizes TEK as both a source of knowledge for ecosystem

functioning and a vehicle for the kinship that is established through traditions
and teachings that transmit information from one generation to the next

(Battiste and Henderson 2005). Ecology through this lens provides a point of reference for land-use planners who may otherwise be unable to find common ground while providing an opportunity for Indigenous capacity in resource management to proliferate.

Two-eyed Seeing

The term “two-eyed seeing” comes from work done at the Integrative Science program at Cape Breton University. Introduced to the program in 2004 by Mi’kmaw Elder Albert Marshall, Hatcher et al. (2009) established their basic premises for this expanded method of teaching by encouraging learners to realize that beneficial outcomes are more likely when two or more perspectives are applied concurrently (Hatcher et al. 2009). Two-eyed seeing (TES) can then be further understood as seeing the strength of Indigenous knowledge with one eye and those of the Western knowledge system with the other. Hatcher et al. (2009) further suggest that by using both eyes together to “see” a problem, solutions can be derived from a holistic and more deeply informed perspective (Hatcher et al. 2009). The implication for TES in the context of building Indigenous capacity is that conventional approaches to teaching have been unable to provide an avenue for learners to both uphold and challenge the expectations of the Eurocentric system for education (Madden 2015). Programming that moves Indigenous learners into a position to take ownership over their education by providing context for building upon traditional relational views of the human, natural and spiritual worlds, enhances both problem-solving and land planning skills. This ability to “see” both sides of the education experience provides Indigenous learners with a sense of empowerment that then forms the engagement they have with the world, the ramification of which is a more robust network of resource managers (Madden 2015).

BUILDING INDIGENOUS CAPACITY THROUGH ENVIRONMENTAL MONITORING

Natural resource development projects require ongoing monitoring of the environmental and socio-economic impacts stemming from operational activities. Given the place-based nature of approximately 80% of Indigenous communities within the forests in Canada, capacity building for Aboriginal communities can be enhanced through participation in, and governance over, environmental monitoring. The effectiveness of environmental assessment for resource-based projects can also be amplified through the application of community-based monitoring.

Environmental Monitoring

The term environmental monitoring (EM) refers broadly to the practice of ensuring the impacts of human activities do not result in negative ramifications for natural systems (Shared Values Solutions 2012, ECO Canada 2018a). EM consists of observing and recording the changes to the environment before, during and after a development undertaking. EM is especially associated with natural resource development since many extraction-based projects take place in natural settings (ECO Canada 2018a). EM reflects the adaptive management approach that has been widely adopted by the natural resource development sector, serving to assist in meeting regulatory and legislative management requirements (Davidson-Hunt 2006, Arciszewski et al. 2016). Regular and direct observation of environmental conditions is required for the iterative model of adaptive management to function effectively. Establishing the

criteria and indicators for measuring environmental conditions through EM

offers

Indigenous peoples a formidable mechanism for asserting governance over and building capacity for resource development projects (Davidson-Hunt 2006, McGregor 2010).

Monitoring for Environmental Assessment

As previously stated, natural resource development projects in Canada are increasing in number and magnitude, and the proximity of Indigenous peoples to these projects has prompted a demand by First Nation communities to participate meaningfully in environmental assessment (EA) processes (Udofia et al. 2017). Conflicts between Indigenous peoples and project planners have been noted within the assessment process when proponents and regulators seek to move through project phases with efficiency as the prime objective. This conflict is exacerbated by government efforts to further streamline the EA process (Noble 2015:33-38). The policy community tasked with making decisions for the direction and scope of an environmental assessment must, therefore, acknowledge that what constitutes “meaningful” participation will vary by stakeholder (Davidson-Hunt 2006, Shared Values Solutions 2012, Udofia et al. 2017).

The meshing of established Western science with TEK is observed most commonly in the EA process, where establishing the baselines of natural conditions become integral to the development of protocols and practices for mitigating the impacts of an undertaking (McGregor 2004, Udofia et al. 2017). Through the adoption of TEK as relevant to the EA process, opportunities for building Indigenous capacity in both participation and monitoring are presented. Efforts to mitigate known impacts stemming from resource development through the EA process cannot sufficiently account for the externalities of long-term economic, social and environmental impacts to Indigenous

peoples, requiring instead continuous community input and effects monitoring (Shared Values Solutions 2012, Arciszewski et al. 2016).

Community-based Monitoring

The increased likelihood for Indigenous peoples to be negatively impacted through natural resource development is greater than that of the general public (McKay and Johnson 2017). The importance of maintaining the Indigenous subsistence lifestyle relies heavily on the ability for the natural environment to remain resilient to changes from development. Community-based monitoring is essential for promoting resilience. The role of First Nation communities to act as monitors for change ensures that not only relevant environmental data, but other community value-based information, is collected and made available for use in adaptive management (Davidson-Hunt 2006). Community-based monitoring also provides a mechanism for reducing the costs associated with resource management and can foster the strengthening of partner relationships by limiting the number of external parties (Conrad and Daoust 2008). At the crux of community-based management is that there are no definitive methods by which it is implemented.

The nature of the resource development project itself can provide a framework as to the pertinence of data required to meet regulatory obligations, but the terms under which that data is collected can only be established through the partnership building process (Berkes 2009). Early phases of project development require that parameters under which knowledge, traditional or otherwise, will be collected and shared be clearly established. Implications for

Indigenous capacity are enhanced by a knowledge-making process that incorporates a community's social context, thereby establishing Indigenous

authority in the environmental governance of development projects while instilling validity to traditional epistemology (Berkes 2009).

Such collaboration is exemplified by the Whitefeather Forest Initiative (WFI), a community-based economic development and resource stewardship enterprise that began in 1993 between the Pikangikum First Nation and the Ontario Ministry of Natural Resources (OMNR) (O’Flaherty et al. 2008). The WFI began as a community-based land use planning initiative to support Pikangikum First Nation’s desire to turn their traditional knowledge of woodland caribou into a stewardship action to influence resource management policy. Attempts to apply authority to oral and other non-verbal sources of Indigenous knowledge within the established system of the OMNR reaffirmed what was already noted in the academic literature: that a significant divergence between Western management principles and those of Indigenous peoples had to be acknowledged (O’Flaherty et al. 2008). Having viewed previous resource management of traditional lands as being directive rather than inclusive, the WFI provided surrounding First Nation communities an opportunity to observe how culturally appropriate resource management could be developed. Based on the work done in the WFI, Pikangikum First Nation gained direction for establishing a commercial forestry opportunity in keeping with their traditional stewardship values (WFM 2008a). In preparation for this undertaking, Human Resources and Skills Development Canada agreed in 2009 to provide funding for the creation of a training program to build capacity for Indigenous peoples in or near the Whitefeather forest (WFM 2008b). The Whitefeather Forest Aboriginal Skills and Employment Partnerships Corporation (ASEP) was formed as a result,

training a total of 167 individuals with five attaining diploma or certificate level achievements. The ASEP initiative ended in March

of 2012 but remains noted by community Elders as a successful endeavour (WFM 2008a).

ASSESSING AND EVALUATION OF SKILLS TRAINING

PROGRAMS Skills-training initiatives subscribe to various assessment methods. Program

developers use these assessments to gauge the effectiveness of training delivery and make adaptations as required. The level of accreditation and the ability to satisfy employment objectives are often used as benchmarks for determining learner achievement. However, assessments that lack feedback from program participants cannot adequately determine whether the training received has been meaningful or not.

Assessment of Performance and Achievement

Effective assessment refers to the way in which instructors and educators collect information regarding the performance and achievement of learners (Gronlund 2008). The term assessment is commonly used to describe the process of measuring the success of learners to ensure competency standards have been met. Assessment can also, however, refer to the collection of information about a program and its participants to examine the degree to which training outcomes result in achieving learning goals (Gronlund 2008, Praslova 2010). Conventionally performance and achievement have been determined through grades and examination results (Rawlusyk 2018). Accredited programs, specifically, emphasize academic standing and intellectual development as a determinant of learner achievement (Praslova 2010). Current research provides evidence that student

outcomes alone are not enough to understand the effective delivery of training programs. Feedback from students can be used as an enhanced form of

assessment to validate the objectives of institutional instruction based on the real world application of training received. Development of a framework that incorporates meaningful program assessment from learners is helpful to curriculum developers looking to be proactive in their evaluation of program effectiveness and instructor delivery (Chalmers and Gardiner 2005, Praslova 2010).

Learner Self-assessment

Extended performance assessment, including learner self-evaluation techniques for skills training programs, can be drawn from many different disciplines. The motivation for the inclusion of self-assessment by learners in skills training programs is derived from research that indicates active participation in the assessment process enhances the learning experience (Andrade and Valtcheva 2009). Self-evaluation empowers the learner to identify strengths and weaknesses observed through direct participation in training, along with providing a forum to give program feedback. Transference of skills developed through such critical thinking exercises is suggested to promote competency in other aspects of the learning experience and increase the likelihood of longer term educational pursuits (Andrade and Valtcheva 2009).

Program developers seeking to design models for training that include Indigenous knowledge are encouraged to be mindful that traditional knowledge systems already encourage learner self-assessment (Lertzman 2002). The experiential approach to learning typified in the Indigenous knowledge system requires that learners evaluate their interaction with the natural world through

personal reflection. Rites of passage in education are reinforced for Indigenous learners through ritualistic activities and ceremonies that cultivate an expectation for youth to integrate their knowledge with that

of their community (Lertzman 2002). The notion of students as teachers can be difficult to reconcile within technical training programs where skills competency is determined by the ability of learners to complete assigned tasks. Nonetheless, promoting self-assessment in learning is suggested to be an effective vehicle for improving the performance of trainees and instructors, consequently enhancing the content of skills training programs (Rawlusyk 2018).

METHODS

The research methods used for compiling the literature review were consistent with those used generally for reviews of literature (Fortier et al. 2013, Bullock et al. 2017, Stefanelli et al. 2018). The use of online databases and catalogues were the primary source of literature to ensure sources were both relevant and peer-reviewed, as well as being current. The chronological period used for sourcing material was 2000-2018. However, earlier sources were used in areas where exploration of the literature required historical context. Further supporting the review are documents and data from the Government of Canada including Statistics Canada, Indigenous and Northern Affairs Canada (now Indigenous Services Canada and Crown-Indigenous Relations and Northern Affairs Canada), and Natural Resources Canada.

Three established databases were used to source material: ScienceDirect EBSCOhost and iPortal. Within each of these databases, seven keyword searches (Table 3) were entered with the chronological range of 2000-2018, and the first ten citations were noted. The same keyword searches were then entered in a narrowed search for peer-reviewed sources only. The selected use of the terms “Aboriginal” and “Indigenous” was thought to be sufficient for capturing all legally recognized definitions of Aboriginal peoples in Canada. Specific searches for First Nation, Métis and Inuit peoples were not conducted, and due to the constraints of both time and scoping for undergraduate research, results including these terms that

could not be made applicable to the broader context of the thesis were not explored.

Source results from each database were individually compared to see where the material appeared using the selected keyword searches. Sources from each database

were then compared to each other to determine which material consistently appeared in the search results.

Table 3. Literature review keyword search terms

Search Term	Keyword combination
1	Indigenous capacity
2	Indigenous skills
3	Indigenous training
4	Aboriginal capacity
5	Aboriginal skills
6	Aboriginal training
7	Environmental monitoring

Source results from each database were individually compared to see where the material appeared using the selected keyword searches. Sources from each database were then compared to each other to determine which material consistently appeared in the search results. Material displayed as a result in each of the three databases, regardless of the keyword used, were subject to examination, ensuring the content was not too broad in scope and could be made applicable for use in the review.

Search terms for accessing literature from databases were kept specific to ensure only sources that contained those terms would be sourced. Material rated with a high number of citations in other works were given priority for further examination. Article abstracts were then read to determine the relevance of content for use in the review. Source material that was only available in book or other print format was noted and requested from the Lakehead University library, or where applicable rented online in digital format.

Summaries of the reading conducted for this review were grouped by theme to provide a systematic structure, and sources found to contain relevant information that

could not be classified through thematic synthesis were held aside for use in the Discussion.

The acquisition of source material for training programs required a more novel approach. A lack of content on the topic of Indigenous skills building in the academic literature prompted the use of the Google online search engine. Following the methodology previously established, keyword search terms (Table 4.) were established and then refined based on early results that were limited to economic development programs funded by federal agencies. The additional search qualifier “culture” was then added to compare whether search results would show a trend towards Indigenous-based programs. In keeping with the research parameters established for literature, specific searches for First Nation, Métis and Inuit peoples were not conducted. Search results of all keyword terms have been compiled in Table 5.

Once the compilation of training option results was completed, the criteria for assessment to select programs for further analysis was established. Three items of assessment were determined based on capacity building themes presented in the review of the literature:

- 1.) Is the delivery of the program community and/or learner focused?
- 2.) Does the program highlight the inclusion of TEK and/or TES?; and
- 3.) Does the program provide support for building long-term

capacity? Table 4. Training programs keyword search terms

Search Term	Keyword combination
1	Indigenous skills training
2	Indigenous skills training programs
2 with qualifier	Indigenous skills training programs+cultural
3	Aboriginal skills training
4	Aboriginal skills training programs
4 with qualifier	Aboriginal skills training programs+cultural

Table 5. Compilation of keyword search terms and training program results

Keyword Search Terms	Program Result
Indigenous skills training	Aboriginal Skills and Employment Training Strategy (ASETS) Indigenous Negotiation Skills Training - Banff Centre Federal Budget 2018 - Indigenous Leadership Initiative (ILL)
Indigenous skills training programs	Aboriginal Skills and Employment Training Strategy (ASETS) Aboriginal Skills Training Development Fund - BC Assembly of First Nations
Indigenous skills training programs+cultural	Aboriginal Business and Entrepreneurship Skills Training Program - British Columbia San'yas Indigenous Cultural Safety Training - Provincial Health Services British Columbia Indigenous and Aboriginal Training - ECO Canada
Aboriginal skills training	Aboriginal Skills and Employment Training Strategy (ASETS) Aboriginal Skills Advancement Program - KKETS
Aboriginal skills training programs	Aboriginal Skills and Employment Training Strategy (ASETS) Aboriginal Skills Advancement Program - KKETS Education and Skills Training - First Nations Youth Employment Program
Aboriginal skills training programs+cultural	Aboriginal Skills and Employment Training Strategy (ASETS) Aboriginal Skills Advancement Program - KKETS Indigenous and Aboriginal Training - ECO Canada Aboriginal Business and Entrepreneurship Skills Training Program - British Columbia

Program websites acted as the primary source of synoptic information for content, delivery mode and applicable use in building capacity in the natural resource sector. Where available, additional links from program websites to other background data were also used. To keep the scope of the web-based search manageable, program results from outside of Ontario were excluded from further analysis. The exceptions to this filter are two nationally-recognized programs; the Government of Canada's Aboriginal Skills and Employment Training Strategy (ASETS), and ECO Canada's Building Environmental Aboriginal Human Resources (BEAHR) program, both of which were results repeated in the keyword searches.

The expectation of any skills training program is that the design will result in increased productivity and employability of participants. Understanding this, the evaluation of skills training options for building Indigenous capacity is important due to the significant investment of time and resources required to engage in and, subsequently, complete a program. Measuring the outcomes of the programs

selected for this analysis is currently thwarted by the lack of academic literature,
availability of statistical data and

absence of an assessment framework that includes Indigenous values-based indicators. Additionally, the constraints of undergraduate research are such that this thesis should be viewed as a first step towards a fuller assessment of Indigenous-focused training programs. Expanding the scope of this thesis for use in more advanced research would include the addition of instructor and participant interviews, direct observation of classroom participation and learner self-assessments.

RESULTS

The results of the thesis have been organized to provide a summary of the literature reviewed followed by case study analyses of four Indigenous training programs: Aboriginal Skills and Employment Training Strategy (ASETS), Building Environmental Aboriginal Human Resources (BEAHR), Outland Youth Employment Program (OYEP), Kiikenomaga Kikenjigewen Employment and Training Services (KKETS) and Indigenous Leadership Initiative (ILI).

Literature pertaining to building opportunities for Indigenous peoples to partake in natural resource development is heavily weighted in the domain of forestry. Readings indicate that building Indigenous capacity in the forestry sector revolves around the nature of resource agreements and their related policies. Issues of tenure and co-management were common themes that did not specifically address the ways in which those agreements lead to meaningful capacity, other than enhancing the participation of Indigenous peoples in forestry overall. It can be understood from the literature that the enhancement of capacity for Indigenous peoples within forestry will require an ongoing transformation of policy and funding mechanisms that allow First Nation communities to represent their interests in the sector. Conversely, when provided capital to develop forestry operations independent of industry, the literature provides evidence that First Nations have a foundation upon which to augment existing capacity in Aboriginal forestry (Fortier et al. 2013, Wyatt et al. 2013, Beaudoin et al. 2016, Bullock et al. 2017).

Literature as to the involvement of Indigenous peoples in natural resources management is not limited to just the forest sector. EM is highlighted in the most recent

scholarly literature as an avenue that promotes long-term governance for Indigenous peoples in resource development projects. Building Indigenous capacity, specifically through the increased participation of First Nation communities in the EA process, is indicated as a contemporary opportunity for Aboriginal peoples to assert both their treaty and inherent rights. Applications for TEK are also represented in this area of the literature, though its utility is primarily highlighted for use in science, health and policy for resource management. A connection between TEK and skills training programs could not be established in formal academic literature (Nadasdy 1999, McGregor 2004, Hatcher et al. 2009, Arciszewski et al. 2016, Cahill 2018).

Aboriginal Skills and Employment Training Strategy (ASETS)

In 2009 the Canadian federal government released the Federal Framework for Aboriginal Economic Development. Included within was the establishment of the Aboriginal Skills and Employment Training Strategy (ASETS), a skills development partnership aimed at providing links to training aligned with labour market needs to promote greater Indigenous participation (Government of Canada 2017, 2018c). Under the responsible authority of Employment and Social Development Canada (ESDC), ASETS supports Indigenous service organizations that deliver employment-focused programs ranging from essential literacy and numeracy abilities to advanced skills-based job training. The objective of ASETS is to provide demand-driven skills development for First Nations, Métis and Inuit people that ensures sustainable and meaningful employment (Government of Canada 2017, 2018c). Currently, ASETS undergoes an internal performance measure assessment to determine the

progress of goals established through delivery programs. Indicators of success are all quantifiable counts that ESDC

then uses to gauge increases in the number of Indigenous people employed in the labour market (Government of Canada 2018a).

In 2017, the Government of Canada released the outline of the federal budget for 2018. Underpinning Budget 2018 is a section titled “Reconciliation” which highlights investments in several areas of responsibility the Canadian government recognized as imperative to furthering their steps towards reconciliation with Indigenous peoples in Canada (Government of Canada 2018b, Indigenous and Northern Affairs Canada 2018). Acknowledging that gaps in education, employment, and income exist between non-Indigenous and Indigenous peoples, Budget 2018 proposes to invest 2 billion dollars over five years to replace ASETS in support of a new Indigenous Skills and Employment Training strategy (ISET) (Government of Canada 2018c). Effective April 2019, ISET will be comprised of four distinct labour market strategies, representative of the three legally recognized Aboriginal groups, with an additional stream for non-affiliated Indigenous groups. This new approach is centred around a formal recognition that fiscal relationships between government and Indigenous peoples must be focused on programs that support the Indigenous vision of self-determination (Government of Canada 2018b). The mechanisms that will be used to advance the ISET cannot be currently assessed, and readers looking for more information are redirected to ASETS websites or advised to contact their local service organization.

The ASETS program can be accessed through 600 points of service across Canada (Government of Canada 2018a) which suggest the strategy’s approach to capacity development is cognizant of the need to be integrative and function at the community level. Program delivery is also spearheaded at the

community level, which allows services to be tailored to the needs of Indigenous peoples, including the receipt of

training that is relevant to the local labour markets in want of employees. The ASETS program appeared in every keyword search result, except when the qualifier “cultural” was added. Therefore, it is not clear through the ASETS or ISET program models whether the inclusion of TEK takes place in program offerings, or if initiatives focused on enhancing the use of the Indigenous cultural knowledge system in natural resource development are eligible for funding.

Building Environmental Aboriginal Human Resources (BEAHR)

ECO Canada provides a suite of nationally recognized training courses aimed at developing technical, environmental competencies for entry-level monitoring employment through the Building Environmental Aboriginal Human Resources (BEAHR) program (ECO Canada 2018b). In partnership with the Aboriginal Human Resources Council (AHRC) and Canada’s Sector Council Program, the BEAHR program is designed to provide customizable certifications that meet capacity needs for Indigenous groups and First Nation communities taking part in natural resource and energy developments (BEAHR 2017). With a mandate to offer pre-technician level skills and training, the BEAHR program, though not accredited, does provide support for learners looking to pursue further training in the environmental field (Allen and Krogman 2013).

The BEAHR program also offers opportunities for Indigenous peoples to assume the role of environmental monitors over autonomous community projects such as waste management sites (BEAHR 2017). Land-use planning skills and training are also provided which further develops capacity in First Nation communities for participation

in the EA process through a more robust contribution to values scoping and impact identification.

Community-based delivery of the program is recommended. However, both public and private organizations can apply to become licensed trainers, who in turn select qualified instructors to deliver the BEAHR program on their behalf (BEAHR 2017). Standardized program offerings are advertised as an efficient way for capacity to be built for project specific goals but offer no indication as to their ability to establish meaningful, long-term employment in resource development. Evidence for the contributions of the BEAHR program to the natural resource sector was not found to be available through public or literary sources.

The appearance of the BEAHR program in keyword search results appeared once the qualifier of “cultural” was added. However, a review of the available program guides indicates only one module that includes “local knowledge”. Guide outlines also describe that BEAHR is inclusive of Elder participation, but no framework for this integration is provided. It can be surmised that the BEAHR program is reliant on communities to supplement the addition of TEK and other Indigenous-focused knowledge to satisfy this component. Support for First Nation communities that do not have the existing capacity to provide learners with access to Elders or other community sources of knowledge is not addressed. The success of BEAHR in its ability to include TEK or other Indigenous knowledge in programming is therefore difficult to ascertain.

Assessment of the BEAHR program as “culturally relevant” is not possible based on the information available. Furthermore, the encouraged use of third-party program instructors is problematic in this design as it reinforces the

homogeneity of course content, thereby negating the customization required to address the unique needs of

individual First Nation communities. While the technical aspects included in the BEAHR program suite have the potential to build Indigenous capacity for competency in skills relating to EM, there is very little to suggest that community or learner input is required to accomplish this. Based on the lack of accessible information, an assessment of the BEAHR program's ability to expand meaningful Indigenous capacity in natural resource development is beyond the scope of this thesis.

Outland Youth Employment Program (OYEP)

The Outland Youth Employment Program (OYEP) is a joint venture between education and government institutions operated by the facilities management corporation Dexterra (Dexterra 2018). First iterations of the program began in northern Ontario as the First Nations Natural Resources Youth Employment Program (FNNRYEP) to promote interest in Indigenous youth aged 16-18 to pursue education, training and employment in the forest sector (Confederation College n.d.). OYEP operates three forestry training camps for Indigenous youth in Ontario and one in British Columbia. Through partnerships with post-secondary education institutions, OYEP also provides a network of support for participants interested in pursuing certification or management designations (Dexterra 2018). The overarching aim of the program is to build capacity for First Nation communities by encouraging youth to participate in the natural resources sector through employment. As a community-driven initiative, OYEP has received national recognition for their work, building partnerships with over 40 northern Ontario First Nation communities and employing nearly 500 Indigenous youth from 71 communities across Canada (Outland 2018).

There is no direct reference to the inclusion of TEK in the delivery of the OYEP program. A scholarly examination of OYEP conducted by Robitaille (2018) includes participant commentary confirming that absent the inclusion of inter-generational knowledge supplied by local Elders, their experience in the program would not have been as meaningful (Robitaille 2018). Despite a number of statistics offered by Dexterra to substantiate their work supporting OYEP, these results do not appear to have an established presence in academic literature.

Kiikenomaga Kikenjigewen Employment and Training Services (KKETS)

In 2010, in the face of proposed mining development in the Ring of Fire region in Ontario's Far North, Matawa First Nation Management (MFNM), developed an education training program to support their community membership with assistance from Human Resources and Skills Development Canada. Objectives of the Kiikenomaga Kikenjigewen Employment & Training Services (KKETS) are to provide relevant training options to build community-focused capacity and support employment opportunities within First Nation community service areas (MFNM 2019). The nine member communities of MFNM have access to program supports made specific to learner needs with the understanding that participants will be empowered to forward their professional careers in the labour market. Training is currently emphasized to build Indigenous capacity in skilled trades that can be made applicable in the local mining sector supported by both industry and post-secondary institution partnerships (MFNM 2019).

The Aboriginal Skills Advancement Program (ASAP) is an additional component of KKETS designed to assist adult learners in completing the Ontario

secondary school diploma and promote advancement in skilled trades training (KKETS 2017). Further skills upgrading support for Nishnawbe Education and Training (NEAT) is also available through a partnership between KKETS, Confederation College and the Canadian-based mining firm Noront. Designed as a post-employment program, NEAT provides community members with an opportunity to receive hands-on, mentored training delivered by Noront that is reinforced with soft skills learning to improve the industry employment experience (Grewal 2018).

KKETS is deployed at the community level through the use of Employment Community Coordinators (ECCs) (Grewal 2018). This facilitation approach arose out of an assessment conducted by KKETS partners which revealed that barriers in access to education and training resulted in an inability to take advantage of local employment opportunities. First Nation communities looking to enhance their membership's capacity were also seen to be limited by the acquisition of on-site instructors and the additional technological barrier of computer and internet access (Grewal 2018). Barriers related to education are addressed at the community level through access to one-to-one learner support. However, KKETS continues to identify that poor coordination of programs and support services for remote First Nation communities persists as a gap not seen in other rural northern Ontario communities (Grewal 2018).

The establishment of long-term capacity for MFNM members is predicated on the ability for First Nation communities to participate in a range of resource development projects. The fluctuations of both the forest and mining sector labour markets continue as barriers that can divide capacity within communities as workers transition between projects. Budgetary

constraints further exacerbate these capacity shortfalls, prompting communities to forgo large-scale project participation

opportunities due to a lack of enhancement infrastructure and institutional support for expanded skills training (Grewal 2018).

The KKETS program provides insight into how circumvention of federal government support can be made possible through the creativity afforded by an independent Indigenous governance structure. Programming offered under KKETS is driven by its focus on a key labour market which at first glance may be interpreted as a limiting factor, but upon further assessment is a strong asset. The ability for the KKETS model to remain community and learner-focused is supported by the organization's decision to hone in on an employment sector that is highly regulated: the mining industry has technical and regulatory requirements for training that are well established. Readily meeting the core competencies of the mining sector allows MFNM members to spend resources exploring the externalities of capacity building in an Indigenous context. KKETS does not describe how the inclusion of TEK or other traditional knowledge is incorporated into their training programs, although the level of connectivity between MFNM members indicates that local knowledge and resource sharing is a cornerstone to the program's foundation.

Indigenous Leadership Initiative (ILI)

With a mission statement aimed at establishing equality and respect as a partner in Canada's system of governance, the Indigenous Leadership Initiative (ILI) supports the assertion of rights for First Nation communities to develop their own conservation and sustainable development strategies (ILI 2018, Arctic

Institute of Community-based Research 2018). Launched in 2013 with support from several charitable trusts, the main

focus of the ILI's work to date has been to advance the creation of a National Indigenous Guardian Network.

The Indigenous Guardians programs employ Indigenous people as monitors of ecological health for their traditional lands, and they play an important role in the intergenerational sharing of Indigenous knowledge (ILI 2018). A recent analysis of the Indigenous Guardians programs in Canada showed a return on investment at a ratio of 2.5 to 1 (Social Venture Aspects 2016). The analysis further suggests that provisions for year-round, full-time employment are likely to increase the return on investment as monitoring activities become more robust. The skills developed through Indigenous Guardians programming enable trainees to “see with two eyes,” incorporating stewardship methods from both the Western and traditional lenses. As previously explored, the “two-eyed seeing” approach to learning is viewed as a vehicle for reconciliation as much as it is for building capacity (Barlett et al. 2012, Madden 2015)

In 2015, the ILI and the Assembly of First Nations (AFN), called on the federal government to commit 500 million dollars in funding for the Indigenous Guardians program over five years (ILI 2015, Arctic Institute of Community-based Research 2018). In 2017 the Government of Canada announced its development of the Indigenous Guardian Pilot Program, agreeing to make an initial investment of 25 million dollars over four years (Government of Canada 2018b, ILI 2018.). The pilot is designed to provide information for the approach required to establish a National Guardians Program. The pilot provides access to First Nation, Métis,

and Inuit communities and governmental organizations alike, with funds available for several initiatives including research and community-focused capacity building. As of the date of this review, the

Indigenous Guardian Pilot Project was supporting 28 programs (Figure 5) (Government of Canada 2018b.)

The utility of TEK as a component for building capacity figures prominently in the development and expansion of the Indigenous Guardians Program. Though the scholarship has yet to reflect the contributions of the Guardians Program in a capacity context, the independent analysis of Social Venture Aspects attests that the program will continue to sit at the forefront of Indigenous-led, community-based monitoring.



Figure 5. Indigenous Guardians Pilot Program map. (Government of Canada 2018d)

DISCUSSION

As highlighted in the Results, three criteria were established for use in the assessment framework: community and learner input into program delivery, traditional knowledge content, and development of long-term capacity. Within each of these criterion, indicators of measurement is applied at four levels: input, output, process and outcome. These levels are concurrent with those implemented by higher education institutions when evaluating instructor delivery (Chalmers and Gardiner 2015). Input indicators refer to the resources applied to a program during the planning and development stages, as well as the components that build the program's curriculum. Output indicators will reference the quantifiably measurable results or outcomes of the program. Process indicators reveal how the programs perform and relate the professional development of instructors and assessments of student learning to the quality of the program. Lastly, outcome indicators focus on the levels of satisfaction of all program participants (Chalmers and Gardiner 2015). The framework of assessment (Appendix I) ultimately constructed for use in this thesis is comprised of indicators meant to unpack each of the criteria with a culminating objective of determining the suitability of the program for use in building long-term, community-based Indigenous capacity.

CRITERION 1 – COMMUNITY AND LEARNER INPUT INTO PROGRAM DELIVERY

The first criterion established for use in the thesis framework is to measure the extent to which Indigenous communities and or program learners contribute to the development, delivery and improvement of the skills training

they are receiving. Each of the five programs identified in the Results has been analyzed using the framework

indicators for the criterion, and the level to which they can or cannot be measured using those indicators is described.

Aboriginal Skills and Employment Training Strategy (ASETS)

Input indicators for the ASETS program are difficult to ascertain. The program is designed as part of a larger Canadian federal funding initiative that provides access to capital support for all Indigenous people including First Nations, Inuit and Métis (Government of Canada 2017). Accessing ASETS support requires applicants to make contact with their local ASETS service delivery organization where further connections to available programming are made. The amount of human, physical and capital resources made available through ASETS varies, but the program does offer flexibility for funding opportunities so long as the training remains focused on local labour market-driven demands (Government of Canada 2017). To this end, for the input indicator on community and learner input into program delivery, it is evident that the ASETS model is designed to provide community level governance over program appropriateness and delivery. However, the indicators for the output, process and outcome of an ASETS-funded program are immeasurable.

Building Environmental Aboriginal Human Resources (BEAHR)

Input indicators for the BEAHR program are primarily supplied by ECO Canada. All course materials including workbooks, slide decks and examination rubrics are pre-packaged for use depending on the selected programs to be delivered (ECO Canada 2018b). Indigenous communities interested in receiving

certification through BEAHR must first make contact with a Licenced Training organization to receive a list of

accredited program facilitators (BEAHR 2017). Delivery of BEAHR programs are suggested to take place in a community setting. However, sufficient access to technological supports such as the internet and personal computers may require participants to receive training at another designated site. BEAHR's pre-packaged approach and strict guidelines for program delivery limit the input of community and learners in the program design.

Output and process indicators for BEAHR programs under this criterion cannot be assessed since neither community members nor learners can make adjustments to course content. Liberties can be taken for the incorporation of community-based supplements such as guest speakers and use of local sites for hands-on learning, although these decisions are made at the facilitator's discretion (BEAHR 2017). The process indicator for program compliance with BEAHR objectives is achieved through the scheduled administration of written tests and skills competency assessments. The outcome of delivery for BEAHR training is assessed by ECO Canada through post-training surveys of both facilitators and learners (BEAHR 2017).

Outland Youth Employment Program (OYEP)

Indicators for the input of OYEP take place at both the industrial and institutional level. Delivery of OYEP core competencies is facilitated through a partnership between Dexterra and Confederation College. The designation of program facilitators appears to take place at the institutional level. However, OYEP is a community-focused initiative, allowing for significant local engagement not typically seen in conventional college program offerings (Outland 2018, Confederation College n.d.). Indicators for the Process of OYEP program delivery trend favourably in the quality of resources

available, as well as the ability for the program to meet its objectives. OYEP has an established reputation at the national level and continues to expand its delivery base, which signals the outcome indicator for the level of satisfaction scores highly.

Kiikenomaga Kikenjigewen Employment and Training Services (KKETS)

From its inception, KKETS has been designed to be facilitated by community groups, in support of community groups. Input and output indicators for the program are supported through government and industry funding, but their use is primarily organized and distributed at the community level (KKETS 2017, Grewal 2018, MFNM 2019). Output indicators are also satisfied to a great degree due to KKETS interconnected support from the First Nation communities in the MFNM network. Process indicators for KKETS are largely dependent on the market-driven demand for jobs in the mining sector since the majority of the skills-based training offered is in support of that industry (KKETS 2017, MFNM 2019). Compliance with training objectives is therefore also reliant on meeting regulatory standards designated by industry guidelines and government legislation. Despite some of these overarching controls, the level of community engagement incorporated in KKETS design and delivery suggest outcome levels of great satisfaction for both learner and community members.

Indigenous Leadership Initiative (ILI)

Having been in existence for only five years, literature and information on the delivery of ILI and the Indigenous Guardians programs are limited to web-based content. Input support is provided by federal funding; however, physical and human resources cannot be ascertained at this thesis' level of scoping. Indicators of program

output and process are difficult to assess due to the same constraints. Nonetheless, a toolkit compiled by TNC Canada (2016) for the Guardians program highlights many of the objectives for the program hinge on developing an online network for sharing local community resources, experiences and knowledge (TNC 2016). The level of satisfaction with the outcome of ILI and Indigenous Guardians programs is indicated as favourable given the number of online comments and quoted feedback from participants (ILI 2018).

CRITERION 2 – TRADITIONAL KNOWLEDGE CONTENT

Based on the review of the literature and the programs examined in the Results, the need for Indigenous capacity building schemes to include TEK and or TES in their delivery was noted. The second criterion for use in the thesis framework of assessment is aimed at measuring how Indigenous knowledge is incorporated into skills training programs and to what degree communities and or learners can contribute to its inclusion.

Aboriginal Skills and Employment Training Strategy (ASETS)

As a federally funded initiative, the ASETS program does not promote itself as a vehicle for building Indigenous capacity that includes an emphasis on promoting TEK or TES. That does not, however, suggest that programs which received funding support through this model do not provide those opportunities. Without an in-depth look at programs developed with ASETS' funding support, an assessment of TEK/TES content for ASETS cannot be made.

Building Environmental Aboriginal Human Resources (BEAHR)

ECO Canada's BEAHR is promoted for its use in building environmental project skills-training (ECO 2018b). The focus of the programs offered do allow for the inclusion of TEK but materials are not included in the course packages. The injection of either TEK or TES would need to be sourced from the local community or provided by a facilitator that possessed Indigenous knowledge to impart on learners. BEAHR offers no direct input support for the incorporation of TEK in course content. Thus, the output indicators for TEK/TES in the BEAHR program are completely dependent on community support to complement those aspects of the Indigenous learners' experiences. Without the ability to establish a designated source of traditional knowledge, the process and outcome indicators for this criterion cannot be met through BEAHR. The assessment of both the process and outcome indicators would also then depend on the nature and availability of traditional knowledge content that the community is able to provide learners.

Outland Youth Employment Program (OYEP)

As a model for providing skills training mainly for Indigenous youth, OYEP places some emphasis on experiential learning but does not explicitly state whether that includes TEK or TES learning (Confederation College n.d., Dexterra 2018, Outland 2018). Input and Output indicators for this criterion would, therefore, need to be measured depending on what component of skills-training was being provided. Employment skills certification in health and safety,

for example, would likely have less opportunity for the inclusion of traditional knowledge than hands-on training in forest

management (Confederation College n.d., Outland 2018, Robitaille 2018). The process indicator for this criterion is also difficult to measure without knowing the venue for training or the nature of the skills to be developed. The nature of the relationships established between industry, institutions and communities under OYEP do, however, suggest that the outcome indicator for satisfaction levels in program content ranks favourably, supported by intergeneration sharing of important cultural knowledge as observed by Robitaille (2018).

Kiikenomaga Kikenjigewen Employment and Training Services (KKETS)

As a skills-based program, input indicators for TEK and TES in KKETS do not appear to be forefront in the description for training offered. However, the nature of the MFNM organizational structure does provide “wrap around” support where experience and knowledge are shared amongst the community network partners through on-site Elders. This suggests that a level of cultural support output for Indigenous content is present in the KKETS program delivery (KKETS 2017). The process indicator for this criterion would need to be satisfied through a more in-depth assessment of the hierarchy status of KKETS within the MFNM network, or a review of the training provided through Noront to ascertain where the decision-making power for Indigenous content resides. Chiefs’ resolutions provide evidence for the role TEK plays in the KKETS program design and can be used as an outcome indicator for the satisfaction level of program content evaluated using the thesis framework of assessment.

Indigenous Leadership Initiative (ILI)

The cornerstone to the ILI and Indigenous Guardians programs is the inclusion of TEK (TNC Canada 2016, ILI 2018). The input and output indicators for this criterion are therefore satisfied to a great extent. It can, therefore, be assumed that the process indicator can also be assessed to the same degree given the focus on promotion and maintenance of traditional learning (TNC Canada 2016). Consequently, the level of community and learner satisfaction in the outcome indicator for this criterion through the ILI and Indigenous Guardian programming is thought to rank positively but cannot be confirmed due to a lack of data on community input re TEK.

CRITERION 3 – DEVELOPMENT OF LONG-TERM CAPACITY

At the crux of the thesis Results is the implication that building Indigenous capacity should be looked at as a long-term endeavour. Skills training competencies that are not transferable or able to be made applicable for use in other labour markets can hardly be viewed as being able to promote meaningful and long-term capacity for Indigenous communities. Learner and community-based assessments of the training received included alongside facilitator evaluations can ensure that any shortfalls in addressing Indigenous social values are identified, and that feedback can be used to enhance future program delivery.

Aboriginal Skills and Employment Training Strategy (ASETS)

The provision of funding for building Indigenous capacity provided by the Canadian federal government under ASETS has existed for nearly a decade

(Government of Canada 2017, 2018a). Through the newest reiteration of the program under ISET, it stands to reason that the input indicator will also continue to be supported, even if the competencies are not explicitly stated until programming at the community level is implemented. Assessing the output indicators for ASETS can be done through the use of the statistical results provided online; however, a more thorough evaluation of program success would need to be done at the community level so that a true measure of the local capacity built can be ascertained. As with the other criteria, process and outcome indicators for ASETS cannot be measured by the thesis framework since the overarching design of the program provides funding support, which in turn is put to use at the community level.

Building Environmental Aboriginal Human Resources (BEAHR)

The BEAHR program offerings have clear directives as to the training and skills competencies that are included in their course packages (BEAHR 2017, ECO Canada 2018b). The input and output indicators can be measured in a timely manner given the continued testing and assessment that takes place throughout program delivery (BEAHR 2017). Process indicators are measured for BEAHR through the administration of pre and post-training surveys for both instructors and learners, but absent is any assessment done at the community level. It is unclear how these feedback assessments are used for enhancing program delivery given that the curriculum for the Environmental Monitoring program, for example, has seen no change in content since 2016 (BEAHR 2017, ECO Canada 2018a). Evaluating the outcome indicator for levels of satisfaction of BEAHR programming cannot accurately be determined without examining statistical or anecdotal evidence, neither of which have been available for use in the thesis framework of

assessment. The training and skills developed under BEAHR can assumedly be transferred within other community-level projects, but the outcome indicator for long-term capacity is difficult to reconcile given that none of the BEAHR certifications are accredited (BEAHR 2017).

Outland Youth Employment Program (OYEP)

The training and skills competencies offered through OYEP include a number of standardized certifications that can be put to use in any number of labour sectors and indicate a variety of input content (Confederation College n.d., Dexterra 2018). The Output indicator for the types of skills attained and the number of participants that successfully complete OYEP are regularly documented through the Outland website and media accolades (Outland 2018, Confederation College 2018). Process and outcome indicators for OYEP in regards to facilitator assessment are made clear through those same statistics, but it is not evident through the available material if students and community members are afforded an opportunity for self-assessment. The outcome indicator for skills transferability ranked very high under OYEP by the variety of skills provided in the program and its focus on a younger demographic that will presumably spend a greater length of time in the labour market.

Kiikenomaga Kikenjigewen Employment and Training Services (KKETS)

KKETS has maintained a clear focus on building capacity in support of the mining sector (KKETS 2017, Grewal 2018, MFNM 2019). The input indicator for the competencies included in the program can, therefore, be

measured both by the variety of training options offer through KKETS but only when bearing in mind that the selections

are all directed at a specialized labour market. The assessment of process and outcome indicators are difficult to measure without statistical evidence for the current trends in the mining sector and the number of successful KKETS graduates. Further assessment of outcome indicators would suggest that the focus on training for use in the mining sector could be a suggest limiting factor for building longer-term Indigenous capacity for the communities in the MFNM network.

Indigenous Leadership Initiative (ILI)

Assessing the skills and training competencies offered in the ILI and Indigenous Guardian programs is difficult given the available material. The ILI website and the Indigenous Guardians toolkit provide general information as to the types of programs that take place, but there is no listing of specific competencies to evaluate as indicators of input or output. The relative newness of the ILI also makes the assessment of process and outcome indicators difficult under the thesis framework of assessment. However, given the number of programs currently active under the ILI and the provisions of support for building a national Guardians network (Government of Canada 2018b), it seems reasonable that long-term capacity can be built through the ILI and Indigenous Guardians program models.

FRAMEWORK OF ASSESSMENT

The framework of assessment designed for use in this thesis was thought to have provided enough latitude to allow for a ranking of the Results programs. Unfortunately, the diversity of the program structures, delivery and content made finding a homogenous

scoring system too complicated for the scoping allowed in undergraduate research. As indicated in the Results, limitations in literature and program data proved a hindrance to evaluating the suitability of the review capacity schemes insofar as allocating a score value.

Each program in their own right possesses qualities that are conducive to building capacity and providing access to skills-based training, including in some case exposure to TEK and opportunities to transfer skills outside the natural resource sector. Further study of one particular program independent from the others would likely be the best approach to adequately apply the framework of assessment developed in this thesis.

The ASETS and BEAHR programs have the most notoriety as far as program longevity, and OYEP appears to receive the most exposure in other areas of public discourse including social media and new media forums. KKETS would rank the best in overall skills development based on the concise and focused direction of the program delivery and content, where conversely, the ILI provides no core curriculum but has the most holistic approach to Indigenous learning. An overall best ranking would most appropriately be applied to OYEP given the breadth of programming offered, the number of transferable certifications and the amount of community input.

This thesis endeavoured to compile enough literature of the participation of Indigenous peoples in the natural resource sector, along with a survey of available skills training schemes, in order to analyze the implications for enhancing programs designed to build Indigenous capacity in resource development projects.

Aboriginal communities have previously experienced capacity shortfalls in natural resource development stemming from inaccessibility to institutional facilities, training resources and capital funding (Zurba et al. 2016, Grewal 2018). The design and

implementation of skills training programs for use in fulfilling employment objectives are purportedly achieved so long as barriers to access and resources are overcome. Incidentally, programs developed through industry or government personnel who lack direct experience interacting with Aboriginal communities are likely to be deficient in appropriate cultural content (Stevenson and Perreault 2008). An institutional focus on the instruction and delivery of training programs that are project-focused can experience similar shortfalls by limiting the number of transferable competencies for use outside of the natural resource sector (Hickey and Nelson 2005, Stevenson and Perreault 2008). Furthermore, the development of skills that are not linked to existing or projected opportunities for employment offer little in the way of a contribution towards long-term community capacity building (Stevenson and Perreault 2008). The considerations for training programs aimed at building Indigenous capacity in the context of this thesis extend beyond filling gaps in the labour market. As established in the literature, the need for training programs to build capacity that can be made applicable for enhancing the participation and subsequent governance by Aboriginal communities over projects taking place on traditional lands is viewed by Indigenous peoples as being more meaningful (McKay and Johnson, Udofia et al. 2017). Moreover, conventional assessments of performance and achievement do not address the underlying socio-economic constraints present in Aboriginal communities in regards to building capacity, nor have they sought to incorporate Indigenous social values (Lertzman 2002, Madden 2015, Rawlusk 2018). The framework of assessment developed for use in this thesis is therefore an attempt at providing an evaluation model that is

more focused on the use of qualitative indicators as opposed to the quantitative measures seen in conventional program ratings (Praslova 2010).

CONCLUSION

Indigenous peoples have been stewarding their traditional lands and waters since long before the time of Contact. The use and development of natural resources has continued to change across the Canadian landscape over the years, along with the structure of governance over those resources. The participation of Indigenous peoples in natural resource development has been maintained through a level of influence exerted by, or in relation to, governmental and industry regulatory requirements. The affirmation of Aboriginal rights for traditional land use and provisions for consultation and, sometimes, consent in project development are no longer points for debate in the natural resource sector.

Mitigating the impacts of development on the ecosystems within traditional territories is held in high priority for Indigenous peoples and has spurred an interest in communities looking to better represent their interests in natural resource development projects. The need for technical and other skills-based training has long been acknowledged as a vehicle for building local labour capacity for participation in these undertakings, though much of the resulting employment remains tied to the market-driven demands for goods and services derived from natural resources. The environmental assessment processes required prior to the commencement of extractive projects has provided an opportunity for Aboriginal communities to leverage their inherent and established treaty rights in order to secure a stronger foothold in the governance over natural resource development.

Paramount to this assumption of greater management control is the desire for Indigenous communities to maintain and transmit traditional ecological knowledge

through the resource development process. The inclusion of Indigenous knowledge systems in a primarily Western-based way of thinking has proved to be difficult to bring into the mainstream, but the benefits of a more cohesive approach to managing natural resource development is generally acknowledged. Developing pedagogical methods to instill the philosophy of seeing “two ways” is a trend that will continue to progress in the spirit of reconciliation in Canada. As such, the development of skills training programs that meet the educational needs of Indigenous peoples to not only sustain the ecology of the land, but also to address the social and economic requirements for building adequate capacity will also continue to evolve and reiterate.

The Indigenous peoples of Canada are an untapped human resource that can no longer be discounted. The wealth of traditional knowledge that can be made applicable for use in the natural resource sector has yet to be fully assessed, though the potential for a significant contribution to be made on the part of Indigenous peoples from a workforce standpoint, remains unrefuted.

The application of a framework for assessing skills training schemes whose aim is to build capacity for Indigenous peoples is needed to adequately address the shortfalls that persist in Indigenous participation in natural resource development. Primarily, the inclusion of learner-focused and community-based assessments are required to ensure Indigenous values are sufficiently accounted for in programs delivered under the guise of being culturally appropriate and relevant to community needs. Skills training that is able to provide support for the continued social and economic development of Indigenous peoples is the solution to building meaningful and long-term capacity.

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APPENDIX I

FRAMEWORK FOR ASSESSING SKILLS TRAINING PROGRAMS

Criteria	Assessment Indicators			
	Inputs Resources for Program Planning & Development	Outputs Measurable Results	Process Program Quality	Outcome Program Participant Satisfaction
Community and/or Learner Focused Program Delivery	Program delivery resources: - human - physical - financial	Designation of program facilitator(s) Determining level of engagement of the community and/or learner	Quality of program resources and delivery Compliance with program objectives	Level of community and learner satisfaction with program delivery
Inclusion of Traditional Knowledge and/or Two-Eyed Seeing	Inclusion of culturally appropriate content Inclusion of TEK and/or TES based content	Amount of culturally appropriate content Amount of TEK and/or TES based content	Establishment of decision- making authority for culturally appropriate content	Level of community and learner satisfaction with program content
Support for Building Long-term Capacity	Skills and training competencies for delivery	Level of achievement in skills and training competencies Number of participants successfully completing training	Skills and training assessment by facilitator(s) Skills and training assessment by community Skills and training assessment by learner(s)	Level of facilitator, community, and learner satisfaction with program deliverables Transferability of skills and training for building long-term capacity