

# **COMMUNITY HEALTH RISKS AND OPPORTUNITIES ASSOCIATED WITH RESOURCE DEVELOPMENT IN TL'AZT'EN NATION, CANADA**

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## Abstract

This paper describes research conducted with Tl'azt'en Nation, a First Nation community located in northern British Columbia (BC), Canada. Tl'azt'en Nation is faced with varied resource projects (both operating and proposed) on their traditional land. As part of a nationally funded project focused on health and the extractive sector, this qualitative study uses a community-based participatory approach to identify health risks, impacts and opportunities related to resource development from the perspective of key health and social service providers and project-affected people. Adverse health and social impacts/risks include impacts to culture, increased traffic, increased health and social service provider workload and changes in social dynamics in the community. Health and social opportunities arising from developments include increased access to education, training programs and to short-term employment. Recommendations for industry include the implementation of enhanced risk management strategies to minimize social and health risk to communities, development and implementation of a comprehensive wellness plans that merge and strengthen education and training opportunities, and provision of adequate community-based capacity funding so First Nations can meaningfully participate in understanding potential risk and impacts of major development projects. These recommendations are essential for ensuring positive long-term health outcomes for individuals and families living in vulnerable Canadian First Nation communities.

**Keywords:** Resource Development, First Nations, Community Health and Safety, IFC Performance Standards, Aboriginal Health, Health Impact Assessment, Canada

# 1.0 Introduction

International standards including the World Bank Group Environmental Health and Safety Guidelines (2007), Equator Principles III (2013), the International Finance Corporations (IFC) Performance Standards on Environmental and Social Sustainability (2012a), and the European Bank for Reconstruction and Development (EBRD) Performance Requirements (2014) are in place for managing health impacts and risks associated with resource development projects in the extractive sector. Embedded in these standards is a framework for identifying potential community health risks and a process for managing them. These standards also require specific provisions to minimize project impacts on Indigenous People and may require stand alone Indigenous People Plans and Free, Prior and Informed Consent (IFC, 2012b; IFC, 2013c).

While these standards are typically applied in development projects located in emerging markets financed, in part, by international finance institutions (e.g., IFC, EBRD) we argue in this paper that they must be applied when developments impact indigenous communities located, especially, in rural and remote regions of Canada.

Canada, while not an emerging nation, is supported disproportionately by natural resource industries. In 2014, the forestry, mining and oil and gas sector directly or indirectly accounted for approximately 20% of Canada's nominal GDP (Natural Resources Canada, 2014). From a resource perspective, Canada's westernmost province, British Columbia (BC) has one of the most productive and biologically diverse areas of forested land (i.e., the province has an estimated 55 million hectares of forest resources). Major BC forest products include softwood lumber, pulp and paper products, structural panels, and newsprint, with emerging products such as bioenergy and new building systems. In 2012, there were 56,400 forest sector jobs and forest product exports totalled \$10.16 billion in revenue (Annual Service Plan Report, Ministry of Forests, Lands and Natural Resource Operations, 2014/2015 & 2016/2017).

BC is also rich in natural gas with an estimated 52 trillion cubic feet of conventional and 100 trillion cubic feet of unconventional (shale and tight gas) resources. The province is the second largest producer of natural gas in Canada. In 2013, 3.9 billion cubic feet of natural gas and 21,000 barrels of crude oil were produced per day. (Annual Service Plan Report, Ministry of Forests, Lands and Natural Resource Operations, 2014/2015 & 2016/2017). In addition to the forestry and oil and gas industry, mining in BC is also prolific. More than half of Canada's mining exploration companies are based in the province and since 2001, mineral exploration spending has dramatically increased from 29.1 million to 338 million (BC Ministry of Energy and Mines, 2015). In 2013, the production value of BC mines and exploration expenditure was estimated at \$7 billion and \$476 million, respectively. Over 30,000 individuals were employed in mineral exploration, mining and related sectors in 2013 (Annual Report of the Chief Inspector of Mines, 2013). Currently, it is estimated that 600 major resource development projects

(forest, mining and oil and gas), worth an estimated \$650 billion, are planned for Canada over the next 10 years.

There is a strong link between First Nation communities and the location of proposed and current industry projects. Nationwide, it is estimated that 1200 First Nation communities are situated within 200 kilometers of mining activities and approximately 80% are located in or near forested areas, which places them in close proximity to forestry operations (National Aboriginal Health Organization, 2008; Natural Resources Canada, 2015). In addition to mining and forestry project, oil and gas initiatives are also crossing, or being planned to cross, First Nation traditional land. As a result, it is essential to better understand how First Nation communities are impacted (both positively and negatively) by resource development activities.

This current study adds to a growing body of literature on community health risks and impacts associated with resource development projects in BC that has been conducted by this research team since 2006. Previous research has demonstrated that community health is particularly vulnerable to changes in the mining industry. For example, research has observed negative impacts to family, women and mineworker's health during the phase of mine opening and higher incidence rates of acute cardiovascular disease and mental disorders during mine closure. As a result, previous studies have emphasized the need for increased mental health and addictions services and increased collaboration between the mining sector and local health service providers to enhance community health and health service access (Shandro et al., 2014; Shandro et al., 2014b).

In 2010, the research team was asked by health and social service providers from the Nak'azdli First Nation, Tl'azt'en Nation and the municipality of Fort St. James in northern BC, to identify and monitor health risks and impacts associated with the construction phase of a new copper-gold mine, the Mount Milligan Mine. Upon the completion of a baseline and monitoring report (*Meeting the Health Needs of the Stuart Lake-Nak'al Bun Area. A Baseline Study of Community Health, Community Health and Social Services and Reported Impacts from Local Mining Developments* [2012]; *Ten Steps Ahead: Community Health and Safety during the Construction Phase of the Mount Milligan Mine* [2014]), it was identified that a number of resource development projects have been active on Tl'azt'en Nation traditional land. The reports highlighted Tl'azt'en Nation as being particularly vulnerable to health impacts from resource development due to poor community health conditions, isolation and the lack of access to a range of essential health and social services. The objective of this current study is to provide a more thorough assessment of community health risks, impacts and opportunities related to past, current and proposed resource development projects for Tl'azt'en Nation. It is the intention that this study will, at minimum, highlight the need for increased accountability across

the resource sector to better manage risks and impacts associated with their projects on vulnerable and isolated populations.

## **2.0 Convergence: Aboriginal health and resource development in British Columbia, Canada**

### ***2.1 ABORIGINAL HEALTH***

Canada is a complex cultural setting with over 600 First Nations communities. BC, is arguably one of country's most diverse provinces. The province is home to 198 First Nations and 32 First Nation languages (representing 60% of First Nation languages in Canada) with 59 dialects (First Peoples' Heritage, Language and Cultural Council, 2010).

Health, from an Aboriginal perspective, calls for attention to the interconnectedness of mental, spiritual, physical and emotional domains, encourages focus on the child, and requires support from family and community (Loppie Reading & Wien, 2009). Cultural differences exist among Aboriginal communities and therefore, how these groups define health may vary (First Nations Health Authority, 2013).

When compared to the general population of Canada, poor health outcomes (e.g., lower life expectancy, higher rates of mental disorder, diabetes and child mortality) are more likely among the Aboriginal population (Booth and Skelton, 2011; Speldewinde, Cook, Davies & Weinstein, 2009). Determinants (factors that influence health outcomes) that perpetuate health inequities experienced by Aboriginal communities in Canada can include:

- Adverse impacts on local physical environments
- Dispossession of traditional territories
- Loss of land and access to traditional food sources (food insecurity)
- Lack of access to health services
- Unemployment and lack of educational and training opportunities
- Poor community infrastructure, resources and capacities, environmental stewardship and cultural continuity
- Ongoing impacts of a history of colonialism, racism and social exclusion
- Lack of self-determination and self-government (Loppie Reading & Wien, 2009)

Evidence-based research focused on the unique experience of First Nation groups in Canada, consistently reports linkages between social, cultural and land use determinants to health outcomes (Chandler & Lalonde, 1998; Kants, Vertinsky, Zheng & Smith, 2013; Schuster, Eleanor, Wean & Chan, 2011). These determinants have strong linkages with resource development.

### 2.3 THE LINKAGE BETWEEN ABORIGINAL HEALTH AND RESOURCE DEVELOPMENT

The consequences of resource development from a First Nations perspective have been examined in BC. Major concerns include: negative impacts on land, wildlife and culture, reduced security of traditional foods, economic planning increasing economic vulnerability in communities, lack of training/capacity/education, the need for mechanisms to ensure meaningful employment in extractive projects, and increased reliance on government support programs (Booth and Skelton, 2009; Harvard Law School, 2010; Naho, 2008).

The intersection between environmental change, socio-economic conditions and Aboriginal health is complex. It is recognized that the Aboriginal population in Canada is vulnerable to changes in environmental and socioeconomic conditions stemming from resource development projects. Increased vulnerability is primarily due to the long historical background of adverse cultural impacts of colonialism and subsequent assimilation practices endured for over 150 years (Veland, et al., 2012).

One major pathway for negative health outcomes experienced by Aboriginal People is through environmental dispossession. Environmental dispossession is defined as the processes by which Aboriginal People's access to the resources in their traditional environments is reduced (Richmond & Ross, 2009). According to Cunsolo (2013), First Nation's *"identity, conceptions of the self, and mental wellness is directly and intimately linked to the environment, and to the ability to hunt, trap, fish, forage, and travel on the land and continue to practice cultural traditions related to being 'on the land'"* (p. 260). On one hand, positive health outcomes (e.g., improved diet, exercise, increased self-esteem, improved mental health) were reported when individuals engaged in land-based activities (Burgess, Johnson, Bowman & Whitehead, 2004). On the other hand, a wide range of negative health outcomes were found to be associated with changes in the environment. When Aboriginal access to land was restricted, studies reported increases in mental health stressors, family stress, substance use, suicidal ideation, and prevalence of cardiovascular disease (Cunsolo, 2013; Dillard, Smith, Ferucci & Lanier, 2012; Gibson & Klinck, 2005).

Environmental dispossession can also limit access to traditional food sources. For First Nation communities, especially for those living in rural and remote areas, the consumption of traditional food is directly linked to positive health outcomes. Not only is traditional food a fundamental source of nutrients, the collection of traditional food also provides social and cultural benefits for individuals, families and communities (Nagy, 2010). Limited access to the physical environment and decreased personal knowledge/skills related to food harvesting reduces consumption of traditional food, leading to more individuals relying on store-bought food or government-sponsored food programs. When accessing food through these options,

the risk for cardiovascular disease development increases due to unhealthy food being incorporated into diets more often (Mitchell, 2012; Richmond & Ross, 2009).

An additional theme is the impact of resource development on the socioeconomic condition of communities and their residents. Evidence *“tends to support the ‘poverty in the midst of plenty’ thesis. Indeed, previous studies show that many Indigenous communities remain disengaged from nearby resource projects, and therefore remain impoverished despite rapid resource industry growth during the past decade”* (Tonts, Plummer & Lawrie, 2012, p. 299). Although earning potential may improve during resource development projects, unequal distribution of income and resources can prevent socioeconomic (and subsequent health) benefits from being experienced by First Nation communities. The following socioeconomic issues can have a negative impact on the health of First Nation communities: short-term economic planning increasing economic vulnerability in communities, higher costs of living for residents through increased goods and services, and an increased strain on housing availability and health service providers due to an influx of non-resident workers (Houissan, et al., 2013; NAHO, 2009).

### **3.0 Tl’azt’en Nation and the resource development sector**

#### **3.1 BACKGROUND OF THE STUDY AREA**

Tl’azt’en Nation is a Northern BC First Nation situated along the north shore of Stuart Lake. Known as the ‘people by the edge of the bay’, Tl’azt’en Nation identifies as Dakelh, which translates to ‘people who travel by water’. The traditional language is Dakelh, which is part of the Athapaskan language group. Tl’azt’en Nation’s traditional territory covers a large area (over five thousand square kilometres) that runs along Stuart Lake and up the Tache River north to Takla Lake. Tl’azt’en Nation currently has three villages within their traditional territory including Tache, Binche and Dzitl’ainli. Tache is located 60 kilometres (km) and Binche 40km northwest of Fort St. James. Dzitl’ainli is a smaller settlement situated near Trembleur Lake, and is also referred to as ‘Middle River’. There is another small community named K’uzche that is primarily used during the summer season by local residents. To date, there are approximately 1,600 members of Tl’azt’en Nation and of these, an estimated 581 live on-reserve (Aboriginal Affairs and Northern Development Canada, 2014)

Tl’azt’en has been internally organizing and maintaining its own natural resources through the development and implementation of a keyoh system. Keyoh are traditional land holdings of the Dakelh People and are passed from one family head to his or her successor. Under Dakelh law, land titles rightfully belong to the family and are not granted, approved, or derived from any type of authority, including Band Council or government agency. Keyoh holders have the sole title, ownership and responsibility over all the land and resources in their independent keyoh.

An extended clan/family system manages a keyoh through the development of strict rules and, traditionally, unauthorized use was considered a serious infraction (Booth & Skelton, 2008). This system has been in place for generations. Many hundreds of years ago, this land was divided into keyoh.

Within traditional territories access to traditional foods, along with the maintenance of traditional knowledge, language and spiritual practices, continue as priorities for Tl'azt'en Nation. In Tl'azt'en, traditional food is hunted (e.g., moose, bear, elk), fished (e.g., salmon, trout, char and lake cod) and gathered (e.g., soap berries, huckleberries, blackberries, raspberries, mushrooms and plants used for traditional medicine) (NAHO, 2008). These practices are well recognized as vital for maintaining and improving health among First Nation communities.

### *3.2 PAST AND CURRENT RESOURCE DEVELOPMENT PROJECTS IN Tl'AZT'EN NATION TERRITORY*

#### **3.2.1 FORESTRY**

The forest industry is active on Tl'azt'en Nation traditional territory and several different logging companies travel daily to and from the area. In total, there are four active logging mills 30km south of Tl'azt'en Nation and further road development in Tl'azt'en will provide additional distribution opportunities for the logging industry. At the time of this report, a number of contractors were operating in the area. Tl'azt'en Nation also owns a not-for-profit forest management company called Tanizul Timber Limited and the company's activities are administered through an elected Board of Directors and managed by a forest planner and an operations manager. The company has harvesting agreements in place with companies in the area and prioritizes hiring Tl'azt'en band members.

#### **3.2.2 OIL AND GAS**

At the time of writing this paper, the proposed route for one major oil and gas project ran directly through the traditional territory of Tl'azt'en Nation. The Prince Rupert Gas Transmission (PRGT) Project proposed by TransCanada Pipelines Limited is a 900km liquefied natural gas (LNG) pipeline stemming from the District of Hudson Hope to the proposed Pacific NorthWest LNG liquefied natural gas export facility on Lelu Island, near the District of Port Edward. The 5.1 billion dollar project has submitted an application to the British Columbia Environmental Assessment Office (BCEAO) for an environmental assessment certificate. The application is currently under review. It is estimated that 80km of the pipeline will impact Tl'azt'en Nation keyoh holder land. The project proposes to cross Middle River using Horizontal Directional Drilling (HDD) technology, which places the pipeline 20 to 50 feet below the river's bottom (PRGT Project, 2014). Additionally, the project also intends to build a compressor station near Dzitl'ainli, with the potential for constructing an additional station in the future.



### 3.2.3 MINING

TI'azten Nation has been negatively by past mining activities on their traditional territories. Located in the headwaters of the Fraser River system and 25 km northwest of Fort St. James, the Pinchi Lake Mine is an historical mine that resulted in adverse environmental and health impacts experienced by TI'azt'en Nation as a result of mercury (Hg) contamination. Owned by Cominco Ltd. (the predecessor of Teck Resources Ltd.), the Pinchi Lake Mine site initially operated from 1940 to 1944. During this time, cinnabar ore was processed from both underground and surface glory hole mining methods. In order to recover the mercury, the ore was coarse crushed and roasted. During the roasting stage, mercury-containing wastes (also known as 'calcines') were generated and subsequently deposited directly into Pinchi Lake.

After 24 twenty-four years of inactivity, Teck Resources Ltd. reopened the mercury mine from 1968 to 1975, and continued to extract ore using modernized mining practices. Production rates during the operation stage fluctuated but, in total, over six million kilograms of mercury were extracted. For approximately 15 years, the Pinchi Lake Mine remained inactive and it wasn't until the 1990's that Teck Cominco Ltd. began developing a closure plan for the site. In 2004, during mine reclamation, the tailings dam broke and 6000 to 8000 cubic meters of sediment and waste water spilled into Pinchi Lake. In 2008, an agreement was negotiated with between Teck, TI'azt'en Nation and the Nak'azdli First Nation. The agreement included a Pinchi Lake Legacy Fund that will be used for future community development initiatives in the area (Teck Resource Ltd., 2015).

At present, mining projects remains active on and near TI'azt'en Nation traditional land . One example includes the Decar Nickel Exploration project, which is exploring for a specific type of nickel mineralization called 'awaruite' (i.e., a naturally occurring, metallic nickel-iron alloy). The project site is approximately 245 square kilometres in size and proposes the following infrastructure: plant site, haul roads, bridge, processing plant, mine maintenance garage, warehouse and fuel storage facility, administration buildings, accommodation facilities, assay lab, fresh water supply, sewage treatment, open pit, valley-full tailings dam and a power supply that is supported by a 110-km transmission line (First Point Metals, 2011).

Additionally, the Mount Milligan Mine, located northeast of Tache, is a new copper/gold open-pit mine with a projected life span of 22 years. The mine is owned and operated by Thompson Creek Metals, construction of the mine commenced in June 2010 and the first ore was processed in August 2013. The mine achieved full commercial production in February of 2014. Although the mine does not operate on TI'azt'en Nation traditional land, it is important to note a social assessment for the Mount Milligan Mine application submitted to the BCEAO did not identify TI'azt'en Nation as an affected community, despite their direct reliance on municipality of Fort St. James for major health and social services. According to one report, the construction

phase of Mount Milligan Mine resulted in a number of measurable impacts for Tl'azten Nation (Shandro et al., 2014).

### 3.2.4 Bioenergy

In addition to forestry, oil and gas and mining activities, a new bioenergy projects was being constructed during the writing of this paper. The Fort Green Energy Project, which is a 40MW biomass energy production project with a 30-year energy purchasing agreement with BC Hydro, is being built 20 km south of Tache. During the construction phase, 250 temporary workers will be hired. The project intends to be fully operational in 2016 and will require 200,000 tonnes per year of fiber (Fort St. James District, 2015).

## 4.0 Methods

### 4.1 STUDY OBJECTIVES

This objective of this study is to better understand the health risks, impacts and opportunities related to resource development from the perspective of key health and social service providers and project-affected people from Tl'azt'en Nation.

### 4.2 RESEARCH MODEL

The research model is rooted in qualitative community-based participatory research guided by an integrated knowledge translation study design. The Canadian Institutes of Health Research (CIHR) Model of Aboriginal Knowledge Translation (KT) is defined as *"a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system"* (CIHR, 2014, n.p). This model is driven by recognition that Aboriginal peoples in Canada have a long and rich history of sharing knowledge. It also identifies that Aboriginal community participation contributes to the effectiveness of the KT process, through facilitation of community support, increasing community knowledge, building capacity, and encouraging sustainability (Estey, Smylie & Macaulay, 2009). This project has been developed through consultation with the Tri-council Guidelines for Aboriginal Peoples (Government of Canada, 2015), OCAP (ownership, control, access, and possession of research data) principles as identified by First Nations in Canada (Schnarch, 2004) and the need for respect, relevance, reciprocity, and responsibility (Kirkness & Barnhardt, 1991; Elias & O'neil, 2006).

The above is in line with the practice of Community-Based Participatory Research (CPBR) that aims to equalize power differences within the research process, build trust between researchers and communities and foster a sense of ownership on the part of communities.

CBPR can enhance the understanding of the causes and mechanisms of issues to reduce adverse health outcomes via intervention strategies and address concerns as described by the community (CIHR, 2013).

Since 2010, Tl'azt'en Nation and the research team have been involved in the bi-directional sharing of knowledge regarding resource extraction within their traditional territory. The research team includes a community-based research coordinator who assisted in developing and implementing this study.

#### *4.3 DATA COLLECTION AND ANALYSIS*

A grounded theory approach was used for interviews with both health and social service providers and project-affected peoples. Developed by Glaser and Strauss (1967), grounded theory is a specific methodology that is used to construct theory from data (Corbin & Strauss, 2008). Data gathered from interviews were used to generate rich descriptions of community health risks, impacts and opportunities related to resource development. Following methodological standards for qualitative inquiry, participants were selected using a purposive sampling method. Community health and social service providers were asked to participate in the study, along with project-affected peoples. Project-affected peoples were defined by this project as either being directly employed by the resource development industry or who, as the direct result of industry activity, have lost or are at risk of losing access to their keyoh.

Between October 14 and October 18, 2014, fourteen interviews were conducted with key health and social service providers and project-affected peoples who were eighteen years of age or older. Interviewees were asked to provide their perspective on community health priorities for Tl'azt'en Nation and on health risks and opportunities associated with resource development projects. Utilizing grounded theory techniques, this study involved simultaneous and sequential collection and analysis of data using inductive, constant comparison methods (Corbin and Strauss, 2008). Interviews lasted approximately one hour and were audio-recorded and transcribed verbatim. Interview transcripts were reviewed and data analyzed using open coding and the constant comparison method to identify emergent themes that described community health risks, impacts and opportunities in Tl'azten Nation (Corbin and Strauss, 2008). An initial draft of this report was written and submitted to Tl'az'ten Nation Chief and Band Council, as well as other department heads for review. During the review process, community members were encouraged to provide feedback and comment on the accuracy of information contained within this report. Once a draft was finalized, the research team workshopped the findings from this report with community members during a free, public event held in Tache, BC.

## **5.0 Results**

## 5.1 HEALTH RISKS, IMPACTS AND OPPORTUNITIES RELATED TO RESOURCE DEVELOPMENT

### 5.1.1 CULTURAL IMPACTS

Cultural impacts as a result of resource development include decreased access to traditional land, stresses on the supply and purity of traditional foods and medicinal plants. These factors all contribute to loss of culture, a major determinant of Aboriginal Health.

#### 5.1.1 ACCESS TO TRADITIONAL LANDS

Access to traditional land was identified as a major risk associated with all types of resource development projects proposed and operating on Tl'azt'en Nation territory. Tl'azt'en Nation experiences cumulative environmental impacts associated with the forestry, oil and gas and mining industry. During interviews, individuals reported that aside from the Pinchi Lake mine disaster, forestry has had the largest impact on the surrounding environment. The impacts are due to large areas of land being clear-cut. Concern was voiced in relation to the effect this practice has on local fish and wildlife. It was reported that clear-cutting has resulted in a loss of habitat for wildlife and vegetation (e.g., berry patches) that wildlife feed on and wildlife are not as prominent as they once were in the region.

*"Well I got grizzly bear habitats and moose habitats, and deer, we've got everything down there. There's a lot of game but it's all depleting too you know. The animals aren't as abundant as they used to be because all this ecosystem is all being disturbed." [I2, L148-150]*

Oil and gas development projects, such as the PRGT project, also may decrease access to traditional land. This project proposes a pipeline right-of-way that will result in long-term environmental dispossession for keyoh holders in Dzitl'ainli (Middle River).

*"The width of it, I think it's depending on the geography of the land, anywhere from 50 to 100 on either side of the right-of-way, metres, so that's going to clear all the timber out of there and it's never going to be allowed to regrow, so that's the long-term footprint that really concerns me the most." [I1a, L102-105]*

Although there is no active mine on Tl'azt'en territory, impacts associated with both of the aforementioned projects were reported. For keyoh holders from Binche, the Pinchi Lake Mine has resulted in the complete loss of access to traditional food sources due to mercury contamination. Test drilling for the proposed Decar Mine project near Trembleur Lake has been observed to negatively impact local creeks that feed into salmon spawning grounds. Further concerns regarding the construction of mine access roads were also raised.

*“Resource development if it’s done safe, in a safe manner, not the way they’re doing it now. I mean I see mining companies build roads, just push trees into the bush, no respect for the land or anything.” [I2, L90-91]*

In Tl’azt’en, community members rely heavily on land access for their socio-cultural, economic and physical and mental well-being. As a result, the majority of interviewees were concerned about the impacts of resource development on traditional land.

*“I don’t like people messing around with my way of life, you know what I mean? It’s the only one we’ve got. If you mess that water up you’re going to have nothing. I don’t care how much money you’ve got, you’re still not going to live. You can’t eat money.” [I2, L481-483]*

The impact of environmental dispossession on their ability to engage in traditional land-based activities, such as storytelling and accessing ancestral trails, was also described.

*“Like my grandmother will tell a story and there’s a bush where to go and they describe it in their language and we go there and it’s the same way. It’s just like a video, watching a video.” [I14, L978-980]*

When a resource development project alters a keyoh, the ability for an individual to engage in land-based cultural activities can also be affected. Changes to the physical environment can make it difficult for individuals to navigate through a once familiar landscape.

*“I’ll tell you something right now like just back here where they logged out here, like I got trails there, and as soon as I get to that cut block – boom. I’m disoriented. I don’t know where to go.” [I14, L946-948]*

Additionally, in relation to the forestry sector, interviewees also noted that resource development moves quickly, leaving little time for keyoh holders to assess and approve areas to be logged. There are sensitive areas in each keyoh, such as, ancestral trails, berry patches, camping spots, and certain spots that were used for breaks. Land marks are important in stories passed down, such as a tree or a rock. When these areas are cleared, the stories become faint and pieces that are important no longer exist. In response to this, interviewees noted the review and marking of sensitive areas in a block by Tl’azt’en members should be mandatory prior to a project moving forward.

#### 5.1.2 SUPPLY AND PURITY OF TRADITIONAL FOODS AND HERBAL MEDICINES

Interviewees reported a large proportion of the population relies on traditional food sources, especially for remote communities, such as Dzit’ainli. Traditional food sources include moose, elk, bear, salmon, trout, char, lake cod, juniper berries, soap berries, huckleberries, blackberries

and mushrooms. In terms of animal population and health, individuals reported a decrease in the number of moose in the area and have noticed the bears are smaller in size.

*“Well you know the biggest impact to me is probably the food chain out there. So like the moose and the bear. I think those two are probably the biggest ones that pay the price for all the forestry; the harvesting out the forest. I think there’s probably other animals out there that pay the price too but I see, just because they’re bigger animals, you see it right, but you don’t know what other impacts but I see that as a huge impact.” [14a, L184-193].*

*“What if it [referring to oil and gas sector] spilled or something and then wrecks all our good stuff? Like even my daughter, she’s 11, she loves her Indian food that kid.” [13, L375-377]*

Historically, some interviewees also questioned the long-term impacts of environmental contamination associated with past industry projects in relation to waste disposal. Interviewees questioned the purity of their traditional food sources and whether they were safe to consume. For example, one interviewee suspected that in the past, forestry companies used to dispense vehicle fluid (e.g., engine oil) directly into Middle River. As a result, residents of Dzitl’ainli were wary to fish in the river and some have reportedly refused to fish altogether.

## **5.2 INCREASED INDUSTRIAL TRAFFIC**

Increased industrial traffic is recognized as a major risk for communities located near resource development projects. Interviewees reported heavy industrial traffic between Tl’azt’en Nation and Fort St. James (along the North Road and Tache Road), on the Leo Creek Road (which provides primary access to Dzitl’anli) and Tanizul Road with no collaborative safety management strategies in place.

*“There is always a problem with logging truck drivers on our roads. Dust control seems to hardly happen on the roads that are used to get to the remote communities of Dzitl’ainli and Takla. Our main road into town is always dangerous, especially in the winter when whiteout conditions occur.” [15, L57-63]*

How industrial traffic impacts community safety was the primary concern among interviewees. These concerns are understandable, given the community has already experienced a tragic accident that resulted in the death of a young child. In 2011, a pick-up truck driven by a mine contractor travelling south along Highway 27 fatally struck an eleven-year-old boy from Tl’azt’en Nation. This incident prompted community-led initiatives, such as the ‘Be Seen, Be Safe’ reflective armband campaign that raised awareness about pedestrian safety.

Additional concerns include the number of animals being hit and left on the side of the road by industrial vehicles. Interviewees reported feeling particularly disturbed by seeing dead moose along the roadside, since many people struggle to hunt adequate amounts of moose meat during the year.

### *5.3 HEALTH AND SOCIAL SERVICE PROVIDER WORK OVERLOAD*

When interviewed, service providers noted a progressive increase in the total workload volume directly related to individual requests from industry for consultation resulting from the regulatory requirements of resource development permitting processes. The sheer volume of work has placed a substantial burden on community resources. For example, under the *Forest and Range Practices Act*, industry is required to consult with First Nations when proposing development (e.g., logging, road construction) within a First Nations' traditional territory. The Crown has a duty to consult with, and accommodate if necessary, those First Nations for whom it has knowledge of the potential existence of aboriginal interests that may be impacted by a proposed decision, such as issuing a forest tenure permit. As the decision-maker, the district manager must consider information arising from the consultation process with First Nations, respecting aboriginal interests and treaty rights that may be affected by proposed forest development

As a result, the forest industry and Provincial government routinely request Tl'azt'en Nation to voice concerns about current and proposed projects, protect their rights and interests and ensure the preservation of culturally sensitive areas within their traditional territory. As with all processes there are deadlines and if a First Nation does not respond within a specified timeframe, it is noted that consultation was requested, no response was received by the time specified, and the permitting process continues – industry and the Crown are deemed to have met the consultation requirement.

Interviewees described how difficult it was to respond to the large number of requests, given the level of capacity that currently exists.

*"There's nobody in referrals right now, there's a job posting right now for that position, but there's nobody...so the information gets sent to us and that is their [industry], what did they call it, the consulting with First Nation piece, that's how they back themselves up." [I1, L55-57]*

Furthermore, some project proponents provided evidence of First Nation consultation efforts (e.g., a formal request had been submitted to Tl'azt'en Nation but no response had been received), which led to the Ministry of Forests, Lands and Natural Resource Operations permitting the project despite the non-response from Tl'azt'en Nation.

A central component of meaningful consultation includes the capacity for Aboriginal communities to take an informed position.

*“My personal opinion of my job and my responsibilities to the Nation is about the health and safety of the environment, so that’s water, that’s wildlife, that’s fish and berries.” [I1, L55-57]*

Health and social service providers recognized the importance of understanding the wide range of potential impacts and opportunities related to proposed projects and described how this process involved drawing from a wide range of limited community resources. In addition to their full-time position, service providers noted that it was common to provide additional capacity where needed in order to address requests for consultation from the resource development sector.

*“I keep myself busy, like there’s not a moment in my day when there’s actually nothing to do, there’s so much to do...I think about those kids that are here wandering around and trying to help them, and then mentoring people, and working with industry, and then ... there’s too much to do to be sitting here doing nothing.” [I4a-L158-161]*

*“We’ve simply been put behind on our own jobs and not focusing on our community for the past half a year probably because we’re trying to get ready for this (TransCanada LNG project) and they’re actually not supporting any of it.” [I4b, L117-119]*

New capacity that builds on the foundations of existing capacity to address the increased workload placed on Tl’azt’en Nation by project proponents is supported and funded by the community. At the end of 2014, a new position was created to help assist with the large number of requests received from industry. Interviewees noted that these resources could easily be allocated towards supporting community programs and events.

*“There’s things that we can’t fund, which it’s hard to get money for, and that’s like the dump, the school, buildings, housing, roads, everything for our community.” [I6b, L253-255]*

*“And we don’t get any kind of funding at all ... the money comes from somewhere else. The money could be easily spent on community events, like it could be spent on the community. Instead we have to pay for this [Natural Resource Director] position, and now this assistant position for referrals, that’s taken away from our community to deal with industry.” [I6a, L257-252]*

Overall, health and social providers of Tl’azt’en Nation reported experiencing work overload. The main source of work-related stress was attributed to job demands and the total number of hours worked. At the time of writing this report, the Natural Resources department in Tl’azt’en



Nation had filled four positions, although some were temporary. The Director of Natural Resources was responsible for the bulk of the workload created by industry activity in the area. Although additional capacity is needed to address requests (e.g., number of requests for consultation) from the natural resource sector, there are critical shortages that also need to be addressed to manage community health issues for Tl'azt'en Nation. For example, there is a lack of mental health and addiction services for youth in the community and currently only two addiction counsellors and no housing coordinator.

#### *5.4 IMPACTS TO SOCIAL DYNAMICS*

In 1959, the federal government joined Tache, Binche, Middle River and Yekooche into the Stuart-Trembleur Band, which then became Tl'azt'en Nation. In 1994, Yekooche separated from Tl'azt'en Nation. Currently, Binche Keyoh is seeking independence by working towards separation from Tl'azt'en Nation and has submitted a proposal to divide up liabilities and assets (Caledonia Courier, 2013). These assets include economic benefits garnered from the resource development sector. The impact of this separation on community dynamics was described during the interview process, with interviewees reporting increased conflict, distrust and social division amongst Band Council members, families and individuals from all three communities. It was reported that opposing views regarding the management of resource development in the area has perpetuated further division within a community that is experiencing complex and critical health issues.

*"So there really is a lot of opinions [about resource development projects] but there's a lot of people that have social issues too...with alcohol and drugs too at the same time. A lot of people have issues with emotions and abuse of some kind. Some trauma at some point. So there's a different mix of people here. But really, I think everybody has one common goal I would think, and that's pretty much trying to live life the best that they can in a healthy way. But really there's a lot of impacts because of industry and what not, residential schools and stuff like that, that we're still feeling the effects of today."*  
[14b-L645-652]

The formal pathway for industry proponents to gain project approval from Tl'azt'en Nation includes gaining consent from Chief and Council via a signed Band Council Resolution (BCR). Prior to signing a BCR, Chief and Council will often seek input from the community, which may include a formal vote open to all band members. According to interviewees, resource development companies have approached Band Council and consulted independent keyoh holders, the Keyoh Holder Working Group or a combination of each. In some instances, monetary benefits have been provided by industry.

*“When activities happen in the Nation and when it’s the whole Nation that kind of gets to decide whether something happens there’s potential that those that might get a little bit of monetary or more specific benefits because it’s their area that’s going to be impacted the most, their keyoh, then they might be more in favour of it than say somebody who’s not directly impacted because they see that they might get some benefit out of it.” [11b, L465-469]*

Although community engagement is a vital component for gaining social approval for a proposed project, companies who provide benefits to select community members may perpetuate conditions resembling a ‘divide and conquer’ approach. Those who directly benefit from industry may be more inclined to approve proposed projects than those who are not. Consequentially, increased resentment, mistrust and increased social conflict among community members were described during the interview process as a result of unequal distribution of industry-related benefits.

### **5.5 THE VALUE OF EDUCATION AND TRAINING**

When a new project is proposed, industry highlights the benefits of increased employment opportunities and income for surrounding communities. Despite the number of proposed and operating resource development projects on Tl’azt’en traditional land, interviewees reported the employment-related benefits were limited across all industry types. If available, most employment opportunities for band members were described as short-term, low paying, and seasonal (e.g., brushing, weeding, tree planting). Interviewees highlighted a gap that exists between training and meaningful employment for band members.

*“I think the biggest obstacle right now is, we have training, we have training coming out of our ying yang, but to have that training and make it applicable at the ground level...we’ve been training forever and it’s just a vicious cycle, so now we need to get those people that have that training and get them hands on practical experience which the industries are not providing right now.” [11a-L293-298]*

According to a 2013/2014 Year End Report on education and training opportunities, 185 band members from Tl’azt’en Nation enrolled in industry-specific training courses. Among this cohort, 156 (84%) of individuals successfully completed their training program. Although a large proportion of the population received job training, barriers to sustainable employment presently exist. Interviewees identified barriers that included lack of opportunities provided by industry, available positions sometime require relocation, travel distance to and from worksite, zero tolerance drug testing policies, and struggles with addiction-related issues.

## **6.0 Discussion**

The research findings demonstrate how complex health and social issues experienced by First Nation communities stem from, or are exacerbated by, the resource development sector. For Tl'azt'en Nation, these impacts can be considered cumulative given the diverse nature and long history of resource development on their traditional land. The following recommendations offer pathways for managing and mitigating community health risks and impacts related to resource development, while promoting opportunities for positive health outcomes to be experienced.

### *6.1 ADOPT AND IMPLEMENT INTERNATIONAL STANDARDS*

This project has identified that adverse social and health impacts are occurring as a result of forestry, mining, and oil and gas activities for Tl'azt'en Nation. International standards such as those developed by the International Finance Corporation (IFC) recognize that development projects such as the construction of mines and pipelines, and forestry/agricultural projects can hold risks to associated communities if unidentified and unmanaged. To help companies identify, manage and mitigate risks, the IFC developed a set of eight Performance Standards on Environmental and Social Sustainability (IFC, 2012a). The base standard, focuses on the assessment and management of environmental and social risks and impacts (IFC, 2012c), .

This standard outlines the need for a company to:

- Identify and evaluate environmental and social risks and impacts of a project throughout the life of the project.
- Adopt a mitigation hierarchy of avoid, minimize or compensate.
- Promote improved environmental and social performance through the effective use of management systems.
- Ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately.
- Engage with affected communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

The IFC standards acknowledge the impacts of development projects on Indigenous Peoples can be irreversible and devastating. They support the concept of Free, Prior and Informed Consent where Indigenous Peoples and their traditional areas of use are directly impacted (IFC, 2012c). It is recommended that companies operating within Tl'azt'en Nation territory adopt international best practice as a benchmark to minimize risk and maximize opportunity.

## *6.2 HELP MEET BASIC NEEDS*

In Tl'azt'en Nation, basic health needs are not being met. Unfortunately, the majority of First Nations across Canada struggle to be appropriately supported and Federal and Provincial Government health services are often described as inadequate for meeting the needs of this population group. Although in BC, the First Nation Health Authority has recently assumed responsibility for delivering programs and services to First Nation communities, years of poor service and access has resulted in health inequities for First Nations. At present, there are a number of basic needs related to health and the social factors that determine health that need to be addressed for Tl'azt'en Nation. The community is facing a housing crisis (most houses are in need of major repair), does not have a local Royal Canadian Mountain Police (RCMP) office, lacks basic services (including waste management) and experiences intermittent, disconnected and disruptive ad hoc health and social services (e.g., the waiting time for appropriate mental health screening assessments for children in Tl'azt'en can take 7 years). In addition, the community also lacks access to infrastructure needed to effectively communicate and access information technology. High-speed broadband Internet services are not available. It is time to open the debate around the support of infrastructure development for remote First Nation communities. If the resource development sector will not contribute to community development that helps enhance wellness, training and service capacity, who will?

## *6.3 SUPPORT COMPREHENSIVE COMMUNITY WELLNESS PLANS*

Wellness plans are critical for optimizing success of future education, training and employment opportunities. Wellness plans should be implemented in coordination with training and education programs associated with the extractive sector and need to be tailored to individuals. A holistic approach should focus on essential and life skills, such as budgeting, coping, problem-solving, and stress-management. Local or regional wellness contacts should be provided as part of occupational health and safety orientation to help support workers on their time off. It is hoped that the private sector would take an interest in health and wellness plans to help support the success of the more vulnerable people in the region.

A Wellness Plan identifies key health priorities, promotes community-based initiatives, provides support and acknowledges linkages between occupational and community health. It builds on existing partnerships, policies, programs and resources and promotes progressive approaches used to address complex health-related issues. Additionally, a Wellness Plan reflects a shared responsibility and partnership for community wellness between Tl'azt'en Nation, government and industry.

#### 6.4 SUPPORT COMMUNITY-BASED CAPACITY FUNDING

Results from this current study indicate Tlaz'ten Nation needs additional community-based capacity funding to review and respond to resource development requests. Interviewees described a deep desire to understand the impacts/opportunities associated with proposed projects, prepare for investment attractions and align planning initiatives effectively. Currently, Tl'azt'en Nation's capacity to meaningfully collaborate with industry is limited due to the large number of requests they receive. Limited resources that could easily be used to fund community-based initiatives have been allocated to manage the industry-related workload placed on Tl'azt'en Nation.

*"There's things that we can't fund, which it's hard to get money for, and that's like the dump, the school, buildings, housing, roads, everything for our community." [I6b,L253-255]*

In order to meet these needs and others, industry should deliver community-based capacity funding. Funding could be used to:

- Define and negotiate the use of Tl'azt'en traditional land.
- Support current and/or additional natural resource development positions as required by Tl'azt'en Nation to respond to industry requests and complete project-specific work.
- Support training and skills required to participate in industry-specific activities.
- Support capacity needs for negotiations, legal, technical and advisory services.

#### 6.5 PROVIDE PRACTICAL EMPLOYMENT EXPERIENCE

In Tl'azt'en, one barrier to long-term, sustainable employment includes the limited number of opportunities for band members to gain practical work experience with resource development companies operating in the area. As previously highlighted, the development and implementation of wellness plans prior to education, training and employment programs is an essential component for ensuring community members from Tl'azt'en Nation are supported and assisted back into the workforce. Industry needs to actively engage with Tl'azt'en Nation to help them prepare (in advance) and take advantage of subcontractor opportunities. Although Tl'azt'en Nation is isolated, it is also strategically surrounded by multiple resource projects. Industry could consider providing small business seed funding that encourages and supports local business development.

### 7.0 CONCLUSION

This paper reports on potential health risks, impacts and opportunities from the perception of key health and social service providers and project-affected people from a remote First Nation community in northern BC. Tl'azt'en Nation is exposed to cumulative impacts from forestry,

oil/gas, mining, and bioenergy activities. Such impacts have been substantially negative and they overshadow the minimal benefits for the community members (e.g., temporary employment opportunities) that are associated with resource development initiatives. This paper also reports on recommendations to manage and mitigate health risks and to enhance health opportunities that stem from development projects close to Tl'azt'en community. To help meet basic community needs, collaborative efforts between the government, industry and community are desperately needed. Recommendations include the development of a comprehensive community wellness plan for Tl'azt'en Nation, the provision of community-based capacity funding and increased access to sustainable employment opportunities. This study further highlights the need to adopt international standards of best practice when assessing community-level impact related to resource development project in Canada. By doing so, the implementation of important mechanisms that manage and mitigate health risks and impacts may help promote positive health opportunities and improve health outcomes among First Nation communities in Canada.

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