

# *Resource Development and Well-being in Northern Canada*

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## Resource Development and Well-being in Northern Canada

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Brenda Parlee

Many arctic nations including Canada are highly dependent on resource extraction as a means of development; despite the record of adverse socio-economic and environmental effects for northern communities, many mining, petroleum and hydro projects are promoted in the north as a pathway of opportunity. However, studies on the effects of such projects in the Canadian arctic, Alaska, Greenland, Scandinavia and Russia over the last half century tell some similar stories. It is widely asserted that, while there are some positive case studies, the net effect of resource extraction has largely been adverse in the circumpolar north (Abele, Courchene, Seidle, & St-Hilaire, 2009; Duhaime & Caron, 2006), a story which has parallels in Africa, Australia and Oceania, Latin America and Asia (Bebbington et al. 2008).

Both the narrative of opportunity and the counter narrative, rather than speaking to the specificity of particular projects, tend to sweeping generalizations – positive and negative - about development and its impacts. Monolithic discourses around the mining industry for example, are particularly well developed (Ballard and Banks 2003). On the one hand are the assertions and claims by industry leaders and governments about resource development benefits; on the other are the apocalyptic discourses of those who consider resource extraction to be antithetical to real development. Such ideological conflict, rather than creating opportunities for effective and unified action on sustainability, tend to estrange the various actors involved in decision-making and fragment what is already a fragmented system of resource management. The definition, assessment, regulation, management and monitoring of the social, economic, cultural and environmental impacts being siloed along disciplinary, regulatory or policy lines make it difficult to understand and manage communities and ecosystems holistically (McCallister et al. 2003). As in other governance contexts, the fragmented nature of resource management institutions reproduces fragmented thinking about the nature of development and its effects rather than ‘big picture’ insights about sustainability (Bosch et al. 2007). A conceptual framework that links the realities of development and the lived experience of communities is

needed. The intent of this chapter is to offer well-being as this framework - a big picture concept for synthesizing what we know already about the socio-economic, cultural and environmental effects that matter to communities and indicating what we don't know.

### **Definitions of Well-being – A Starting Point**

Well-being has many different meanings within different disciplines and across socio-cultural contexts. Emerging from the disciplines of psychology and sociology, comprehensive studies on patterns of well-being have been carried out in many parts of the world but have been limited in the arctic until recent years (Diener et al. 1999; Larson and Fondahl 2015). As a concept in community planning and development, it is strongly associated with concepts such as quality of life and life satisfaction (Diener and Suh 2000). Similar to health, well-being can be both a state and a process; equally it can refer to a measurable outcome as well as a philosophical ideal. For the purposes of this chapter, it is considered also as the set of tools needed to deal with the stresses and challenges of everyday life (Giri 2000; Diener et al. 1999).

Although there are objective measures, *subjective* well-being is commonly used in many kinds of sociological and psychology studies with recognition that individuals and communities have their own unique values, norms and feelings which drive perceptions of well-being in their own lives and communities. Subjective well-being has been correlated with many aspect of physical health as well as such psychological measures of self-esteem, personal control, happiness, life satisfaction and positive outlook on life. It is also associated with self-efficacy as it pertains to goal setting and achievement. Diener and Suh (1997) determined that well-being is most likely to be experienced by those who are able to make progress towards or achieving personal goals. Such emphasis on Anglo- American and Judeo-Christian notions of the importance of individual productivity and functionality have led to criticisms and exploration of the meanings of well-being by medical and cultural anthropologists (Adelson 1998). Despite this growing body of phenomenological and related qualitative study, scholars have concluded that well-being continues to be studied and measured within western frameworks which over-emphasize the importance of self and autonomy over social and social-ecological relations (Panelli 2009; Ingersoll-Dayton et al. 2004).

Well-being, as measured by conventional social and health indicators varies across the circumpolar arctic; by most conventional measures Nordic populations seem much better off

when compared to those in Canada, Alaska, Greenland and Russia. Using data from the *United Nations Human Development Index*, Russia ranks very poorly (ranked 55<sup>th</sup>) when compared with all other nations who are positioned among the top 20 countries globally (Larson and Fondahl 2015: 304). The outcomes are different however, when using such subjective measures as “perceived life satisfaction”. Data from the SLiCA (Survey of Living Conditions in the Arctic) reveals Canada ahead of other circumpolar nations; Russian communities still fall far behind all other nations (Poppel 2015:66).

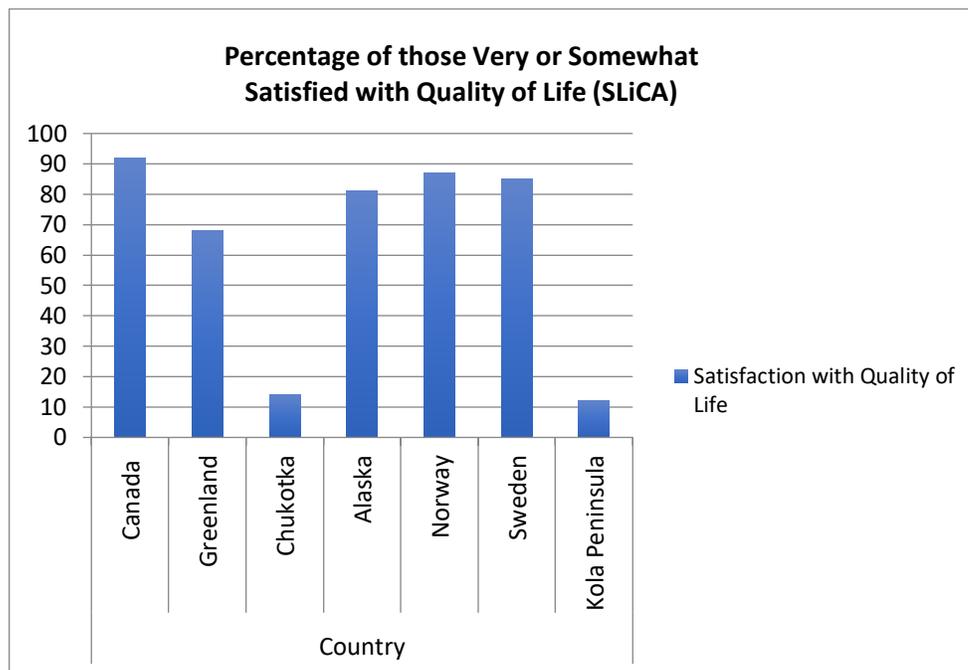


Fig. 1 Percentage of those Very or Somewhat Satisfied with Life” Reported in [www.arcticlivingconditions.org](http://www.arcticlivingconditions.org) and the SLiCA database. (Adapted from Poppel 2015).

Adapted from Poppel, B. (Ed.). (2015). *SLiCA: Arctic living conditions: Living conditions and quality of life among Inuit, Saami and indigenous peoples of Chukotka and the Kola Peninsula*. Nordic Council of Ministers.

There are also important relative differences within circumpolar nations; gaps between the well-being of Indigenous and non-Indigenous peoples are among the highest - particularly in the Canadian arctic. This gap is one seen equally across the country. Based on 2001 data, nearly 50% of First Nations communities occupied the lower half of the index range (between 0.30 and 0.65) while less than 3% of other Canadian communities fell within this range (Indian and Northern Affairs Canada 2004; Indian and Northern Affairs Canada 2010). While the gap is

decreasing in some communities there is still wide discrepancy between conditions in First Nations and Inuit communities and other communities in Canada (INAC - Indian and Northern Affairs Canada 2010).

While some conservative academics and policy analysts explain this gap as a problem of development (i.e., Indigenous societies have not developed to the same degree as non-Indigenous societies), the most well developed and accepted explanations are attributed to the adverse effects of colonization. There is a widely held view that the well-being of Indigenous peoples was better prior to a Euro-Canadian presence in the north. Similar to theories on “virgin soil epidemics”, which suggest problems of disease (e.g. small pox) only occurred after European settlement (Waldram et al. 2006), some anthropologists and oral histories argue strongly that the social illnesses that are common in many communities today (e.g., violence, addiction) did not exist until the last one hundred years or were better managed in the past through traditional systems of justice and governance (Ryan 1995). Colonial social policies aimed at assimilation altered many aspects of the way of life of northern peoples and led to a loss of self-reliance (Hicks 2009). Examples include forced relocation of Inuit communities, criminalization of subsistence (e.g. caribou hunting), residential school programs and the impositions of outside forms of governance. Indigenous peoples in southern Canada, Australia, New Zealand and the United States with similar colonial histories face very similar contemporary issues of poverty, social illness and marginalization and often struggle with the same kinds of questions of social sustainability (Gracey and King 2009). Narratives from communities as well as social science research about these histories are emotional and evocative; the impact of forced relocation, residential school and medical systems that dislocated people from their families and homes reveal an aspect of Canadian history that few understand; historical trauma and cultural dislocation continues to affect the present and the future of the north.

Caution is needed however, in the digestion of such well-being data and comparative analyses. The well-being indices used by Canada and other nations are suspiciously similar to the same-old indices conventionally used over the last thirty years. While important, the use of such indicators as income, employment and education, previously described and associated with “modernization” and “development” but now repackaged as “well-being” should raise eyebrows

about what is being measured and why.

Indigenous scholars have been among those critical of such socio-economic data and the associated data collection processes. Although methods vary, most large scale health and social data collection and reporting efforts are perceived with scepticism given histories of colonial surveillance (Kukutai and Walter 2015; Andersen 2013; O'Neil 1998). Critiques of statistics and how they are collected, interpreted and utilized, have spurred many academics and governments to rethink how and why they collect such data and its value in decision-making, particularly in relation to Indigenous peoples. However, even with improved intentions and reflectivity in the data collection process, there are limitations to the kind of "data" that can be feasibly collected at national and multi-national scales. Conventional kinds of data and data collection may not be done with the aim of promoting development or masking other more complex quality of life issues, but because no other data exists.

Alternative meanings and indicators for well-being that allow for broader and deeper discussions about such complex issues of quality of life in northern communities are thus needed to reframe and redirect thinking and policy on northern development. In north western Canada, there are a variety of pan-Indigenous ideas and symbols of wellness, such as dreamcatchers and medicine wheels that have become popularized in the media, airport gift stores as well as academia. The medicine wheel, which came to symbolize the National Aboriginal Health Organization, suggests health and well-being stem from balancing ones emotional, mental, spiritual, and physical dimensions of the person as well as his/her connection to family, community and environment (King et al. 2009:76). The medicine wheel construct and the associated beliefs that surround it are not, however, indigenous to northern Canada or arctic cultures. While the origin is not clear, the sacred medicine wheel sites found in present day southern Alberta, southern Saskatchewan, Montana and Wyoming suggest their origin is among Indigenous peoples of the plains and prairies (Eddy 1974). The adoption (or appropriation) of such symbolic culture to other regions including areas of the circumpolar north, is not often critically examined by scholars and practitioners including those in the medical field.

More careful attention to the cultures of northern peoples reveals far different sets of

beliefs about well-being. Family and kinship networks are a central reference point (and evidenced as protective) for Inuit youth (Kral et al. 2004: 230). The spiritual figure of *sila* also reflects local beliefs about how individuals and communities “be” vis a vis the natural and spiritual worlds. “A great spirit, supporting the world and the weather and all life on earth, a spirit so mighty that his[her]<sup>1</sup> utterance to mankind is not through common words, but by storm and snow and rain and the fury of the sea...” Rasmussen 1927:385-6). As in this reference, indications that all is well or not well in the world, are reflected in the physical environment. When the weather is poor and the seas are rough – *sila* is unhappy and something is wrong. “When all is well, *sila* sends no message to mankind, but withdraws into his [her] own endless nothingness, apart” (Rasmussen 1927:385-6).

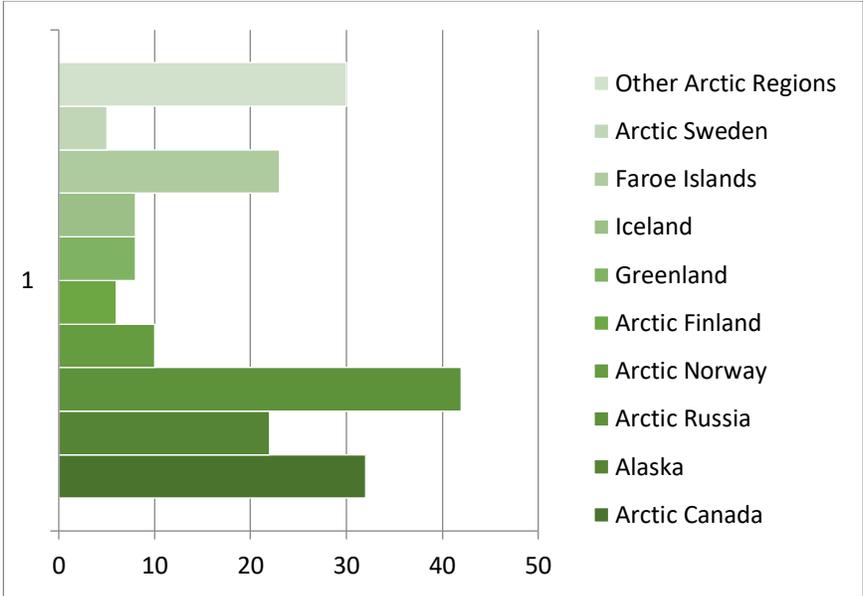
The connectedness between well-being of the people and the environment is equally apparent in other northern cultures of Canada including those of the northern Cree and Dene. The axiological question, “if the land is not healthy, how can we be”, posed by the Chisasibi Cree, (Adelson 1998: 3) is articulated in lived experience in different ways. The well-being of the Denesoline of Lutsel K’e, for example, can not be disassociated from the health of barren ground caribou or the “old lady of the falls” on the Lockhart river (Parlee et al. 2007). In other northern regions, such as Déline, the well-being of the community is also rooted in particular places and relations informed by such stories as *tudzé* (the waterheart) told by Sahtugot’ine prophets and elders (Neyelle in GBLWG 2006: 4). Linguistic translations of well-being also reflect practices rather than places, or people. The “Dene way of life” (Dene ch’anié) and *miyupimaatisiiu* – being alive well in Cree – suggest health and well-being are a process or journey as opposed to a state of being (Parlee et al. 2007; Adelson 1998). While pan-Indigenous references (e.g., the medicine wheel) can catalyze conversation, a much richer understanding of well-being comes from recognition and understanding of the beliefs, values, relationships, stories and places that matter to specific northern communities. It is these rich community-based notions of well-being (articulated in various ways) that can clarify the contradictory narratives about the opportunities and challenges posed by resource development and its day to day influences over life in northern communities.

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<sup>1</sup> As noted by Merkur (1983), *sila* is referred to as having different genders (male and female) in different regions of Nunavut (1983: 25).

## Resource Development: The Challenge to Well-being

Resource development in the circumpolar north represents a growing percentage of national GDP (Haley, Klick, Szymoniak, & Crow, 2011; McDonald, Glomsrød, & Mäenpää, 2006). By some accounts the economic contribution of resource extraction in Canada ranks highest among all circumpolar nations next to Arctic Russia (Fig. 2).



**Fig. 2 – Dependence on Primary Resource Sector by Arctic Nations - (Percentage of National GDP of Primary Resource Sector - Non Renewable Resource Extraction and Renewable Resources).**  
Adapted from Glomsrød 2009 [https://oaarchive.arctic-council.org/bitstream/handle/11374/840/ACSAO-NO03\\_7\\_2\\_ECONOR.pdf?sequence=1](https://oaarchive.arctic-council.org/bitstream/handle/11374/840/ACSAO-NO03_7_2_ECONOR.pdf?sequence=1)

The opportunities for development offered through the primary resource sector are complicated by boom bust cycles triggered by oscillations in global demand for raw materials including petroleum, metals, diamonds and other resources. In Canada, such highs and lows of resource development are felt across the north with some marked regional differences. Nunavut has a history of mining in areas such as Rankin Inlet but in recent decades has experienced little growth in this industry, however, save for several new mining projects. If built, the construction of the Mary River and Meliadine mines are anticipated to be the main drivers of economic activity in the coming years (Conference Board of Canada, 2001, 2012). Gas reserves are also likely to be a focus in both Nunavut and the Northwest Territories. Between 1999 and 2004, the

Northwest Territories' economy grew by 69%, largely as a result of mining and gas exploration which increased from 28.8% in 1999 to 53.0% in 2004; in 2007 the largest jump in GDP occurred (13.1%) with the opening of a third diamond mine (Government of the Northwest Territories, 2011). Such growth is likely to increase, especially if the proposed Mackenzie Valley Gas Pipeline project moves forward. However, decreasing production in the diamond mining industry, including the closure of the De Beers Snap Lake mine, has caused a slow down in GDP growth in the last three years which is projected to continue (Conference Board of Canada, 2012). In the Yukon territory, GDP is anticipated to grow steadily over the next ten years as a result of several new mining projects (Conference Board of Canada, 2012). The expansion of the lower Churchill Falls hydro-electric project is also anticipated to contribute to economic growth in Newfoundland and Labrador. While much of the economic reporting is positive, local communities consistently question whether current and anticipated resource development activity in the Canadian arctic will result in long term and sustained benefits for northern peoples. Classical sociological theory would suggest people are better off when change is slow and of limited scope. However, cumulative effects theorists warn of the costs of many incremental effects or "death by a thousand cuts", particularly for Indigenous peoples (Walker et al. 2011).

Global interest in the north as a resource frontier presents real challenges to northern communities particularly in Canada. In some regions of the north, as in the Kitikmeot and Kivalliq regions of Nunavut, mining activity has been welcomed as a much needed source of employment and business development; revenues triggered by sub-surface rights are viewed as a means of solving major infrastructure challenges such as inadequate housing, limited water and sewage service, poor quality health, recreational services and a lack of educational opportunities. In the Inuvialuit Settlement Region, petroleum extraction is considered as one of the best development options for local communities who struggle with unemployment and poverty (Courneyea in NNSL 2008). Northern leaders, such as Nellie Courneyea assert that northerners are highly resilient to the kinds of ups and downs occurring in the arctic and have their own goals and markers for determining whether development is contributing or not contributing to the well-being of their communities. "The biggest problem we have is the patronizing attitude toward our involvement, not only in business, but in decisions about our own personal well-being. We're

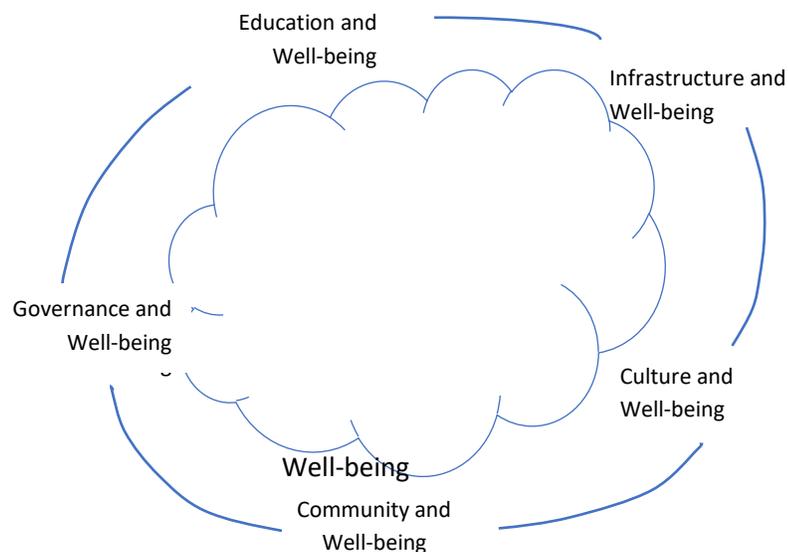
going to be here forever, and our children are going to be here forever” (Courneyea 2008).

In other regions such as the Deh Cho and Sahtu, however, many kinds of development including the Mackenzie Valley pipeline project described below, have been considered antithetical to well-being. “We are all devastated by what we have seen these days. This so-called ‘development’ project is out of control and we have to tell the politicians that it is like a cancerous tumour and that the Mackenzie Gas Project is designed to feed that tumour.” (Grand Chief Herb Norwegian, 2000).

Lack of longitudinal data and limited comparative analysis makes it difficult to theorize in detail about patterns and

trends in the relationship between well-being and resource development; many kinds of effects can neither be predicted due to the dynamic and complex nature of social and ecological systems (i.e.,

communities); impacts highly varied and local capabilities to deal with them are also complex. As a result, the conceptual and analytical frameworks are highly varied.



**Fig. 3 – Dimensions of Well-being: Framework for thinking about Issues of Well-being and Resources Development**

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In the absence of good data, simplistic, dichotomous and sometimes contradictory theories about the resource development in the arctic are often put forward and popularized. For example, beginning in the Berger years in north western Canada (1970s), a pipeline was proposed as a means of developing the northern *frontier* whilst Indigenous peoples fought to protect their *homelands* (Berger 1977; Usher 1993). Many northerners speak about their choice to follow a modern *or* a traditional way of life (Ørvik, 1976; Fogel-Chance 1993). The choice to participate

in the local rather than a global economy is another binary perspective found in the literature on the northern resource development.

The most problematic binary abstraction may be the framing of northern peoples as vulnerable populations, a label which implies those with power and capacity are located in the south (Ford and Smit 2004; Cameron 2012).. “... the label ‘vulnerable’ can shape how northern indigenous peoples come to see themselves as they construct their own identities and that identifying themselves as ‘vulnerable’ may ultimately hinder their efforts to gain greater autonomy over their own affairs” (Haalboom et al. 2012: 324).

The arctic is large, resource development projects are complex and communities are diverse. How mining, petroleum extraction and other related development activities feature in the narratives and efforts to achieve well-being varies; every community has their own particular lens through which they interpret both the opportunities and threats posed in their day to day lives.

In an effort to unpack some of the simplistic generalizations about the impact of resource development on community well-being, this chapter explores five aspects or domains of well-being discussed in the literature. Guided by theories on capabilities and their importance to health, this chapter examines how culture and community, education, financial capital, the environment, infrastructure and governance are important tools for achieving well-being. Through this discussion, the chapter identifies gaps and by extension poses questions for further research.

- *Does resource development contribute to well-being as defined by northern communities?*
- *How can the strengths afforded by recognition of Indigenous rights and land claim agreements create opportunities to influence the progress of resource development and associated benefits?*
- *What are the various ways in which past experiences with development can inform current and future resource development practices?*
- *What kinds of assets and strengths do northern communities have for ensuring benefits and mitigating adverse effects and how can governance at other scales recognize and nurture such local agency?*

## **Culture and Well-being**

Culture is a key determinant of well-being in many parts of the circumpolar north, particularly in northern Canada (Nuttall 1998; Bals et al. 2010; Figueroa 2011). This focus on culture as a theme in the development process in Canada can be attributed to colonial histories aimed at cultural assimilation (O'Neil 1986;). As evidenced in the text of land claim agreements, land use plans, and the terms of reference of environmental assessment processes, northern communities and governments are preoccupied with ensuring that development does not repeat the mistakes of the past but rather nurtures the unique way of life of northern Indigenous peoples.

This effort to nurture cultural difference is a departure from earlier periods of Canadian governance which assumed development was only achievable through cultural assimilation; many kinds of social policies of the Canadian government for example, were based on the assumption that cultural difference were to blame for lack of development (Macklem 2001). Indeed, there is still a school of theory and analysis which suggests cultural difference is to blame for the continued marginalization of Indigenous peoples within Canadian society. The “culture of poverty”, characterized by racial stereotyping (e.g., disrespect for time), has been used to explain why conditions of poverty persist in northern communities (Nagler 1975; Satzewich 1991).

The assumption of cultural difference has, over the last one hundred years led to conservative strategies towards greater cultural assimilation as evidenced in the Harper Conservative Government era (Flannigan 2008) or more liberal strategies towards multi-culturalism as shown during the (Pierre) Trudeau government.

In a fashion consistent with the Canadian state's present policy of multiculturalism, the emergent liberal position entails the view that European institutions have to be more sensitive to [Aboriginal] culture. Ethnocentric institutional arrangements need to be altered in order to accommodate [Aboriginal] culture and values. Practical policy initiatives stemming from this approach include multicultural education, the development of Indian controlled educational and justice institutions, sensitivity training, and the development of alternative forms of work organization (Satzewich 1991).

This liberal positioning is partially supported by research in the social sciences and health sciences that evidence how recognition of cultural difference is protective of health and a precursor to sustainable development. Cultural continuity, for example, is increasingly recognized as protective of well-being as indicated by research on alcohol addiction and Aboriginal youth suicide (Chandler and Lalonde 1998; Kirmayer, Boothroyd et al. 1998; Currie, Wild et al. 2011). The notion and evidence that culture is “protective” is a departure from biomedical interpretations of well-being and health from the past which situated “culture” as the cause of poor health (Waldrum 2000). The shift in viewing culture as the problem and more to its view of as the solution is attributed to a variety of socio-political shifts as well as more pluralistic approaches to the study and treatment of illness. As a result, cultural content is now viewed as important in many aspects of health care and social programs, education and governance including those related to resource development.

A wide range of surveys on health and well-being from the *Inuit Health Survey* to the *Aboriginal Peoples Survey* have attempted to measure culture using a variety of indicators. This can range from the tracking of harvest practices, fluency in an Aboriginal language, or participation in ceremonies or cultural activities. While such efforts are aimed at highlighting the protective significance of culture against such social pathologies as trauma, drug and alcohol addiction and suicide (Chandler and Lalonde 1998), the essentialization of culture into measureable bits or “things” is seen as overly simplistic (Brady 1995) and in some case part of a colonial and neo-colonial process of Aboriginal surveillance (O’Neil et al. 1998).

Cultural knowledge, norms, practices and beliefs, or Traditional Knowledge, may be equally protective of well-being. Traditional Ecological Knowledge (TK) is a cumulative body of knowledge developed over many generations (Berkes 2008). In many parts of the north, including Nunavut and settled land claim areas of the Northwest Territories, TK is to be considered equally with science in decision-making about lands and resources. Legislation such as the Traditional Knowledge Policy of the Government of the Northwest Territories is precedent setting in the opportunities it provides Aboriginal people to influence decisions of environmental assessment, land use planning and the management of forests, wildlife and fisheries. Such a policy has often translated into agreements and initiatives aimed at the documentation and use of TK in the management of resource development. In addition to contributing to the sustainability of projects and their effects on the environment, such initiatives have social benefits.

Research features as part of the enterprise to improve cultural understanding and cross-cultural relations. A critical concern for many Indigenous peoples in the north is the tendency to frame cultural practices and identities as fixed in time and space rather than dynamic and living aspects of community. While there is some tacit recognition that there is no imperative to live as we did in 1897, questions of cultural authenticity are perpetually raised in the media and by government when there is an assertion of cultural rights. As a result, “making claims to cultural rights, sometimes requires framing these claims in terms of an essentialized, homogenous ‘traditional’ culture” (Merry 2001 :41).

The recognition of “culture” and support of cultural continuity in the governance of resource development is however, challenging. Some sociologists point out there is lack of clarity about what kinds of practices, behaviours or relations might be considered assimilative or neo-colonial in nature and what might be considered culturally sensitive; indeed the line between cultural respect and cultural appropriation can sometimes be blurry. Beyond recognition and use of material culture (e.g., wearing of caribou hide moccasins at the workplace) and use of symbolic culture from time to time (e.g., use of Indigenous language in the naming of a mine site) more in-depth research is needed on the successes and failures of cultural sensitivity policies and more broadly how Indigenous cultural practices and identities are influenced by resource development activity and their governance (Missens et al. 2007).

- *How can resource development contribute to cultural continuity rather than discontinuity?*
- *How is culture protective against the adverse effects of resource development?*
- *What are best practices in the development and implementation of cultural sensitivity policies?*
- *How are Indigenous cultural practices and identities influenced by resource development activity and their governance?*

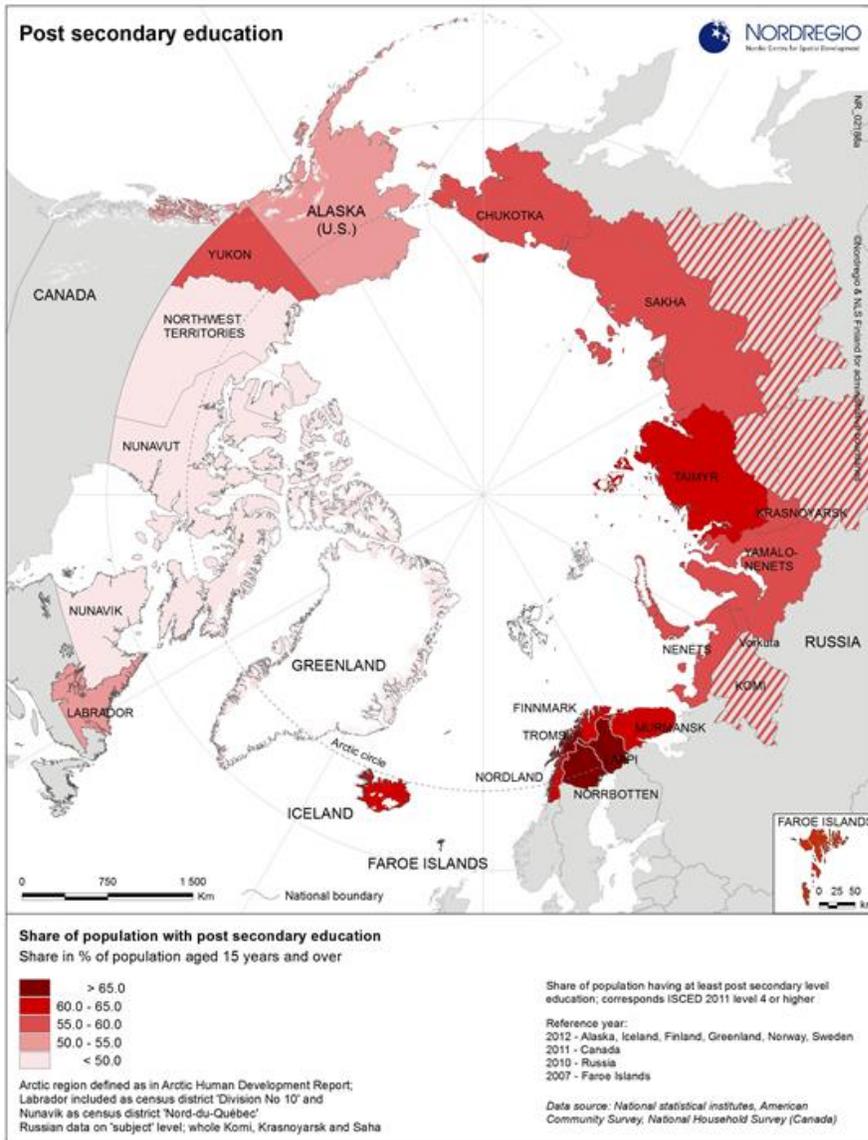
## **Education and Well-being**

A large body of research has focused on the role of education as a tool for achieving well-being with a lesser focus of the intersection between education, well-being and resource development. In addition to enabling individuals and communities to *capitalize* on resources and opportunities in ways that are sustainable and beneficial, knowledge and the social processes and institutions that produce it, are also interconnected with the socio-cultural practices, values and norms which

underlie well-being.

- *What is the landscape of formal and informal educational opportunities across the arctic? How do these educational patterns correlate with resource development activity?*
- *How can formal education systems better contribute to the well-being of northern communities?*
- *What kinds of traditional knowledge, practices and institutions are most significant to individual and community well-being?*
- *How does knowledge generated and shared contribute to land and resource development planning and management (e.g., land use planning, environmental assessment)?*
- *What kinds of educational opportunities are created through resource development and what kind of opportunities are limited? What are the incentive and disincentives?*
- *How does resource development shape and reshape the kinds of knowledge that is produced and reproduced within communities?*

In the circumpolar north, as elsewhere, education has many faces and is often dualistically conceptualized as both formal and informal; formal education is defined here as the form of education delivered by the state (governments) and the latter rests in the domain of the community and household (MacGregor 2011). Formal educational achievement rates in the circumpolar north are highly varied. Norway has the highest post-secondary education rates while Canada has the lowest of all circumpolar nations.



Explanations for these statistics from Canada's north are varied. The colonial histories within Canada including policies aimed at cultural assimilation are among the most well supported and accepted theories. The traumas associated with the residential school system, for example, are among the reasons why the education system today continues to be perceived as a threat to well-being rather than an opportunity (TRC 2015).

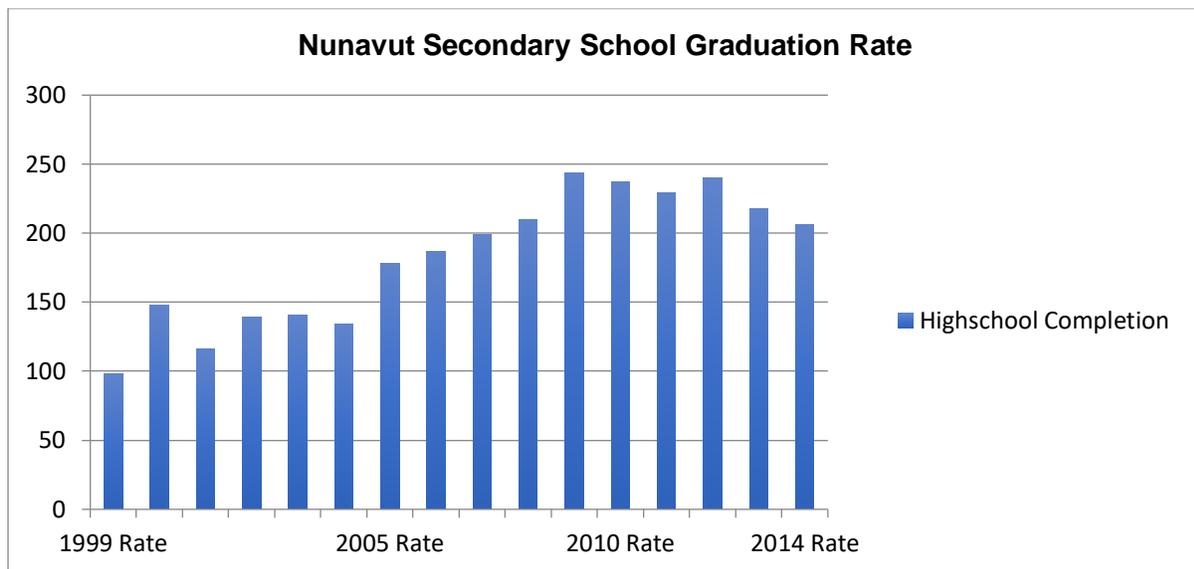
There are also consistent concerns about the lack of fit between Euro-Canadian systems of education and those of northern Indigenous peoples (Berger et al 2006) a problem theorized in social psychology as cultural dislocation or discontinuity. Efforts to deliver formal education in a

more culturally meaningful way are consequently being spearheaded in Canadian north and other circumpolar nations (Hirvonen 2004). “One of the greatest challenges facing communities, educators and researchers in the Arctic is that of developing genuine Inuit, Dene and other approaches to education, not just sprinkling cultural materials into approaches designed for southern systems” (Vick-Westgate 2002: 17).

Consequently there is a growing body of work in education policy and elsewhere focused on how to build more holistic models of formal education and learning that reflect traditional ways of knowing, as well as skills for survival in a globalized arctic economy (Battiste 1998). Some key examples in the Northwest Territories include the Dene Kede. However, there are many critics of such efforts particularly in light of limited time, human resources and funding for basic curriculum (e.g. math). The sharing of Traditional Knowledge and skills is more often than not left up to the family, with the formal education system offering basic skills (e.g., reading, writing, arithmetic, and science) (Salokangas and Parlee 2009). But these two systems of learning remain incongruent even when delivered in different domains. A study in Tuktoyaktuk pointed out the obvious contradictions: “If youth stay in school they spend less time on the land. If youth spend extended periods of time on the land required to learn traditional knowledge and skills, they are unlikely to succeed in the formal school system” (Schlag 2004: 39). Opportunities for learning in both the formal education system and within the home are also very uneven within communities and across the arctic; diverse family histories often account for some children have many opportunities for learning and others having very few. Those families who do not value formal education tend not to see success in the formal education system. Similarly, those who do not value traditional knowledge and skills for living on the land do not pass on that knowledge and those skills to their children. Conversely, “if a family is strongly anchored in the political, traditional, and wage economies, it will envision more schooling and lucrative options for its young people...” (Salokangas and Parlee 2009: 202). Many of those who do become educated, however, leave their communities in search of broader opportunities elsewhere leading to rural-urban migration patterns similar to other parts of Canada.

Comparative analysis of educational attainment rates across the circumpolar north is thus only marginally useful given the different kinds of socio-cultural histories. A more helpful approach

is to explore changes within each region. In Nunavut, for example, educational attainment rates between 1999-2014, tell a more hopeful story about the progress in addressing some of the education issues noted above. Between 1999-2010 for example, high school completion rates almost doubled. It is not, however, clear what kinds of strategies to improve these educational outcomes were most meaningful and successful within the territory.



**Fig. 3. Secondary School Graduation Rates in Nunavut (1999-2014).** Based on data from Nunavut Bureau of Statistics. Accessed 2015 November via: [stats.gov.nu.ca](http://stats.gov.nu.ca)

The statistics on formal educational attainment (e.g., lack of post secondary, low high school graduation rates) in Canada create disadvantages *vis a vis* the capture of benefits from resource development compared to those from Greenland and Nordic regions. Corresponding narratives that communities are “not ready” for the training and employment opportunities that rapidly occur with natural resource development projects such as the proposed Mackenzie Gas Project.

To encourage greater participate and success in formal education, industry is playing an increasingly more influential role in the dynamics of education and training through the offer of adult education programs that are directly linked to employment opportunities. While many of these programs are equally or more successful than government initiatives, there are concerns that over-emphasis on resource development employment versus those jobs of value in communities or other sectors leading to a brain drain in communities (Hodgekins 2008). Although creating short term benefits, it may also reshape the kinds of educational opportunities

and the short and medium term characteristics of the labour force.

- *An exploration of the particular kinds of histories of formal and informal education across the circumpolar north is lacking; research around this theme is recognized as particularly important to understanding and reconciliation between Indigenous and non-Indigenous peoples.*
- *What other kinds of institutions are needed to support knowledge sharing and knowledge mobilization for improving the sustainability of resource development (e.g., GNWT Traditional Knowledge Policy)?*
- *Can an integration of formal and informal educational opportunities improve educational outcomes (e.g., higher educational attainment) requires greater consideration?*
- *How does resource development activity influence educational outcomes in different parts of the circumpolar world? Do regions with longer or more extensive histories of resource development have higher or lower educational outcomes; do these patterns change over time?*

### **Infrastructure - Material Well-being**

Resource development has the potential to both improve and adversely affect material well-being through changes in infrastructure (Hajkowicz et al 2011). It is evidenced in research in many parts of the globe that “poor infrastructure within a nation constrains opportunities for stable relationships, personal expressiveness, and productivity” (Ryan and Deci 2001: 153).

Communities in some parts of the world have benefited from the investment in infrastructure made by mining companies (e.g., recreation facilities). There are case studies in various regions where resource companies have resolved infrastructure problems through various kinds of private-public partnership arrangements (Wilson 2004). Other communities have been negatively affected by the draw on infrastructure of large scale industrial activity when corporations access but do not compensate for draws on educational and health facilities, water and sewage infrastructure and housing (MMDS 2002). It is the absence of such basic infrastructure which often leads to poor health and well-being outcomes (e.g. tuberculosis) that are not dissimilar from the developing world (Christensen 2012; Tester 2009). At the same time, evidence suggests that improvements in infrastructure, particularly in areas suffering from significant infrastructure shortfalls, substantively contributes to community well-being.

Housing is among the most critical infrastructure issues in northern Canada (Christensen 2012). The problem is seen as a growing crisis for two reasons. First, federal investment in housing which began in the 1960-70s created needs which did not previously exist. The declining condition of the housing projects constructed over twenty to thirty years ago, limited investment in housing maintenance and new homes, coupled with a growing population have created a gap between the number of houses available and the number of families in need. In Nunavut it is estimated that half of family homes are “overcrowded” with consequent statistics of social illness, particularly among children and youth becoming issues of national and international attention. Previous research on homelessness suggests housing insecurity is likely to be compounded by boom-bust cycles of resource development and uneven development across the territories with vulnerable populations (e.g. homeless, single mothers) facing the greatest disadvantages.

Public-private partnerships, in which governments work collaboratively with industry to resolve infrastructure short falls during boom periods in areas affected by resource development is a powerful model in other parts of the world including Australia (Grieve and McKenzie 2010).

However, when development projects (i.e., mines) close and communities face periods of bust, there are other kinds of infrastructure challenges. Historically, mining towns that popped up during period of construction became “ghost-towns”, creating various kinds of infrastructure maintenance and decommissioning challenges. In 1998, for example, all 1000 residents deserted the town of Pyramiden, Svalbard (Norway) after the Russian coal company operating there for 50 years closed its operation (Andreassen et al. 2010: 11). Although some ghost towns have become viable tourist economies, many abandoned mining towns, have created public liabilities owing to the toxic tailings ponds and mining shafts which require constant maintenance and monitoring. In Canada, the issue is a preoccupation of the federal government as well as affected communities; “there are literally 1000s of contaminated sites which are under federal jurisdiction and many more which we describe as orphan sites where there is an abandoned mine and there is no possibility of finding an organization who will pick up the clean-up cost” (Anderson, 1999).

The issues associated with abandoned or decommissioned mines are complex, multi-layered and

not evenly experienced (Keeling and Sandlos 2009; Sandlos and Keeling 2012; Keeling and Sandlos 2015). Indigenous communities may be most affected.

“Aboriginal residents, being more attached to land base, respond differently than the settler community. One community – Lynn Lake – became an Aboriginal service centre. Uranium City saw its entire white population relocate, awhile the Aboriginal community stayed. At Schefferville, the Naskapi and Innu are negotiating to take over the town site” (Kuyek and Coumans 2003: 3).

To avoid the problems associated with company towns, fly-in / fly-out employment scenarios became common practices in northern Canada with the aim of increasing opportunities for Aboriginal employment (Storey, 2010).

Fly-in/fly-out was, for example, originally seen as a potentially valuable component of government affirmative action programs designed to encourage participation of Aboriginal peoples in resource development. The commute system allowed Aboriginal people to participate in the resource-based activity while at the same time minimizing potential adverse social interactions through the separation of home and workplace and allowing them to maintain elements of their traditional lifestyle (Storey 2010: 1169).

Although solving some challenges, the fly-in, fly-out model and its influence on various aspects of well-being including social relations in northern communities is not well understood particularly its influence over issues such as housing costs and shortages. While any kind of employment (whether rotational commuting, or local) has the potential to contribute to the address of such infrastructure problems, its influence over social relations can have other effects on well-being (Gibson and Klinck 2005; Fonda and Anderson 2009).

- *What are infrastructure needs within northern communities and regions and how can revenues / rents from resource development contribute to addressing these needs (e.g., housing)?*
- *What kinds of policy instruments or arrangements (e.g., Socio-Economic Agreements) might contribute to addressing particular kinds of infrastructure needs?*
- *How is the lack of infrastructure (or availability and investment in infrastructure) an incentive or disincentive for resource development activity?*

- *What are the impacts of abandoned mine sites on well-being of different populations in the circumpolar north ?*
- *How does fly-in/fly-out commuting influence / change infrastructure needs in northern communities?*
- *What kinds of institutional arrangements are needed to address the liabilities of abandoned mine sites and their effects on communities?*

## **Financial Capital and Well-being**

Income from employment is often a selling point and focus during socio-economic impact assessments of large scale resource development projects; indeed employment in the mining, petroleum and related primary service sectors (e.g., construction) can be overemphasized as the magic bullet for addressing circumstances of poverty in northern Canada (Simeone 2008). But does increased income improve well-being?

There is a broad body of literature focusing on the relationship between income and well-being (Diener and Oishi 2000). It is assumed that as income increases, poverty will decrease with resulting improvements in well-being. This is not true across all income levels and may also not be the case in northern Canada where many other factors of culture, society and the land figure into peoples sense of a “good life”. Based on research in other countries, the relationship between well-being and growth in income are strongest at lower income levels (i.e. people whose income rises above the basic needs level are more likely to see steeper improvements in well-being than those at higher income levels). Significant improvements in health (e.g. life expectancy) have been made in the last 50 years in many countries but are not accompanied by similar improvements in well-being. “The proportion of people in developed societies who are happy or satisfied with their lives has remained stable over the past decades even though they have become, on average much richer” (Eckersley 2001: 77). In North America, it is often stated that people are more interested in their relative income than the absolute income. In other words, we care more that we have more money than our neighbours than about the amount of money itself. In northern Canada, however, where incomes are low in comparison to the high costs of living, absolute income (making ends meet) likely has more significance.

However, equally as important to well-being may be the social networks, extent of social

supports and feelings of belonging to a community. Individualistic traits and lack of social connectedness are conversely associated with the absence of well-being (Eckersley 2008). With that in mind, a key misconception of resource development policy in the north may be the need for full-time employment for all. Seasonal or flexible part-time employment may be the most desirable for many families (Abele 2009). Full-time employment has the potential to increase food insecurity as households have less time to procure country/traditional foods and become increasingly dependent on less nutritious and more costly food alternatives from the store (Todd 2010). Research on the household and mixed economy suggests traditional economies may be protective, in the context of boom-bust effects (Usher et al. 2003). As housing and food prices increase during a boom or wages to meet those needs disappear in an economic collapse, those who have skills and knowledge for living on land (e.g. procuring traditional/country food), are considered better off than those who are entirely dependent on the wage economy. Strong social networks and a strong social-economy may also mitigate some of community-wide effects that may result during a “bust” period of development.

Revenues from resource development can contribute to well-being in other ways. Although employment creates opportunities to improve individual circumstances, business contracts and enterprises, taxation, royalties and negotiated agreements (triggered by land and resource rights), can enable Indigenous communities to capture financial benefits at community and regional scales (See Chapter by Bradshaw). As discussed elsewhere in this volume, there are many questions about how revenues from some arrangements translate into benefits for communities and contribute to well-being more generally. Much may depend on the distribution mechanism; in some cases revenues are allocated out on a per capita basis to individual beneficiaries while in other cases moneys are retained by local and regional governments in order to invest or support community projects and programs. Trust funds are useful mechanism for communities seeking to invest in order to create long term benefits (Duncan, 2003:320). But there are a variety of factors which affect whether or not communities can negotiate ‘good’ contracts and agreements. In addition to the knowledge and expertise of individual negotiators, inequities in power relations between Indigenous peoples, governments and corporations affect the ability of Indigenous communities to effectively negotiate in ways that meaningfully contribute to their communities (Snipp, 1986).

## **The Environment and Well-being**

While there are many factors that affect the well-being of northern communities, changes in the health of the environment are among the most broad ranging and poorly understood. The relationship between the well-being of Indigenous peoples and the health of the environment has been a key focus of concern due to the strong social, economic cultural and health dimensions of this relationship: ‘if the land is not healthy, how can we be?’ poignantly highlights this interconnection (Adelson 1998). Owing to this multi-dimensional relationship to the environment, some scholars suggest that Indigenous people bear the greatest burden of environmental ‘bads’ of resource development when compared to other populations (Clay 1994; Gedicks 1994). When something happens to the land, water and wildlife, there are reverberating effects for community well-being. People worry about what will happen to the land and their children in the future. As in other communities that depend significantly on the land and resources for their livelihood, these unnatural changes are the cause of significant anxiety (Usher 1991; Bielawski 1992).

Chemical contamination, loss and disturbance of valued environments and resources are among the most prevalent issues in the literature. This is true across the circumpolar north including, particularly in the Russian north.

While the most dramatic evidence of environmental devastation and rising health problems is found in the Russian North, serious threats are by no means confined to that area alone. Nor are the negative effects limited to the borders of the countries in which they originated. Indeed, the deleterious ecological impact of our global industrial economy has become sufficiently profound that growing numbers of policy makers are beginning to ask whether present natural resource development strategies causing such harm to the Arctic should continue, and if not, what should take their place (Chance and Andreeva 1995: 218).

With the expansion of resource development activity, there are growing concerns about both the local and circumpolar risks posed by resource development and the implications for various

aspects of human security including the food security of northern Indigenous peoples.

Much concern around the contamination of particular environments and resources is attributable to the importance of these environments and resources for subsistence. Although the dependence on renewable resources in the arctic as traditional/country food varies across the north (AMAP 2007; Stefánsdóttir 2014), resource development is considered a consistent threat to wildlife, water, fisheries and biodiversity valued by Indigenous peoples. Case studies can be found in almost every part of northern Canada, Alaska, Greenland, Norway, and Russia. While many impacts are localized, other kinds of resource development impacts transcend political and geographic borders. As evidenced by diamond mining activity in the Northwest Territories, development in one part of the migratory caribou range, for example, has implications on communities in other parts of the range (Kendrick 2005; Parlee and Manseau 2005; Gunn 2011). Shipping of fuel and raw materials from various ports of extraction to markets elsewhere, is another critical pathway. Although individual nation states make policies concerning the well-being of their own citizens, there are no clear mechanisms for addressing the transboundary implications of development across nation states in the arctic.

The quantification of some aspect of land and resource use is often used as the go-to reference for understanding the significance of the environment or resource to a particular community or cultural group with health and well-being interpretable through various aspects of harvest practice, yield, consumption or other material outcome (e.g., caribou hide moccasins).

The tracking of harvest yields are indeed common practice across many parts of northern Canada and Alaska. “Native harvest studies”, date back to the James Bay and Northern Quebec Agreement (1976) and have been more recently included as part of the settlement of land claims in the region of Nunatsiavut (Berkes 1983; Usher and Wenzel 1987; Usher 2002). These studies indicate that subsistence harvesting as well as other aspects of land use are declining across the north. Greater engagement of harvesters into the wage economy is one of the key drivers behind declining participation in hunting, trapping and fishing in many regions, a trend precipitated and compounded by the rapid pace and scale of socio-cultural change across the north. A critical concern with declining harvest of species such as caribou, whale, fish and moose are the associated implications for diet and health. Shifts away from traditional/country food

consumption has been associated with an increase in lifestyle related diseases such as Type II diabetes, chronic heart disease and some cancers (Egeland et al. 2011).

There are many other dimensions of human-environment relations in the arctic that go beyond harvesting and food consumption. Research on place and place names indicate the depth of meaning around human-environment relations. While resource development and place-attachment has been a theoretical lens often used elsewhere, it has not been well used in the arctic as a means of understanding differences in the differential effects of resource development activity on different populations. Indicators such as

The reification of “environmental change” as a new problem caused by development or climatic effects is problematic, however, given that ecological variability has been characteristic of arctic life. As such some aspects of ecological variability (cycles, patterns etc.) are accepted and entrenched in livelihood practices. “Arctic hunters and herders have always lived with and adapted to shifts and changes in the size, distribution, range and availability of animal populations. They have dealt with flux and change by developing significant flexibility in resource procurement techniques and in social organization” (Nuttall et al. 2005:11-27). Differentiating between known kinds of variation and new kinds of patterns and extremes is key however, is much overlooked in the climate change literature (Duerden). Elders in Lutsel K’e, distinguish between natural change and development effects- *edo* and change that is perceived as unnatural – *edo aja* – which translates directly as “something has happened to it” (Parlee et al. 2005). The ways in which the environment variability and change feature positively (as well as adversely) in narratives and experiences of well-being needs further exploration.

## **Community and Well-being**

“Community” is also a fundamental contributor to well-being. Although it has many definitions and moorings, social capital is among the conceptual frameworks for useful in this chapter.

Putnam defined social capital as “features of social organization, such as networks, norms and social trust, that facilitate coordination and cooperation for mutual benefit (Putnam, 1995:67). It differs from other forms of capital discussed above in its relative intangibility, “for it exists in the relations among people” (Coleman 1988: S101). Numerous scholars have operationalized the concept, demonstrating that without adequate forms of social capital, individuals and communities may be unable to develop other forms of capital (e.g., human capital, effective) and may be limited in their ability to achieve critical goals such as cultural sustainability, political efficacy and economic development (Portes 1998).

Its academic definitions are only partially useful but it also has currency within Indigenous communities. Mignone and O’Neil suggest that social capital in the First Nation context can be measured by the degree that its resources are socially invested; that it presents a culture of trust, norms of reciprocity, collective action, and participation; and that it possesses inclusive, flexible, and diverse networks (Mignone & O’Neil, 2005). Social capital of a bonding nature is closely reflected in such indicators as intergeneration knowledge sharing (elders sharing knowledge with youth) family cohesion (parents supporting youth); volunteerism, civic participation (participation in public meetings), social interaction and communication, demonstration of traditional values (respect for the land); and participation in cultural events such as caribou hunting, spiritual gatherings (Parlee et al. 2007).

Many aspects of such social capital are grounded in the cultural traditions and subsistence economies of Indigenous communities (Usher et al., 2003). But as Duhaime and others have noted, subsistence does not simply involve hunting, fishing, and other food gathering activities;

“...it is a powerful ideology that extends into other areas of life including raising of children, and the treatment of elders. It also contributes to the structure of social relations, community leadership and moral authority” (Duhaime, Searles, Usher, Myers, & Frechette, 2004).

The erosion of community has emerged as a key concern within the context of resource development. Finding ways to maintain or build upon the social capital associated with subsistence economies in emerging resource development economies will create opportunities for real economic opportunity and benefit. The lack of continuity in social norms, or the disruption of social systems, may greatly limit the continuity of identity and community known to be protective of many aspects of community health and well-being (Chandler & Lalonde, 1998).

Different aspects of social capital may be critical ingredients to achieving well-being in the context of resource development (Light and Dana 2013; Casey and Christ 2005); these can be classified as bonding and bridging social capital. The former refers to the value assigned to social networks between homogeneous groups of people and the latter to that of social networks between socially heterogeneous groups. Those communities with strong social capital of a bonding nature may have a greater capacity to offset socio-economic inequities associated with the resource curse. Furthermore, those communities able to build social capital outside of their own communities to other locales may be less vulnerable to external pressures from government or industry and may be able to take advantage of new opportunities and innovations (Woolcock, 2001: 12).

The implied causal chain starts with membership in civic and social organizations, creating generalized bonds of trust within a community. These in turn serve to lower economic risk and reduce transaction costs (by increasing the “social costs” of malfeasance and free riding), which facilitates the dissemination of organizational and technical knowledge, enhancing both economic and governmental efficiency and, finally, enhancing community prosperity (Casey & Christ, 2005: 828).

However, this pattern of social capital and development is not similar in all cases. Miguel et al. studied social capital indicators across 274 Indonesian states and found no correlation with economic development outcomes from industrial activity (Miguel, Gertler, & Levine, 2005). More research in the circumpolar north about the role of social capital in economic development is needed.

- What are some cultural meanings of social capital and community useful for research on resource development and well-being? How do these meanings/measures differ across cultures and between circumpolar nations?
- What role does social capital play in a communities capacity to achieve well-being in the context of resource development?

### **Governance and Well-being**

Governance of resource development is an overarching theme in the literature on well-being. Various literatures including those from political science, psychology and sociology, suggest that the more individuals, communities and governments perceive themselves to be in control over their lands and resources and experience efficacy in their efforts to influence resource

development outcomes the higher the level of subjective well-being.

Traditional social norms, “rules” or indigenous legal orders have long been recognized as key to the stability and security of Indigenous communities including those in the arctic. Within the context for formal state and government arrangements, these social norms have been superseded in attention by institutions and processes of government that mirror state bureaucracies. The extent to which land claim settlements, and the institutions that have been created with their implementation, contribute to the well-being of arctic communities is not well explored in the literature. Indeed there are concerns that the bureaucracies that have been created in some regions have done more to hinder rather than sustain the traditional ways of life of northern Indigenous peoples (Nadasdy 1999). The extent to which such bureaucracies have created administrative control but not real power in decisions over issues that affect well-being (e.g., health, education and land and resource management warrants further consideration.

Informal institutions including norms and rules that guide everyday social relations are an equally or more important aspect of northern governance as formal systems of government. Such norms play an important role in defining what matters and what does not, guiding social and social-ecological behaviours and decisions.

Human security is used globally to speak to human development; it is generally defined as "safety from such chronic threats as hunger, disease, repressing and hurtful disruptions in the patterns of daily life" (Axworthy 2001). The evolution of the term "security" from one of militaristic meaning to one in vogue in sociology, geography and health discourse has resulted in a broader conceptualization of the socio-economic and cultural determinants of well-being. Human security in the Arctic is concerned with the intersection of power and governance and the social, economic political and environmental factors that contribute to the well-being of arctic peoples (Daveluy, Lévesque et al. 2011). It has become a popular concept in arctic policy discourse in Canada as federal and territorial governments seek to maintain sovereignty (i.e. military security) amidst mounting global interest in the mineral, oil/gas, and hydro-electric potential and the sudden access to those resources that has resulted with melting sea ice in the north-west passage of Nunavut (Borgerson 2008). Among the concepts of greatest currency is that of food security (Huish 2008). The World Health Organization defines food security as

existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”. The concept generally considers both physical and economic factors that limit or facilitate access as well as cultural attributes that determine food preference. In Canada, 21% of Aboriginal households are at risk for being “food insecure”, however, in northern Canada, the statistics are twice as high in some communities in Nunavut (Egeland, Johnson-Down et al. 2011). Food insecurity is compounded in the north by high levels of unemployment and higher than average cost of food.

## **Conclusion**

Sociologists, geographers, anthropologists, historians, economists and political scientists are in a unique position to learn from northerners and collaboratively address commonly identified issues. Unlike the silos of socio-economic, health and biophysical study and regulation that have long characterized the governance of natural resources and development in the north, well-being can make us think about local experiences of sustainability in a more holistic and integrated fashion. Rather than reflecting old social science paradigms, well-being can also account for alternative ways of knowing including local traditional knowledge of Indigenous peoples.

Well-being is a useful concept in that it tends to transcend cultural, disciplinary and geographic boundaries. It is a useful concept for this chapter in that equivocal concepts can be found in many cultures and languages in the circumpolar north. Well-being, although statistically measureable by some accounts, is also normative. Values, beliefs and social norms of individual social groups and the society at large, affect the ways in which individuals perceive and respond to the benefits and dis-benefits of resource development. As a consequence, well-being has many meanings which can lead to ambiguous dialogue debate. This paper aims to dig down below the jargon of well-being, create a taxonomy of the various determinants of well-being that often come into play in discussions about well-being in northern communities.

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