YOUTH-LED RESEARCH: ASSESSING THE VULNERABILITY OF INUIT YOUTH IN ARCTIC BAY TO SOCIAL AND ENVIRONMENTAL CHANGE

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ABSTRACT

YOUTH-LED RESEARCH: ASSESSING THE VULNERABILITY OF INUIT YOUTH IN ARCTIC BAY TO SOCIAL AND ENVIRONMENTAL CHANGE

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This thesis is an investigation of the vulnerability of Inuit youth to changing social and environmental conditions in Arctic Bay, Nunavut. A youth-led participatory action research model, including a focus group of twelve participants and sixty-six online surveys, was used to gain insight into the risks and adaptive strategies associated with social and environmental change. Further, nine in-depth interviews were conducted with adults working on youth programs and policies to determine community concerns regarding the ability of Inuit youth to adapt to social and environmental change.

This research shows that interacting social and environmental conditions are placing increased pressure on an already stressed section of the population. The ability to adapt to changing social and environmental conditions is realized differently amongst Inuit youth, citing access to income, employment, education, infrastructure, and involvement in local youth activities as key determinants of adaptation. Inuit have shown that they have a considerable ability to adapt, however, adaptation options for Inuit youth are limited by social and environmental conditions that require investment in existing and successful institutions and programs, as well as the development of policies that reduce social and economic disparities and promote cultural identity within a changing society.

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LIST OF ACRONYMS

ATV	All Terrain Vehicle
ACUNS	Annual Student Conference on Northern Studies
ACIA	Arctic Climate Impact Assessment
AHDR	Arctic Human Development Report
BAM	Better Attendance Management
CAP	Community Access Program
CBC	Canadian Broadcasting Company
CLEY	Culture Language Education and Youth
CTS	Career Technology Studies
DSD	Department of Sustainable Development
GN	Government of Nunavut
GPS	Global Positioning System
HBC	Hudson's Bay Company
HRFP	Harvard Family Research Project
HTA	Hunters and Trappers Association
HTO	Hunters and Trappers Organizations
IBA	Inuit Impact and Benefit Agreement
ICC	Inuit Circumpolar Conference
ICYC	Inuit Circumpolar Youth Council
IISD	International Institute for Sustainable Development
INAC	Indian and Northern Affairs Canada
IPCC	Intergovernmental Panel on Climate Change

IS	Income Support
ITK	Inuit Tapiriit Kanatami
MLA	Member of the Legislative Assembly
NAC	Nunavut Arctic College
NAHO	National Aboriginal Health Organization
NEU	Nunavut Employees Union
NHC	Nunavut Housing Corporation
NHSP	Nunavut Harvesters Support Program
NISP	Nunavut Income Support Program
NIYC	National Inuit Youth Council
NLCA	Nunavut Land Claim Agreement
NRC	Natural Resources Canada
NRI	Nunavut Research Institute
NTEP	Nunavut Teachers Education Program
NTI	Nunavut Tunngavik Incorporated
NWT	Northwest Territories
NYC	Nunavut Youth Consulting
PHP	Public Housing Program
QIA	Qikiqtani Inuit Association
RCMP	Royal Canadian Mountain Police
RIA	Regional Inuit Associations
RNFMB	Revised Northern Food Mail Basket
RWO	Regional Wildlife Organizations

SWOT	Strengths, Weaknesses, Opportunities and Threats
YES	Youth Employment Strategy

CHAPTER ONE: *Introduction*

1.1 Rationale for the Research

Environmental change and its implications for Arctic communities is the object of a large and rapidly growing body of literature (Berkes and Jolly, 2001; Fox, 2002; Ford and Smit, 2004; Berman et al., 2004; Smit and Wandel, 2006; Laidler, 2006). Observations documented in the *Arctic Climate Impact Assessment (ACIA)* (2004) include but are not limited to change in tree lines and temperature, reduced permafrost, and coastal erosion. Although the causes of climate change are global in scale, the impacts are experienced predominantly at the community and individual level (Blaikie et al., 1994; Handmer et al., 1999; Adger and Kelly, 1999; Fox, 2002; Smit and Pilifosova, 2003; Duerden, 2004; Furgal and Seguin, 2006). Many of these impacts are already occurring in Arctic communities. Environment-related risks, including climate change, that already pose challenges to Arctic communities include; changes in marine and terrestrial ecosystems, seasonal temperatures, the erosion of beaches in storm surges, increased depth of the active layer of permafrost, and the extent and thickness of sea ice, and research anticipates that the occurrence of these risks will increase (AHDR, 2004; ACIA, 2005).

Even under aggressive emission control measures, current levels of greenhouse gas emissions are likely to increase the probability and severity of climate change (IPCC, 2001; Ford et al., 2006). The likelihood of climate impacts has created a growing urgency to improve understanding of how Arctic communities are vulnerable to environmental change (Nuttal, 2001; Duerden, 2004, Ford and Smit, 2004; Ford, 2006(b)).

Predicted and observed change and its associated impacts in the Canadian Arctic have highlighted the need for better understanding of the determinants and dynamics of vulnerability at the community level. Vulnerability to environmental change is influenced by the processes by which adaptation occurs and the factors determining adaptive capacity (Kelly and Adger, 2000; Ford and Smit, 2004). Vulnerability assessment in environmental change research has increasingly recognized that vulnerability is a function of both exposure and the ability of the system to cope with that exposure, within the context of local conditions (Kelly and Adger, 2000; Smit and Pilifosova, 2003; O'Brien et al., 2004). The most comprehensive report compiled on climate change in the Arctic, the *ACIA* exposes a gap in the literature: limited research has been done to assess the vulnerability and adaptive capacity of Arctic communities to risks associated with environmental change. The *ACIA* report lists vulnerability assessment, using the conceptualization of vulnerability outlined above, as one of the three major priorities for future Arctic research (ACIA, 2005).

Viewing the Arctic solely as a changing environment does nothing to address the cultural, economic, or political issues of importance to the Arctic's permanent residents (AHDR, 2004). Arctic communities are experiencing environmental change in combination with other economic, political and social problems, compounding the degree of risk (Usher, 2000; Fenge, 2001; Berman et al., 2004). In less than a century, Arctic people have gone from a precarious, nomadic existence to life within a modern settlement equipped with medical facilities, government housing, electricity, televisions and radios (Condon, 1987). In many regions, industrialization and consumerism have been introduced, the

ethno-demographic makeup of society has shifted and food sources have been tainted by global contaminants (Duerden, 2004). In the Canadian Arctic these changes may be accelerated as oil, gas and minerals are developed for southern markets (Fenge, 2001).

The rate of social, economic and political change in the Canadian Arctic has had a profound influence upon young Inuit (Condon et al., 1994). Inuit youth are less likely to pursue the same mixed economic strategies as previous generations (the combination of subsistence hunting, carving, sewing, food preparation and casual employment) and must rely on new strategies to support themselves and their families (Condon et al, 1994; NTI, 2005). Through formal education, training and exposure to southern mass media, these young adults have acquired aspirations and values that govern their choice of occupation as well as preferences for entertainment, family size, material goods, food consumed and involvement in traditional activities (Condon et al., 1994). While this is the current reality for many Inuit youth, hunting and use of the environment is still viewed as having both social and cultural importance. For example, Inuit youth still partake to some degree in hunting and harvesting activities and many young men strongly associate hunting with their identity (Pratley, 2005; Ford et al., 2006). Melting permafrost, as a result of climate change, may create difficult conditions for traveling, harvesting and transporting land animals hindering the ability of young men to hunt and provide for their families.

The *Arctic Human Development Report (AHDR)*, a report assembled to document and compare systematically the welfare of Arctic residents, draws attention to another profound gap in the literature: limited research has been done to improve understanding

of the effects of cumulative change, particularly social and environmental changes, on community well-being. The literature on community well-being in the Arctic also highlights the erosion of knowledge and skill sets, which have underpinned adaptability to environment related changes, among younger generations (Condon et al., 1994).

Past research conducted in the Canadian Arctic, specifically in Nunavut, documents participant concerns regarding the ability of Inuit youth to cope with interacting social and environmental changes (Pratley, 2005; Ford, 2006). This work stresses the need for research that examines Inuit youth to improve understanding of their distinct vulnerabilities and adaptation strategies.

1.2 Aim and Objectives

The aim of the research is to characterize the vulnerability of an Arctic community, especially from the perspective of Inuit youth, to changing conditions, including but not limited to climate change, and to build capacity among Inuit youth to deal with their changing social and environmental realities. Specifically, the project has four interrelated objectives.

1) **To identify current exposures** – the current conditions or stressors related to interacting social and environmental changes that Inuit youth have to deal with in their lives.

2) **To assess current adaptive capacity** – the ways in which Inuit youth have coped with current conditions or stressors related to social and environmental changes – **and document and assess Inuit youth's recommendations on what can be done to enhance their adaptive capacity.**

3) **To identify future potential exposures** – the likelihood of changing social and environmental conditions – **and assess future adaptive capacity** – the manner and degree to which Inuit youth will be able to adapt to the future exposures identified.

4) **To build adaptive capacity among Inuit youth** – through training and involvement in the research – to participate in research and/or deal with the social and environmental changes they are experiencing in their lives.

1.3 Inuit Youth

This research is focused on interacting social and environmental changes that affect Inuit youth. Definitions of youth in the Arctic are broad and subject to interpretation. The International Institute for Sustainable Development (IISD), in co-operation with the secretariat for the Future of Children and Youth of the Arctic (supported by the Arctic Council[1]) recruits youth between the ages of 19 and 30 for internships within the

[1] The Ottawa Declaration of 1996 formally established the Arctic Council as a high level intergovernmental forum to provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic.

circumpolar north. Government of Canada initiatives that target Inuit youth (e.g. the Youth Employment Strategy (YES)); accept applications from Canadian Inuit between the ages of 15 and 30 years. The Inuit Circumpolar Youth Council (ICYC)[2] and the National Inuit Youth Council (NIYC)[3] define youth as individuals between the ages of 16 and 30. While these sources use a variety of age ranges to define an Inuit youth population, for the purposes of this study Inuit youth will be identified, consistent with the NIYC, as individuals between 16 and 30 years of age. A detailed description of Inuit youth in Arctic Bay is provided in chapter three. The implications of changing social and environmental conditions for Inuit youth are discussed in chapter five.

1.4 Thesis Outline

This thesis consists of eight chapters. Following the *Introduction,* chapter two, *Theoretical Context,* provides an overview of the pertinent social and environmental change literature. Research that has identified the Arctic region as undergoing an accelerated rate of change is reviewed. The vulnerability and adaptation literature is then examined to provide the context for the conceptual framework used throughout the research.

Chapter three, *Study Location*, describes the study site, Arctic Bay, Nunavut. The history, economy and political development of the community, particularly as they relate to Inuit youth are summarized.

[2] The Inuit Circumpolar Youth Council (ICYC) represented the interests of Inuit youth in the Circumpolar north (Alaska, Canada, Greenland and Russia).
[3] The National Inuit Youth Council (NIYC) represents the interests of Inuit youth in Canada across the Inuit regions of Inuvialuit, Nunavut (Kitikmeot, Kivalliq, Qikiqtaaluk), Nunavik and Nunatsiavut

The methodological approach is presented in chapter four, *Methodology*. The conceptual framework utilized to assess the vulnerability of Inuit youth is clarified. The operational framework, including the research design and primary data collection methods, are described in detail. Practical considerations related to the research are also addressed. The chapter concludes with a discussion of the methods selected to disseminate the results of the thesis.

Chapters five, six and seven discuss the results of the research as they relate to the objectives and conceptual framework of vulnerability presented in chapters two and four. Chapter five, *Results*, addresses the first two research objectives. Current exposures faced by Inuit youth, as well as the adaptive strategies employed to cope with changing conditions, are revealed. Future exposures and the ability of Inuit youth to adapt to these potential conditions (objective three) are discussed in chapter six, *Future Vulnerability – Enhancing Adaptive Capacity*. Chapter seven, *Experiences of Inuit Youth in Research*, addresses objective four. The operational framework utilized in this research is shown to build capacity among Inuit youth through involvement in the research.

Chapter eight, *Summary of Conclusions*, highlights the major findings of the research objectives. Limitations of the methodological approach, as well as the theoretical, empirical and practical contributions are discussed. Research questions that have emerged from this work and opportunities to conduct further research to advance the understanding of vulnerability in the Arctic are identified.

CHAPTER TWO: *Theoretical Context*

This chapter provides an overview of the relevant bodies of scholarship. The literature pertaining to changing conditions in the Arctic is analyzed from two perspectives: (1) measurements and models of environmental change, and (2) documentation of local observations and knowledge. The theoretical background for the chosen methodology and research approach is established through a review of the vulnerability and adaptive capacity literature. To conclude, methods for conducting practical adaptation initiatives are discussed and gaps in the literature identified.

2.1 Changing conditions in the Arctic

2.1.1 Measurements and Models of Environmental Change

It is widely accepted in the international scientific community that the global climate is changing and that the observed change is attributable to human activities (Houghton et al., 2001; Serreze et al., 2001; IPCC, 2001; Weaver, 2003; ACIA, 2005; IPCC, 2007). Human influences, resulting primarily from the burning of fossil fuels, have increased atmospheric concentrations of carbon dioxide and other greenhouse gases, altering radiative balances and causing a warming and/or cooling of the atmosphere (IPCC, 2001; Weaver, 2003; Hassol, 2004). The Intergovernmental Panel on Climate Change (IPCC) has documented an average surface temperature increase of 0.6°C $\pm$ 0.2°C, a 10% reduction in the extent of snow cover, and a 0.1-0.2 meter rise in average global sea level since the beginning of the 20th century (IPCC, 2007).

According to the scientists involved in the *ACIA*, the average temperature in the Arctic has increased at almost twice the rate of the rest of the world (Hassol, 2004). This has resulted in increased glacial melt, which has led too more freshwater in the ocean (Hassol, 2004). Higher concentrations of freshwater in the ocean have been found to raise global sea level, slowing ocean circulation, affecting global and regional climate (Houghton, et al., 2001; Hassol, 2004).

Global climate models attempt to describe the earth's climate and are used in a variety of applications (Legates, 2002). These include the investigation of the possible causes of climate change and the simulation of past and future climates. Future climate models for the Arctic predict warmer, longer summers, more variable snow conditions (more years of unpredictable deep and shallow snow), increased precipitation, and alterations in the frequency, magnitude, and geographic distribution of climate-related events (Zhang et al., 2000; Houghton et al., 2001). While climate models improve understanding at the global level, simulating aspects of climate variability and extremes across the Arctic, they have a number of limitations (Easterling et al., 2000; Legates, 2002, Hassol, 2004). Climate models are limited in a number of ways, including: an incomplete understanding of the climate system (Legates, 2002), an imperfect ability to transform knowledge into accurate mathematical equation (Legates, 2002), the limited power of computers (Legates, 2002), and systematic errors and limitations in accurately simulating regional climate conditions (Easertling et al., 2000). Climate models are based on averages; therefore, derived climatic predictions do not reflect best or worst case scenarios, but rather a value that falls around an average (Hassol, 2004). Climate change models are

incapable of integrating impacts and effects associated with stressors other then environmental change, such as issues of food security, transportation, infrastructure, health and employment. Combined, these weaknesses make model based predictions too uncertain to accurately assess the vulnerability of Arctic communities and develop public policy responses related to future climate changes (Easterling et al., 2000; Legates, 2002; Hassol, 2004). Thus, climate models are of limited utility for assessing how communities are sensitive to, and affected by, change. Since climate models cannot provide regional projections and comprehensive assessments of vulnerability they have been found to be of little relevance to people impacted by change (Instanes et al., 2005).

2.1.2 Local Observations and Knowledge of Environmental Change

Social and environmental changes are occurring rapidly in Arctic regions (Anisimov and Fitzharris, 2001; Holland and Bitz, 2003) and pose significant risks to communities and human systems (Ford and Smit, 2004; Hassol, 2004). Increasingly research conducted on environmental change in the Arctic has included the observations and knowledge of local people (McDonald et al., 1997; Huntington, 1998; Fox, 2002; Ford et al., 2004; Laidler, 2006). Inuit have spent, and in many communities continue to spend, a significant amount of time hunting and traveling on the land and sea ice. As a result, Inuit have a unique understanding of the relationship between environmental conditions and climate change, and have provided observations (Laidler, 2006).

Research with Athapaskan and Tlingit elders in the Yukon and Alaska documents the vivid memories of elders regarding the catastrophic consequences of surging glaciers in

the 19th century and changes in flora and fauna observed in the 20th century (Cruikshank, 2001). Inuit in Nunavut, Canada have observed changes in temperature, ice and weather patterns, and the behavior and health of marine mammals and caribou, which they consider indicative of longer term climatic trends and increasing climate variability (Huntington, 1998; Berkes and Jolly, 2001; Thorpe et al., 2001; Fenge, 2001; Krupnik and Jolly, 2002; Fox, 2002; Ford 2006a; Ford, 2006b, Ford 2006; Laidler, 2006). Canadian Inuit are concerned that these changes have the potential to alter travel routes, reduce access to hunting grounds, impact marine mammal distribution and behavior, and inhibit their ability to accurately predict weather and sea ice conditions (Huntington, 1998; Thorpe et al., 2001; Berkes et al., 2001; Fox, 2002; Laidler, 2006; Ford 2006a; Ford, 2006b, Ford 2006c). The increased occurrence of unpredictable weather events and inconsistencies in traditional knowledge have resulted in an inability to accurately forecast the weather and sea ice, which underpins safe and successful hunting (Duerden, 2001; Fenge, 2001; Krupnik and Jolly, 2002; Thorpe et al., 2002; Ford et al., 2006).

Arctic Communities have also expressed their concerns with regards to observed climate change trends and the possible effects of these changes on their health and well-being (Fenge, 2001; Berkes and Jolly, 2002; Furgal and Seguin, 2006). In the eastern Canadian Arctic Inuit have observed the drying of rivers, swamps and bogs, to the extent that access to traditional hunting grounds, and in some instances, migration of fish are impaired (Hassol, 2004). The availability of these species as well as the process by which they are harvested is directly linked to food security and the ability of Inuit to continue to practice their culture and way of life.

Recent studies have documented local observations of environmental change in Arctic Bay, Nunavut. Bell and St-Hilaire, (2003) assessed the timing and impact of individual and cumulative hazard events on infrastructure. Interviews and geomorphic mapping determined that the community is actively trying to manage infrastructural hazards. Diversion channels, for example, have been constructed to divert surface run-off away from housing (Bell and St-Hilaire, 2003). Erin Pratley (2005) investigated the implications of changes in household diet on food security among Inuit households. In both studies interviews were conducted to determine what changes have occurred, the reasons for the changes, and how the identified changes affect vulnerability and food security. James Ford (2006) conducted interviews with adult hunters to characterize the nature of community vulnerability to environmental change. Both studies go beyond recording local observations of change. Ford and Pratley worked extensively with the community to identify what conditions are important to them, what changes are already occurring, how they are affected and the capacity of the community to adapt. The results of these studies report that changes are not beyond the range of the community's ability to cope and that community members are currently employing a variety of strategies to deal with change. The studies summarized above provide a sampling of local observations and knowledge in Arctic Bay and it is essential that future related studies acknowledge and build on these findings.

Over the next 100 years, climate change is expected to accelerate in the Arctic contributing to major environmental and social changes (Serreze et al., 2000; Houghton

et al., 2001; Ford and Smit, 2004; Hassol, 2004). Government reports have documented the environmental, economic, political and social changes communities in Nunavut have experienced (Nelson, 1982; Rigby et al., 2000; Usher, 2000; Fenge, 2001; Berman et al., 2004). According to these reports, environmental change will have affects on the distribution and quality of animals and other resources, industrial development, as well as shipping and tourism associated with the opening of the Northwest Passage.

In response to concerns expressed by Inuit communities and organizations in Canada, Inuit Tapiriit Kanatami (ITK), the national organization representing Inuit in Canada, initiated a project involving a series of community workshops to investigate environmental change, its potential impacts at the community level and strategies for adaptation (Nickels et al., 2005). The purpose of these workshops was to share community perspectives on the changes taking place and to influence local, regional, national and international processes on environmental change, especially in the area of responses to these impacts—both existing and potential (Nickels et al., 2005). The perspectives of community residents and their level of adaptation, based on rich and valuable local knowledge, were summarized and analyzed in a series of reports, which provided the foundation for the development of a national Inuit synthesis report entitled, *Unikkaaqatigiit: Putting the Human Face on Climate Change Perspectives from Inuit in Canada* (2005).

All communities involved in *Unikkaaqatigiit* reported changes in weather, a seasonal shift in average temperature (either warmer or cooler), an increase in the intensity of the

sun's heat, and changes in the in the quality and quantity of rain and snow and the timing of precipitation throughout the year (Nickels et al., 2005). Analysis of these observations illustrated the great scope of local Inuit knowledge of the environment and put changes in the environment in the context of social change (Nickels et al., 2005). In the concluding section of the report, *Perspectives from Nunavut Communities*, the authors state,

> "As Inuit are so closely tied to the land, seas, and waters around them via the species these environments provide, and as the Arctic environment is one that is exhibiting very rapid changes in the face of global climate change, it is important to better understand Inuit and Northern community perspectives on these issues and to begin to work with communities to develop adaptation measures. (Nickels, et al., 2005)"

Nunavut Tunngavik Incorporated (NTI), the regional organization that represents Inuit under the Nunavut Land Claim Agreement (NLCA), has expressed concern that the changes reported in documents such as *Unikkaaqatigiit* will be compounded by future societal and environmental changes, in particular that the ability of Inuit youth to practice their culture and learn Inuit qaujimajatuqangit (Inuit traditional knowledge) will be threatened (NTI, 2005). Elders in Nunavut have noted that, "Inuit youth are not equipped to detect and respond to dangers associated with climate change and need to be trained and educated, without relinquishing their culture, so that they will have the skills necessary to adapt" (NTI, 2005:5). Research conducted in collaboration with Nunavut communities has also identified this problem (Fox, 2002; Ford, 2006b; Ford, 2006c) but inquiry from the perspective of young Inuit themselves is essentially absent. It is not clear how Inuit youth in Nunavut view social and environmental changes, what their capacity to deal with these changing conditions is, and what factors are important to their vulnerability.

2.2 Interpreting Vulnerability

Concepts of vulnerability go back to early discussions of stability and resilience ecology (Brookhaven, 1969; Dow, 1992). This work linked the impact of a perturbation on a system with other characteristics such as diversity and persistence (Holling, 1973). The concept of vulnerability has continued to evolve in various research fields including; risk assessment and natural hazards (Hewitt, 1983; Liverman, 1990; Blaikie et al., 1994; Cutter, 1996), food security (Sen, 1981; Dreze and Sen, 1990; Watts and Bohle, 1993), national security (Homer-Dixon and Blitt, 1998), and global environmental change (Liverman, 1990; Kasperson et al., 1995).

There is wide body of environmental change literature that assesses the definitions and methods of vulnerability; the following two sections will attempt to clarify the terms and approaches of vulnerability.

2.2.1 Defining Vulnerability

Definitions of vulnerability in the environmental change literature are often distinguished as biophysical or social. Biophysical vulnerability is viewed in terms of the amount of damage experienced by a system as a result of a hazard and is often used in natural hazards research (Liverman, 1994; Brooks, 2003) Biophysical vulnerability can be described as the sensitivity of the physical system, or the likelihood of exposure (Liverman, 1994; Cutter, 1996). In contrast, social vulnerability views vulnerability as something that exists within a human system independently of external hazards (O'Brien

et al., 2004). It emerged from the recognition that exposure to environmental stress was not the only component resulting in vulnerability (Sen, 1981; Liverman, 1994). Social vulnerability has been characterized by many factors including; marginalization, inequity, presence and strength of institutions, food and resource entitlements, economics and politics (Adger and Kelly, 1999; O'Brien et al., 2004). It also focuses on the vulnerability of humans, as opposed to biophysical vulnerability, which is concerned with the vulnerability of physical systems (Brooks, 2003).

Crosscutting the various definitions of vulnerability are two perspectives; vulnerability expressed as a result of exposure and vulnerability as a measure of coping abilities (Dow, 1992). The following tables differentiate these concepts:

Table 2.1: Vulnerability Expressed as a Result of Exposure

EXPOSURE
Vulnerability as a measure of damage to infrastructure (Green, 1990).
The magnitude of exposure may be equated with the magnitude of vulnerability (Liverman, 1990)
Differences in potential exposure to a hazard as the measure of vulnerability (Dow, 1992).
Often considered relative to individual events (e.g. floods or hurricanes) (Dow, 1992).

Table 2.2: Vulnerability Expressed as a Measure of Coping Ability

COPING ABILITY: RESISTANCE AND RESILIENCE
Resilience, the measure of a system's, or part of a systems capacity to function and recover from the occurrence of a hazardous event (Dow, 1992).
Vulnerability is the "degree to which different classes in society are differentially at risk, both in terms of the probability of occurrence of an extreme event and the degree to which the community absorbs the effects of extreme physical events and helps different classes recover" (Susman et al., 1983).
Vulnerability to a hazard is given. Seeks for explanations of differential losses in the differences between nations, people, ecosystems, physical features, or biota affected (Dow, 1992).
Resistance and resilience cover broad time frames, including stress and recovery (Dow, 1992).

Although exposure and coping ability can be differentiated they can also be expressed together. As shown in equation 2.1, the functional relationship between exposure and adaptation is not specific; it varies by location, context, sector and time (Smit and Pilifosova, 2003).

Equation 2.1: Vulnerability Concept (Smit and Pilifosova, 2003)

Vist = f(Eist, Aist)

Where:
Vist = Vulnerability of system (i) to climatic stimulus (s) in time (t)

Eist = Exposure of (i) to deal with (s) in time (t)

Aist = Adaptive capacity of (i) to deal with (s) in time (t)

In this approach, vulnerability is defined in terms of the exposure, capacity to adapt and vulnerability is not dependent on predicting adaptive behavior (Kelly and Adger, 2000). Vulnerability is characterized as a function of the exposure of a system (a community, household, individual, activity, etc.) to climate change and its adaptive capacity. A system that is more exposed to a particular climate stimulus will be more vulnerable, and

a system that has more adaptive capacity will tend to be less vulnerable due to the ability to cope with the exposure.

2.2.2 Assessing Vulnerability

The extent and scope of environmental change research, and the fact that physical, biological and social scientists are involved in addressing its complex issues, has led to different interpretations of vulnerability assessment (O'Brien et al., 2004). Vulnerability is often assessed as an end point or a starting point.

2.2.2.1 Vulnerability as an End Point

The end point approach has been heavily cited in the natural hazard literature (Blaikie et al., 1994) and has been the accepted method of the IPCC (IPCC, 1990; 1997; 2001; 2007). Vulnerability as an end point seeks to establish the net impacts of climate change. Generally, it is viewed in terms of the magnitude of damage experienced by a system, as a result of the impact from a hazard minus adaptation (Brooks, 2003). That is, vulnerability is the outcome of climate change impacts minus adaptations (O'Brien et al., 2004):

Figure 2.1: End Point Approach to Vulnerability Assessment

Vulnerability = Impact – Adaptation

The end point scenario answers questions such as: What is the extent of the climate change problem? Do the costs of climate change exceed the costs of greenhouse gas mitigations? What are the net impacts of climate change? (Smit and Pilifosova, 2003; O'Brien et al., 2004; Smit and Wandel, 2006).

2.2.2.2 Vulnerability as a Starting Point

The second approach views vulnerability as a starting point. Vulnerability when viewed as a starting point provides a means of understanding how the impacts of environmental change will be distributed and efforts to identify how vulnerability can be reduced are encouraged (Kelly and Adger, 2000; O'Brien et al., 2004). In this approach vulnerability pertains to individuals and social groups and is considered within the scope of other social and ecological factors and processes (Kelly and Adger, 2000; O'Brien et al., 2004).

The starting point originates in social vulnerability and asks questions regarding: Who is vulnerable to what and why? How can vulnerability be reduced? Why are some groups more adversely affected than others? (Smit and Pilifosova, 2003; O'Brien et al., 2004). The focus is on human and community vulnerability to change in relation to the exposure of a community to a hazardous condition and to the adaptive capacity of the community to deal with those conditions (Smit and Pilifosova, 2003). The starting point approach differs from the end point approach because it identifies vulnerability as it pertains to people rather than other measures.

To reduce vulnerability to change communities can reduce their exposure and enhance their adaptive capacity (Smit and Pilifosova, 2001; Fussel et al., 2002; Burton et al., 2002; O'Brien et al., 2004).

2.3 Adaptive Capacity

There is a general recognition in the literature that one effective means off reducing vulnerability is to increase adaptive capacity (Adger and Kelly, 1999; Smit and Pilisofova, 2001; Ford et al., 2004). The IPCC defines adaptive capacity as, "the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences." Adaptive capacity is widely used in the literature to describe a system's ability to deal with an exposure or risk (Smit and Pilifisova, 2003). Adaptive capacity can vary among countries, communities and social groups (Adger and Kelly, 1999; Smit and Pilifosova, 2001). It is similar or closely related to other commonly used concepts, such as; adaptability, coping ability, management capacity, stability, robustness, flexibility and resilience (Smit and Wandel, 2006). The determinants of adaptive capacity can include (IPCC, 2001; Yohe and Tol, 2002):

- The range of available technological options for adaptation;
- The availability of resources and their distribution across the population;
- The structure of the critical institutions and decision making;
- Human capital including education and personal security;
- Social capital including property rights;
- The systems access to risk spreading processes;
- The ability of decision makers to manage information; and
- The public's perceived attribution of the source of stress.

Although multiple definitions and determinants exist adaptive capacity will be defined in this thesis, consistent with the environmental change literature, as the, "potential or ability of a system, region or community to adapt to climatic stimuli and their effects and impacts" (Smit and Pilifosova, 2001).

2.4 Adaptation

Adaptation is inherently related to adaptive capacity and has been at the centre of debates on reducing vulnerability (Turner et al., 2003; Smit and Wandel, 2006). In the literature numerous definitions and multiple interpretations of adaptation have been identified. Table 2.3 illustrates how adaptation has been differentiated in the context of climate change in the last two decades:

Table 2.3: Adaptation in the Context of Climate Change

AUTHOR	DEFINITION OF ADAPTATION
Butzer, 1980	Human ingenuity including technological innovation and long-range planning in light of predicted climate change and its anticipated impacts on world food supply.
Pielke, 1998:159	Adjustments in individual groups and institutional behavior in order to reduce society's vulnerability to climate.
Smit et al., 2000: 225	Adjustments in ecological-socio-economic systems in response to actual or expected climatic stimuli, their effects or impacts.
IPCC, 2001	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Brooks, 2003: 8	An adjustment in a system's behavior and characteristics that enhances its ability to cope with external stress.

In addition to the above definitions, adaptation can be defined in the context of human dimensions of global change. In this body of literature adaptation refers to a "process, action or outcome in a system (household, community, group, sector, region, country) in order for the system to better cope with, manage or adjust to some changing condition, stress, hazard, risk, or opportunity" (Smit and Wandel, 2006: 282).

Analyses of adaptation range in scale from the "vulnerability and adaptation of an individual or household to a particular climate stress such as drought, through the vulnerability and adaptation of a community to multiple stresses, to the vulnerability of humankind (or the global ecosystem) to all stresses and forces" (Smit and Wandel, 2006: 282-283). Applications also vary by the "phenomena of interest (biological, economic, social) and by time scale (instantaneous, months, years, decades and centuries)" (Smit and Wandel, 2006: 283).

In the environmental change literature the need for adaptation is increasingly being recognized (Smit and Pilifosova, 2001; Burton et al., 2002; Huq et al., 2003; Smith et al., 2003) as awareness of climate change is growing itself (Smit and Wandel, 2006). An early example is Butzer (1980) who considered "cultural adaptation (human ingenuity including technological innovation and long-range planning) in light of predicted climate change and its anticipated impacts of world food supply" (Smit and Wandel, 2006: 283). Since then, analyses of adaptation to changing climatic conditions have been undertaken for a number of purposes, such as: to estimate the degree to which climate change scenarios could be mitigated; to focus on specific adaptation options for a system subject to climate change; to identify the vulnerability of countries on the basis of indices and variables (Kelly and Adger, 2000; O'Brien et al., 2004); and to contribute to practical adaptation initiatives (Smit and Wandel, 2006).

Studying adaptive capacity and adaptation in the context of the Arctic is imperative and feasible. By considering social and environmental changes and the full range of adaptive

strategies available, Arctic communities can act against future challenges thereby reducing their vulnerability (Kelly and Adger, 2000; Ford and Smit, 2004; Ford, 2006(b)).

2.4.1 Practical Adaptation Initiatives

Practical analyses of adaptation investigate the adaptive capacity and adaptive needs in a particular region or community in order to identify means of implementing adaptation initiatives or enhancing adaptive capacity (Smit and Wandel, 2006). This enables the identification and development of a particular adaptive measure or practices of adaptive measures that are specific to the needs of that particular country, community or group (Smit and Wandel, 2006).

2.4.1.1 Mainstreaming Adaptation Policy

Early climate change adaptation analyses identified adaptation policy initiatives in light of modeled climate change impacts, holding all other conditions constant. While this may have been appropriate to isolate the effects of climate change, it proved to be of little use in getting adaptation initiatives implemented (Huq et al., 2003; Smit and Wandel, 2006). Many current systems and policies are not well adjusted to today's climate variability (IPCC, 2001; Burton et al., 2002) and Arctic public policy has often been inappropriate in the northern context (Berman et al., 2004). This situation suggests that there is a need for adaptation options that are community relevant, increase adaptive capacity and thus reduce vulnerability to future changes (IPCC, 2001). Adaptation policy has to be responsive to a wide variety of economic, social, political and environmental

circumstances (Burton et al., 2002). Therefore, in a policy context, adaptation to change should reflect consciously planned adjustments in a system to reduce the expected negative effects of change (Ford and Smit, 2004).

In order to develop a policy for adaptation to future social and environmental changes, it is useful to begin by assessing current vulnerability to present day changes (including variability and extremes) and the ways that existing policy and development practices serve to reduce vulnerability (Burton et al., 2002). Humans, in particular Inuit societies, have continually adapted, although they have not always been successful, to their environment and adaptation strategies already exist. To increase effectiveness, new adaptation policies can be incorporated into successful pre-existing policies (Smit and Pilifosova, 2001; Burton et al., 2002; Ford and Smit, 2004, Smit and Wandel, 2006). For example, adaptation policy should encourage governments to take actions; including legislation, regulations, and incentives to mandate or facilitate changes in socio-economic systems aimed at reducing vulnerability to change, including climate variability and extremes as well as issues of food security, health and infrastructure (Burton et al., 2002).

2.4.1.2 Community Based Vulnerability Assessments

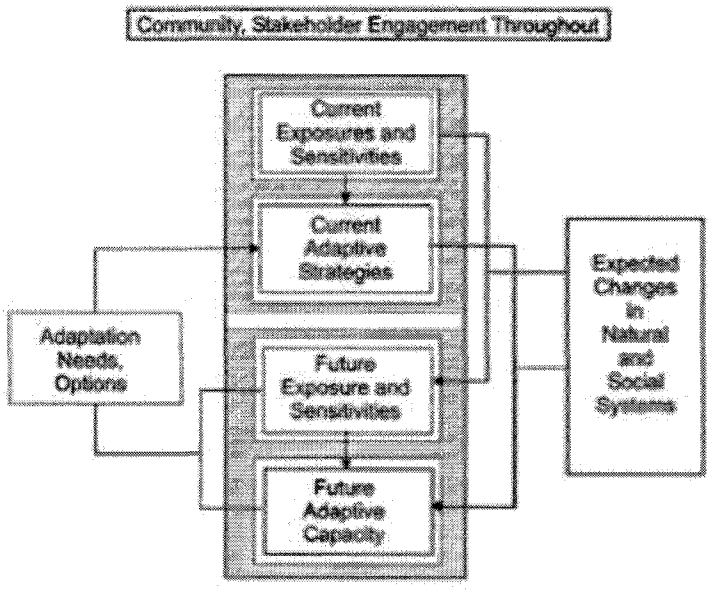
Community based vulnerability assessments can also contribute to practical adaptation initiatives because they are specific to that particular region and allow the determinants of adaptive capacity to be identified by the community itself (Smit and Wandel, 2006). Community-based analyses reveal that the conditions that interact to shape exposures, sensitivities, adaptive capacities, and hence create needs and opportunities for adaptation,

are community specific (Smit and Wandel, 2006). Variants of this technique, often referred to as *participatory* or *bottom up* vulnerability, are also found throughout the literature (Jones, 2001; Turner et al., 2003; Lim et al., 2004).

Participatory vulnerability assessments require the "active involvement of stakeholders, considerable effort to ensure legitimacy, information collection on community relevant phenomena and processes, the integration of information from multiple sources and the engagement of local decision makers" (Smit and Wandel, 206:288). This ensures that changes (political, cultural, economic, institutional and technological) beyond those related to the environment are addressed (Smit and Wandel, 2006).

The participatory vulnerability approach also recognizes that sources of exposures, sensitivities and adaptive capacities function across scales, from the individual to the national (Smit and Wandel, 2006). Figure 2.2 presents a general summary of the participatory vulnerability assessment approach, based on such work as Lange (2003), Vasquez-Leon et al. (2003), Turner et al. (2003), Ford and Smit (2004), and Lim et al. (2004).

Figure 2.2: Conceptual Framework for Vulnerability Assessment and Mainstreaming



This approach involves the assessment of current and future exposures and adaptive capacity as they relate to the stresses and concerns of the system studied. The participatory vulnerability assessment approach addresses who is currently vulnerable, to what, and future adaptive capacity in light of expected changes. The approach seeks to understand why and how the community is vulnerable, in what ways, what is currently being done (and at what levels (e.g. individual, community, institution, etc.) to cope with the problem and what can/should be done in the future. The approach also considers how these stresses may change in the future and what capacity exists to deal with the current stress and future changing conditions (Smit and Pilifosova, 2003; Ford and Smit, 2004).

The participatory vulnerability approach can be utilized to identify the current exposures that Inuit youth have to face in their lives and to assess the current adaptive strategies and capacity, highlighting the role of individuals, the community and youth organizations. The identification and documentation of current vulnerability from the perspective of

Inuit youth will provide the basis for the assessment of future vulnerability. The results of the research will help to ensure the policy recommendations from Inuit youth, regarding their future adaptive capacity in the context of changing social and environmental conditions, are mainstreamed into existing policies and institutions.

2.5 Gaps in the Literature and Research Opportunities

Research on vulnerability and adaptation in the Artic has emphasized the need for increased community collaboration and participation. Inuit in the Canadian Arctic have identified environmental change as a concern facing their communities and have begun to voice their opinions with regards to participatory and collaborative research (McDonald et al., 1997; DSD, 2001). Researchers have utilized methods of participatory and community based research to study the human implications of climate change in collaboration with Arctic communities (Berkes, 2001; Fox, 2002; Ford, 2006(b); (c); Laidler, 2006; Pratley, 2006). Participatory research, in which communities facilitate research and play an important role in framing the research questions and seeking answers to these questions, has been used to approach the question of climate change and to fully engage Artic communities in research (Krupnik et al., 2002; NTI, 2005; Nickels et al., 2005; Ford, 2006(b); (c); Laidler, 2006). However, many of the participatory methods employed have been limited in that they have excluded members of Arctic communities most vulnerable to environment and other changes.

Community collaborators in Artic research have been largely elders, employees of the territorial and national government, members of Hunters and Trappers Organizations

(HTOs) and Regional Wildlife Organizations (RWOs), and representatives of Inuit organizations. Despite recognition by these individuals and groups that Inuit youth are facing a number of particular challenges as a result of social and environmental change, minimal effort has been made to include Inuit youth in adaptation and vulnerability research. Therefore, there is a need to characterize the vulnerability of Arctic communities, especially from the perspective of Inuit youth, to changing conditions, including climate change, and identify the policy responses that might be beneficial. This thesis responds to this research need and employs a conceptual model of vulnerability to characterize the ways in which Inuit youth are vulnerable to changing social and environmental conditions and identify means for strengthening adaptive capacity. This research will be undertaken in the community of Arctic Bay, Nunavut.

CHAPTER THREE: *Study Location*

This chapter provides the rationale for selecting Arctic Bay, Nunavut as the study location and presents a description of the main features of Arctic Bay. Recent transitions (social and environmental) that have occurred in the community are discussed to provide the context for the analysis of vulnerability. The chapter begins with the rational for conducting the study. The rationale is followed by a brief overview of Arctic Bay's history, geography, local government and economy. To conclude, a description of current programs and policies (local, regional, and national) targeting Inuit youth is presented.

3.1 Rationale for Conducting the Study in Arctic Bay, Nunavut

Nunavut was selected as the region of study due to previous research conducted in the territory that identified the ability of Inuit youth to adapt to changing conditions as a concern (Pratley, 2005; Nickels et al., 2005; Ford, 20006a; 2006b). The researcher's personal background living and working in Nunavut was also of significance. The researcher has lived in the communities of Pangnirtung and Iqaluit since 1989 and as a result has extensive knowledge of the culture and history of Inuit. The researcher also has basic language skills in the dialect spoken by Inuit in north-eastern Baffin Island.

Arctic Bay, Nunavut (figure 3.1) is located on north-east Baffin Island (figure 3.2) and was chosen as the study location for multiple reasons.

Figure 3.1: Arctic Bay, Nunavut February 2007

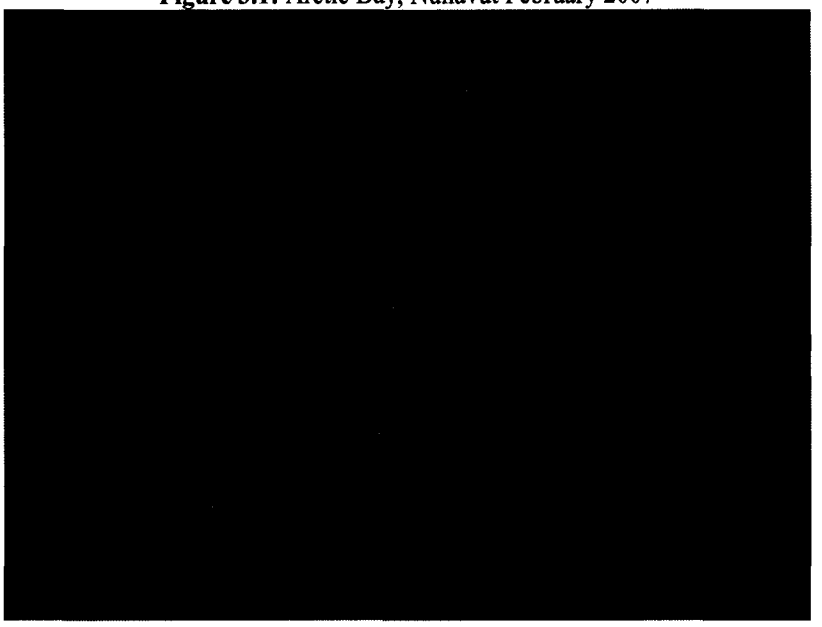
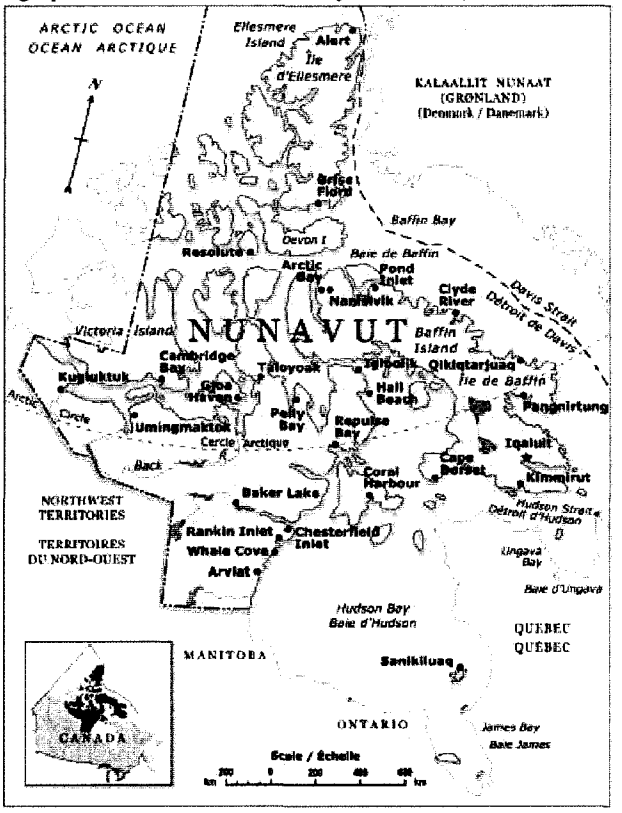


Figure 3.2: The geographical location of Arctic Bay, Nunavut (Natural Resources Canada, 2007)



Of primary importance, previous work conducted by colleagues (University of Guelph Global Environmental Change Group researchers: Erin Pratley, James Ford, and Johanna Wandel) indicated that the vulnerability and adaptive capacity of Inuit youth was of great concern to Arctic Bay residents. The fieldwork conducted by these colleagues resulted in a level of trust and respect between the University of Guelph and the residents of Arctic Bay. Positive experiences working with researchers from the University of Guelph in the past eased the transition of the researcher into the community during the collection of primary data.

3.2 History of Settlement

Traditionally, Inuit family groups had nomadic camps in the vicinity of present day Arctic Bay due to favorable weather and hunting conditions in the Admiralty Inlet area (Douglas, 1994; Damas, 2002). A temporary outpost was established by the Hudson's Bay Company (HBC) in 1926 (Freeman, 1976), however a permanent post wasn't established until 1936 (Douglas, 1994). Inuit would gather at the permanent HBC post, which was located at the sheltered northern end of the bay, in the late summer when the annual supply of trade goods arrived via sealift (Douglas, 1994; Damas, 2002). In 1942, the Department of Transportation set up a weather station in Arctic Bay providing permanent employment to a number of families living year round in the area.

In the 1950s, the government of Canada began to encourage settlement in the area. Inuit were attracted to Arctic Bay by benefits, including the potential for wage employment, kinship ties, access to welfare and health facilities (Damas, 2002). In 1959 an existing

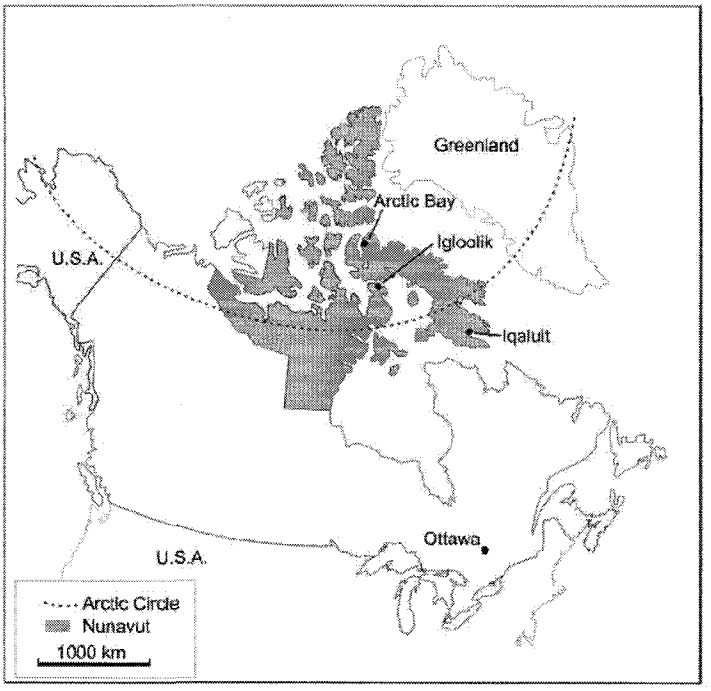
building was adapted to serve as a school for a small group of students, but the teacher was moved elsewhere and schooling was temporarily discontinued (Douglas, 1994). A permanent school was built in 1962 (NYC, 2007), an Anglican church followed in 1965 (Douglas, 1994) and a community council and housing association was established in 1967 (Douglas, 1994). Although the population of Arctic Bay did increase in the 1960s, many Inuit preferred to live in camps within walking distance of the settlement (Douglas, 1994). Pressure on families to become permanent community residents persisted in the 1970s. Representatives of the federal government visited Inuit who still lived in camps outside of Arctic Bay and recommended they move into the community and enroll their children in school (Douglas, 1994). Eleven houses were built in Arctic Bay to encourage settlement (Damas, 2002). Oil exploration by Pan Arctic Oil and the development of the lead-zinc mine in Nanisivik, approximately 32km from Arctic bay, in the late 1970s also contributed to the development of Arctic Bay (Brubacher and Associates, 2002; NYC, 2007). Families were attracted to the community as result of the number of employment opportunities and services provided, in part, by the mining company. Today, despite permanent residency in approximately 190 private dwellings, traditional living arrangements still play an important role in the lives of the Inuit located in Arctic Bay; one outpost camp still operates in the area (NYC, 2007).

3.3 Location and Climate

The Canadian Arctic is divided into four indigenous regions settled by comprehensive land claim agreements: (1) James Bay and Northern Quebec Agreement (*Nov. 11, 1975*), Nunavik; (2) Inuvialuit Final Agreement (*June 5, 1984*), Inuvialuit Settlement Region; (3) Nunavut Land Claim Agreement (*May 24, 1993*), Nunavut; and (4) Labrador Final

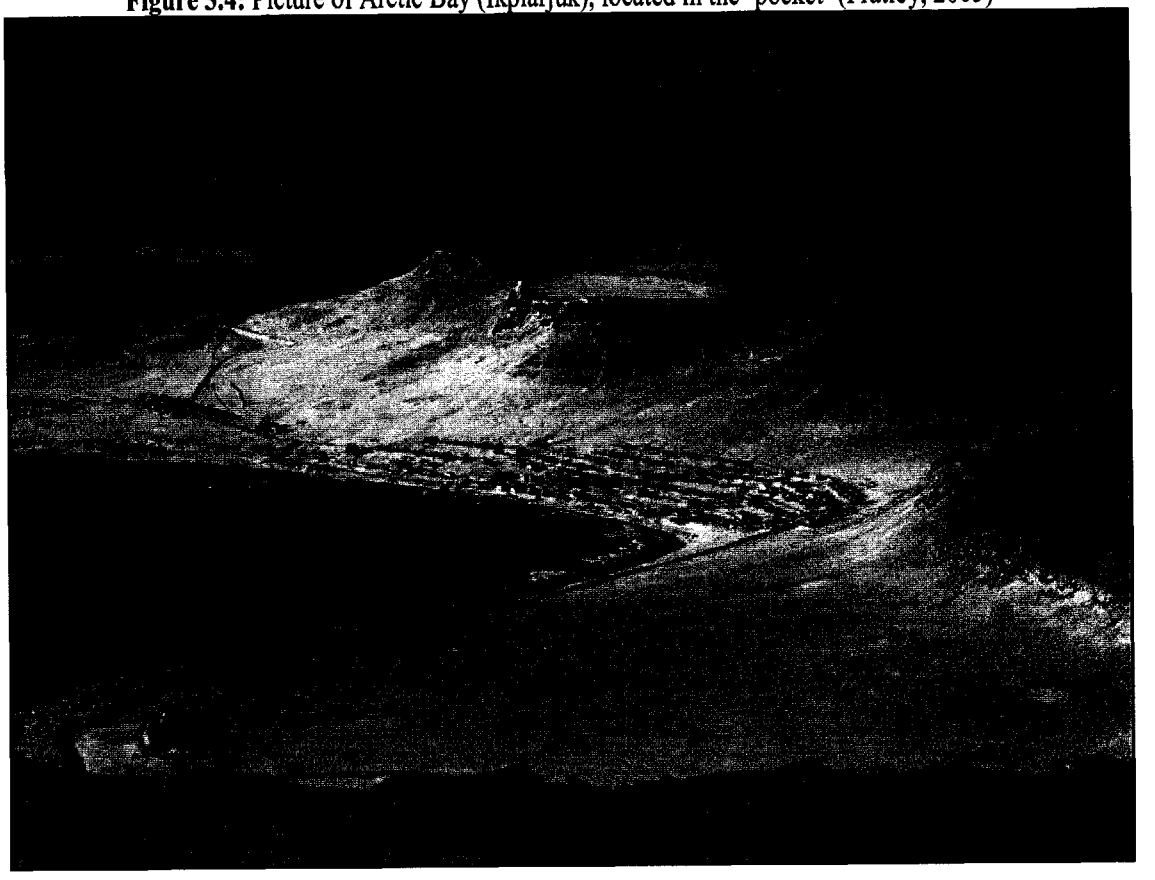
Agreement (*May 26, 2004*), Nunatsiavut (ITK, 2006). Arctic Bay is located in the north eastern part of Baffin Island in the Qikiqtaaluk Region of Nunavut; approximately 700 kilometers north of the Arctic Circle (figure 3.3).

Figure 3.3: The geographical location of Arctic Bay relative to the Arctic Circle (NRC, 2007)



The geography of Arctic Bay is characterized by the high hills that surround the land-locked bay (figure 3.4). This geographical characteristic prompted the name Ikpiarjuk, which means 'pocket' in Inuktitut (the language of the Nunavut Inuit). The community itself sits on a low gravel beach near the water on the northern shore of Adams Sound, off Admiralty Inlet.

Figure 3.4: Picture of Arctic Bay (Ikpiarjuk), located in the 'pocket' (Pratley, 2005)



The annual snowfall in Arctic Bay is approximately 72 centimeters and the annual rainfall is 5 centimeters (figure 3.5). Arctic Bay is classified as a Polar Desert, in January temperatures range between a low of -34 C and a high of -26 C. In July, the temperatures range between a low of 2 C to a high of 10 C (NYC, 2007).

Figure 3.6: Average weather condition readings covering rain, average maximum daily temperature and average minimum temperature (BBC Weather, 2006)

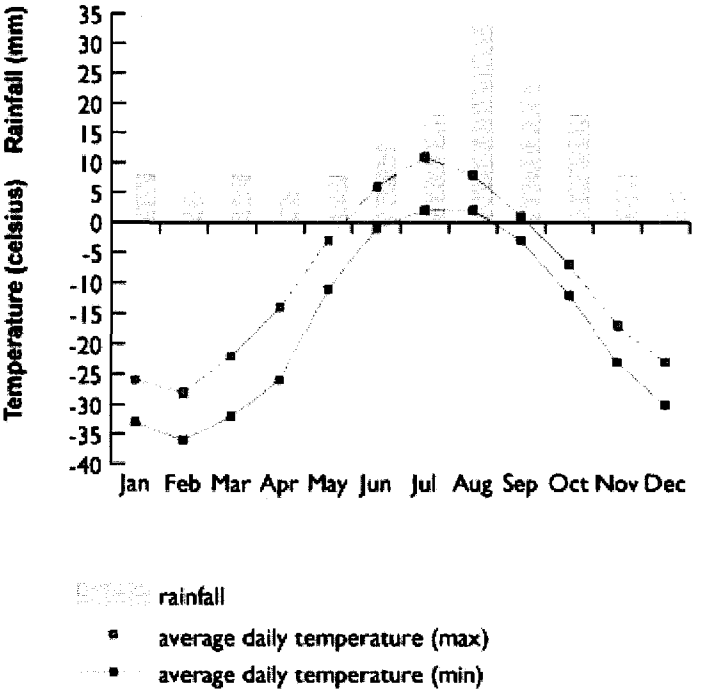
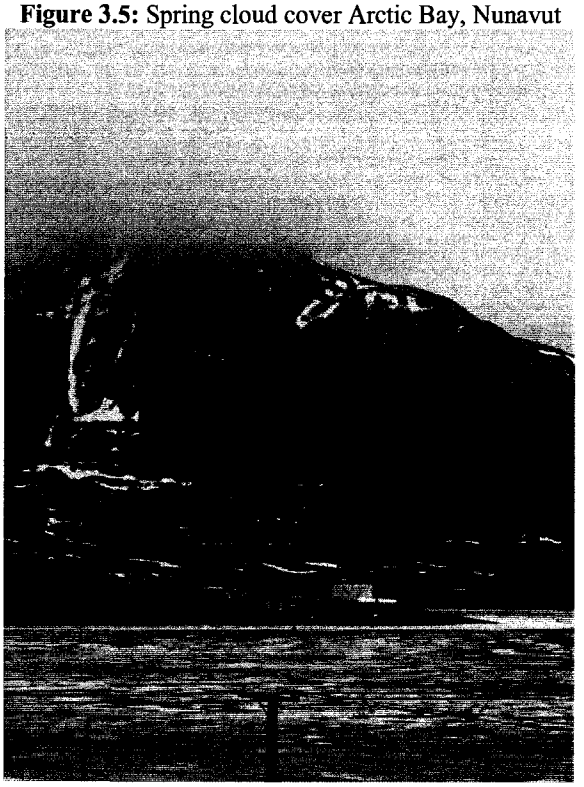
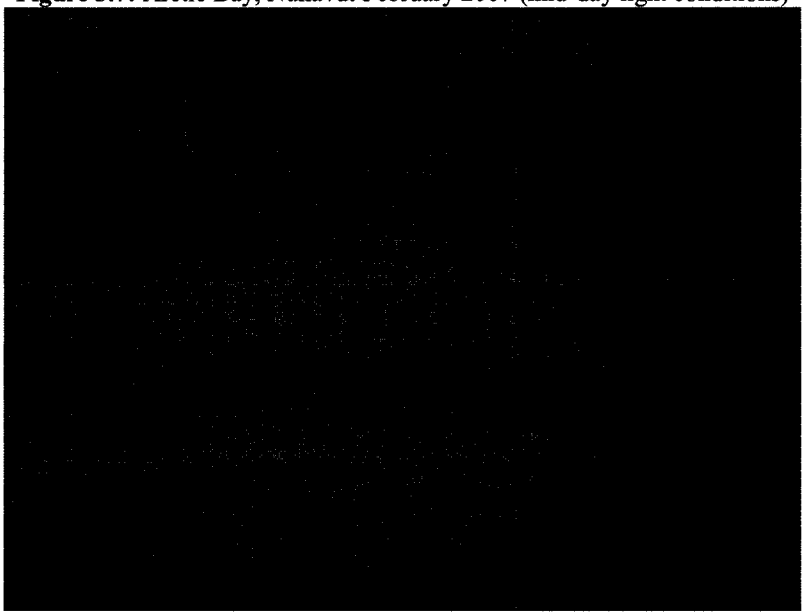


Figure 3.5: Spring cloud cover Arctic Bay, Nunavut



The community experiences 24-hour day daylight between May and August, and round the clock darkness between November and January (Environment Canada, 2008).

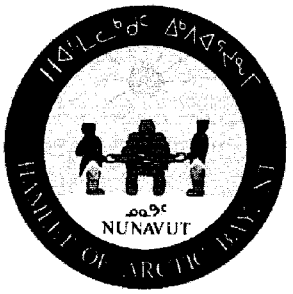
Figure 3.7: Arctic Bay, Nunavut February 2007 (mid-day light conditions)



3.4 Local Government and Population Demographics

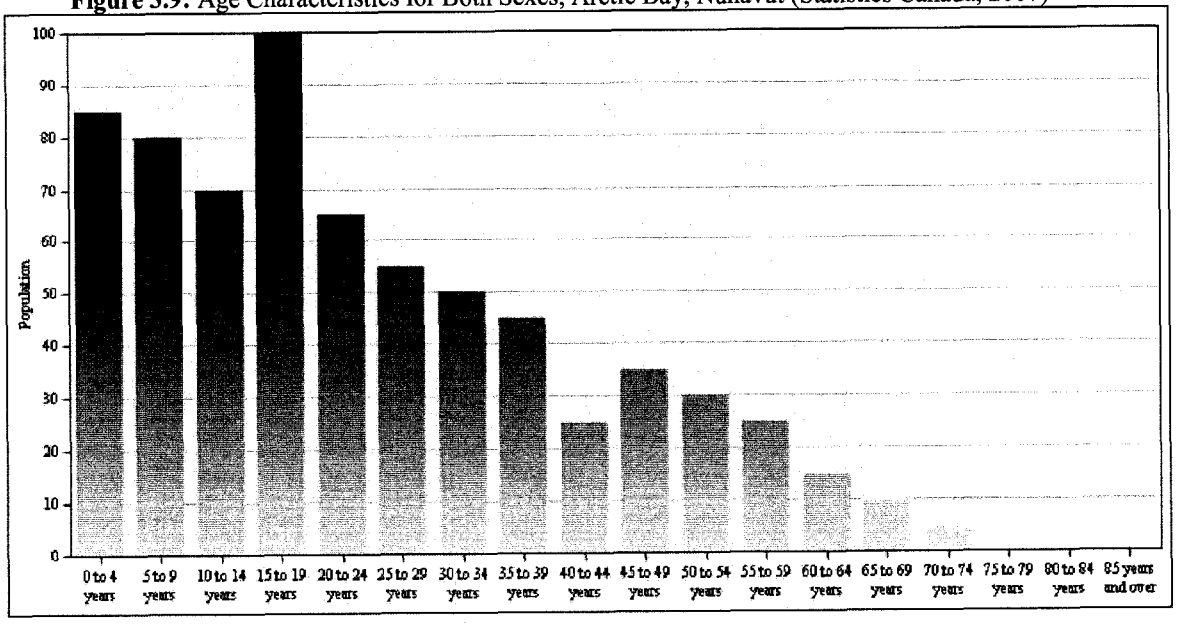
Arctic Bay was incorporated as a community hamlet (figure 3.8) in 1976, as part of the Northwest Territories and again in 1999 as part of the Territory of Nunavut (Statistics Canada, 2001).

Figure 3.8: Hamlet of Arctic Bay Logo



The population of Arctic Bay is 690 (Census, 2006), 93% of whom are Inuit, and the predominant languages are Inuktitut and English. According to the Nunavut community profiles census (2001), younger generation community members (under the age of 25), consist of approximately 55% of the population. Figure 3.9 provides a breakdown of Arctic Bay's population by age.

Figure 3.9: Age Characteristics for Both Sexes, Arctic Bay, Nunavut (Statistics Canada, 2007)



3.5 Transportation

The Nunavut transportation system has four main functions: (1) transporting people between communities in Nunavut, as well as to places outside the territory; (2) transportation to harvest local resources such as berries, fish, marine mammals and caribou; (3) exporting minerals and importing the equipment and supplies required for mining; and (4) shipping consumer goods and foodstuffs from southern Canada to retail stores (MSN Encarta, 2007). Perishable foodstuffs are shipped by air, while

nonperishable items can be transported by either air or supply ships. Consistent with the rest of Nunavut there are three methods of transportation in Arctic Bay: (1) air; (2) marine/freshwater; and (3) surface (ski-doo, all terrain vehicle, car, etc.)

Air:

First Air provides air service to Arctic Bay through the airport at Nanisivik with scheduled flights three times a week. The Nanisivik airport has the capacity to land a regional jet however there has been no jet service since the closure of the lead-zinc mine in 2002. With the exception of two communities, Bathurst Inlet and Umingmaktok, every community in Nunavut is served by a Transport Canada certified or registered airport (Kunuk et al., 2003). There are also several special purpose or private airstrips developed to serve the resource industry and national military interests such as Eureka and Alert (Kunuk et al., 2003).

Marine/Freshwater:

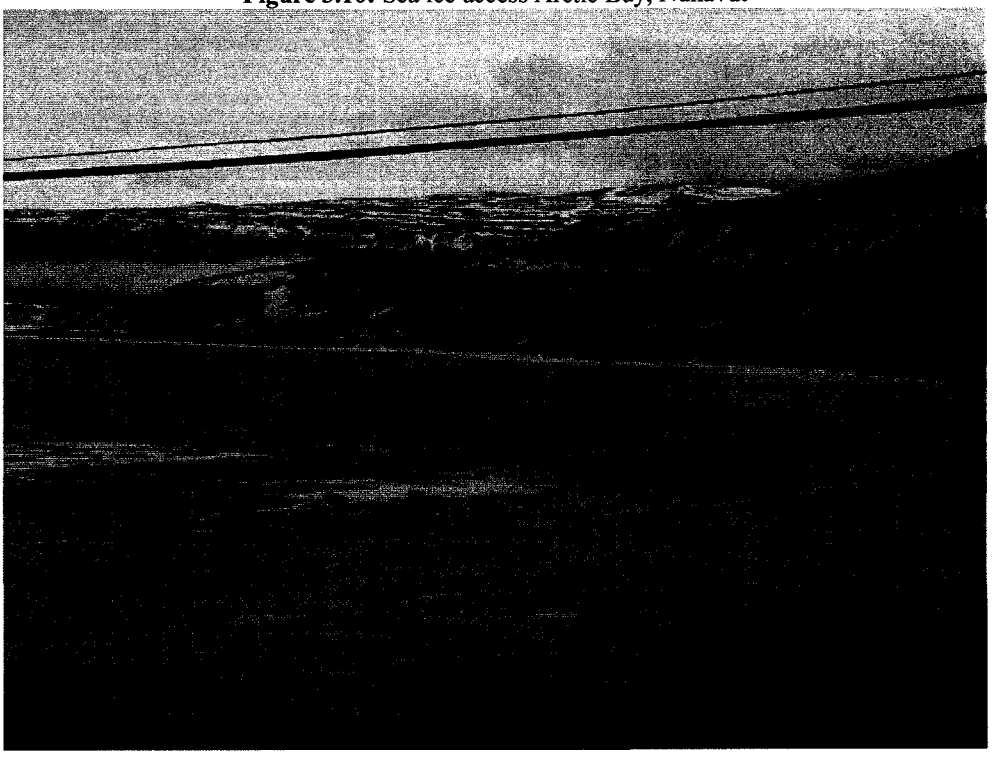
Personal marine related activities and services are critical to the residents of Arctic Bay. Community members depend on summer open water access for their well-being, livelihood, regional links, as well as for re-supply of goods and materials from the south via sealift (Kunuk et. al., 2003). Sealift refers to the re-supply of isolated communities with fuel, building materials, foodstuffs, vehicles, and other goods (Wikipedia, 2007). This is the most common method of transporting supplies in Nunavut due to the lower cost and larger capacity of ships and barges in comparison to aircrafts. Eastern Arctic Sealift is the major shipping operator in Nunavut (Kunuk et al., 2003). An annual

occurrence in Arctic Bay; the sealift arrives between July and September, when the sea is ice free. Arctic Bay, like most communities in Nunavut, does not have a port or cranes to unload the supplies so the ship is grounded and supplies are removed by forklift truck (Wikipedia, 2007). Lack of proper dock facilities impacts the efficiency of sealift and increases the risk of losses in terms of damages to community goods (Kunuk et al., 2003).

Surface:

Ground transportation in and out of the community is limited to snowmobiles and all terrain vehicles (ATV). For example, Arctic Bay is connected to Igloolik and Pond Inlet, by snow and ice trails in the spring and winter (figure 3.10).

Figure 3.10: Sea ice access Arctic Bay, Nunavut



There is one local access road (approximately 5km) to provide access to Victor Bay, a nearby hunting and camping site. Other areas, including recreational and historical sites, local resources, river portages and open water, are accessible by trails. Arctic Bay is also the only community in Nunavut linked to another community via a regional road connection. The dirt road linking Arctic Bay to Nanisivik is approximately 32km (Brubacher and Associates, 2002).

3.6 Infrastructure

Infrastructure has been defined as, "the basic facilities, services and installations needed for the functioning of a community or society" (Pickett, 2000). This includes built infrastructures (buildings, utilities and trail systems) and natural infrastructure (features of the natural environment which support built infrastructure used by the community including a community's water supply, sewage lagoon and landfill). Table 3.1 outlines selected built and natural infrastructure identified by members of NYC as important for the functioning of the community. Consist with youth-led participatory action research all aspects of the research process, such as the identification of infrastructure, were conducted in a manner to ensure primary relevance to Inuit youth.

Table 3.1: Outline of Selected Infrastructure in Arctic Bay

TYPE OF INFRASTRUCUTRE	DESCRIPTION
Community Buildings	• Community hall • Arena • Inuujaq School • Nunavut Arctic College • Health centre • Hamlet office • Culture Centre and Shop • Mental Health Office • Radio station • Fire hall
Private Buildings	• Northern Store • Co-op Store • Anglican Church • Gas pump/station • RCMP building • Hotel • Kiggavik Bed and Breakfast
Houses	• 190 private dwellings (Statistics Canada, 2006)
Public Utilities	• Water Supply • Water Delivery • Solid Waste Disposal • Sewage Disposal • Electricity
Communication	• Telephone • Internet
Transportation	• Roads • Traditional land, ice and sea routes

Figure 3.11: Example of local infrastructure February 2007 Arctic Bay, Nunavut

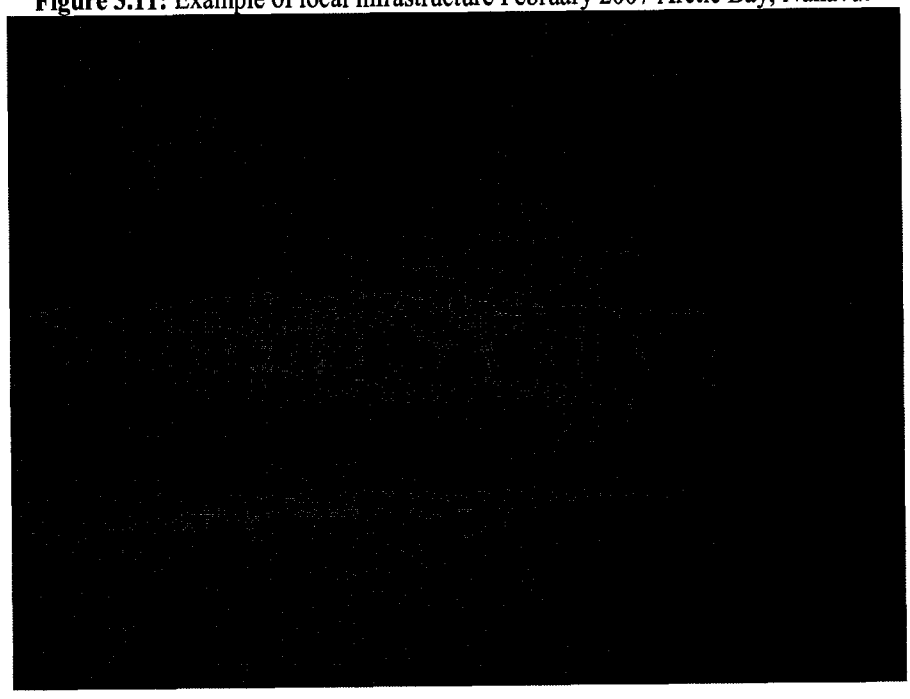


Figure 3.12: Example of local infrastructure – Nunavut Arctic College Arctic Bay, Nunavut

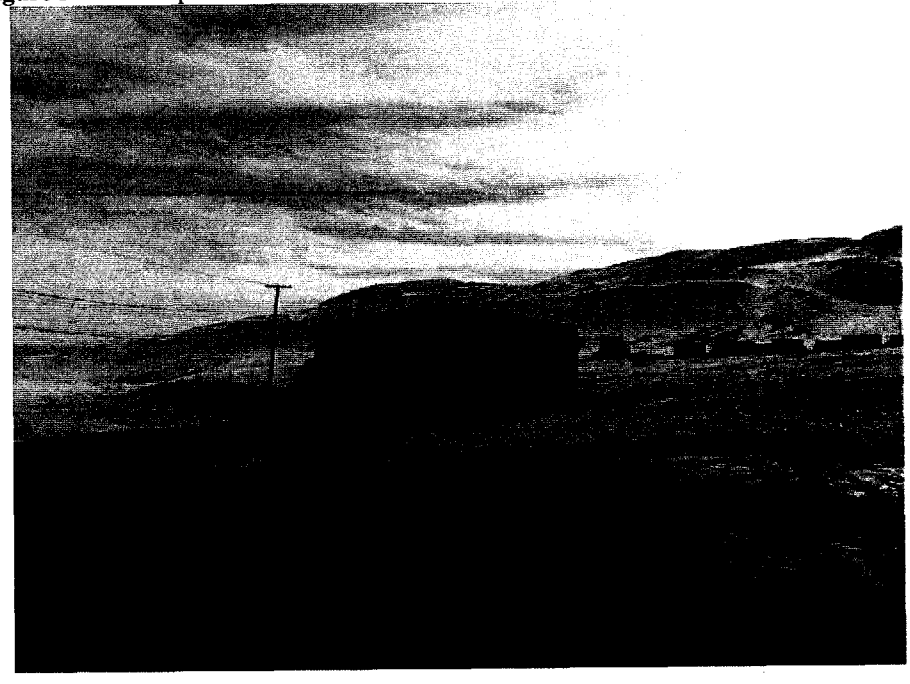


Figure 3.13: Example of local infrastructure – Inuujaq School Arctic Bay, Nunavut

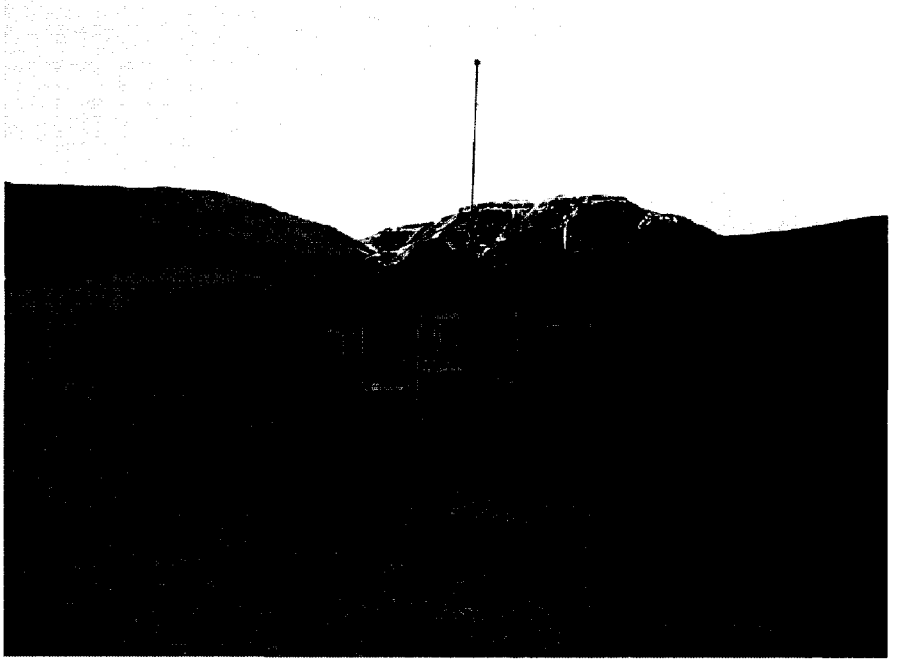
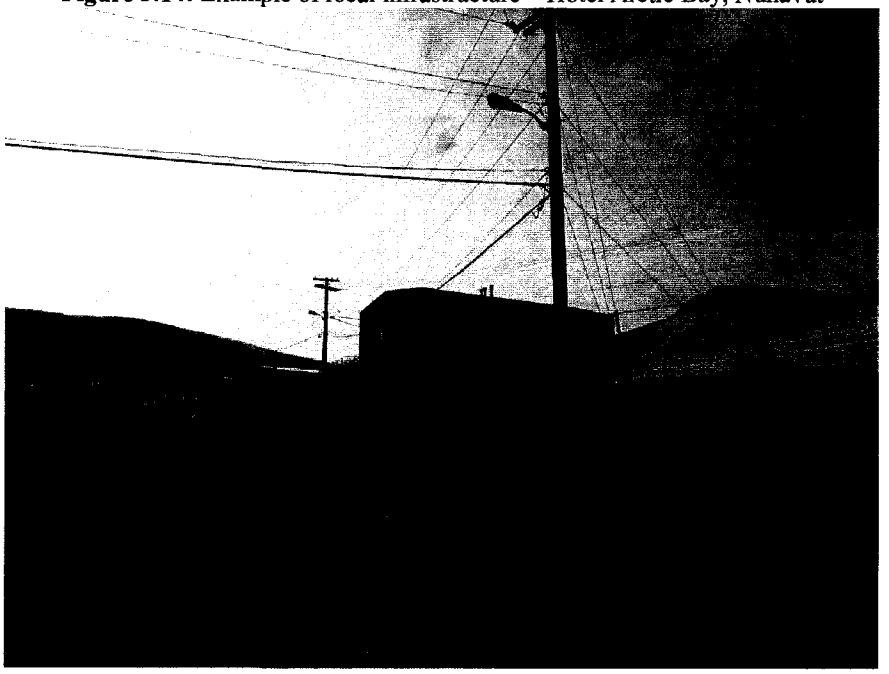


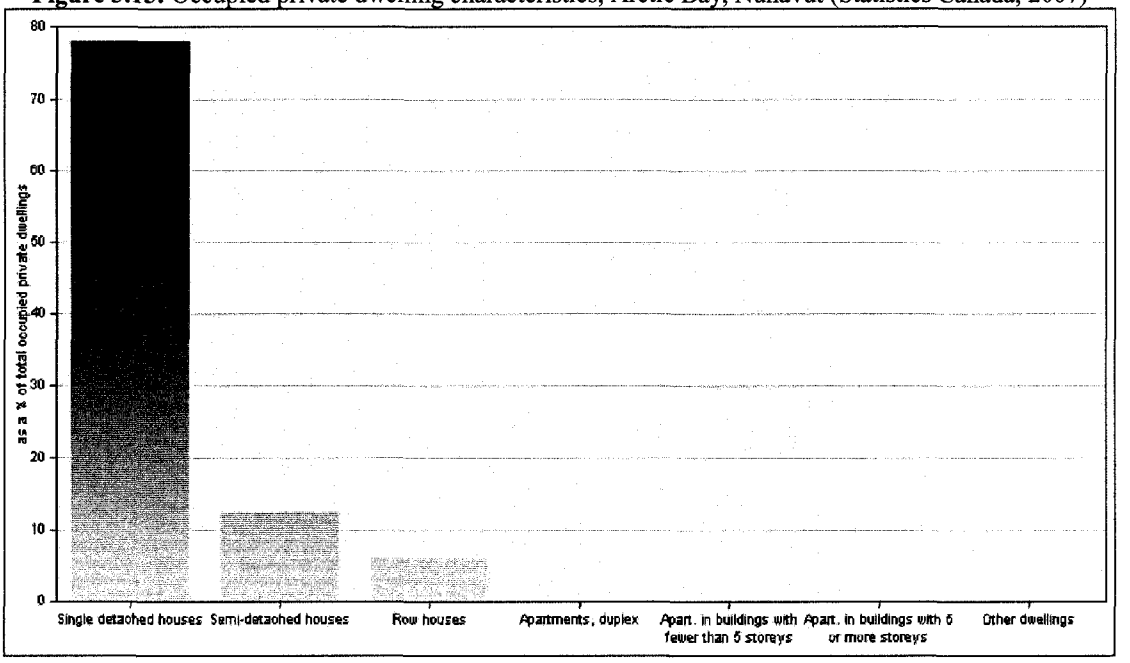
Figure 3.14: Example of local infrastructure – Hotel Arctic Bay, Nunavut



The quantity, type and condition of infrastructure available in Arctic Bay can be used as a socio-economic indicator of health and community well being. According to NTI, poor

quality, overcrowded homes are contributing to the Territory's high rates of tuberculosis, respiratory tract infections and suicide (NTI, 2006). Overcrowded houses have also been identified as a contributing factor in low student test scores and poor at work performance (NTI, 2006). The average household size in Arctic Bay is 4.3 (Statistics Canada, 2007).

Figure 3.15: Occupied private dwelling characteristics, Arctic Bay, Nunavut (Statistics Canada, 2007)



In an attempt to overcome the housing crisis in Nunavut communities, the Government of Nunavut invests ten per cent of its annual budget to public housing (NTI, 2006). However, the cost of operating and maintaining existing homes ($19,800 annually per unit) limits the number of new units constructed, less than 100 units are built each year (NHC, 2004). The Government of Nunavut currently maintains 3,600 public homes, 25% of which are over 25 years old (NTI, 2006). While this is not old by southern standards given Arctic Bay's climate and current building codes most homes 25 years or older are

in need of replacement or major repair. Approximately 31.3 % of occupied private dwellings in Arctic Bay require restoration (Census, 2006).

Figure 3.16: Example of infrastructure in need of repair Arctic Bay, Nunavut

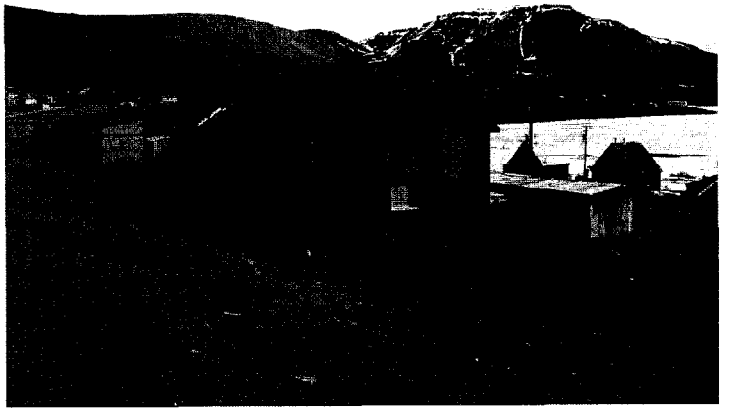
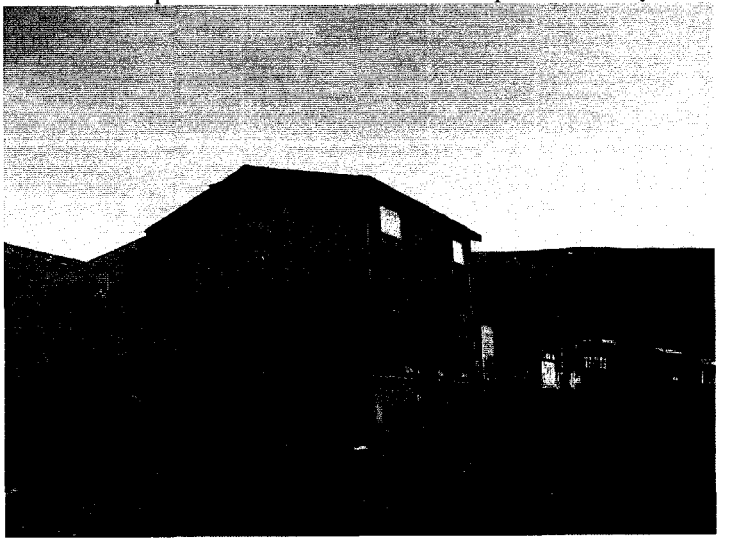


Figure 3.17: Example of infrastructure in need of repair Arctic Bay, Nunavut.



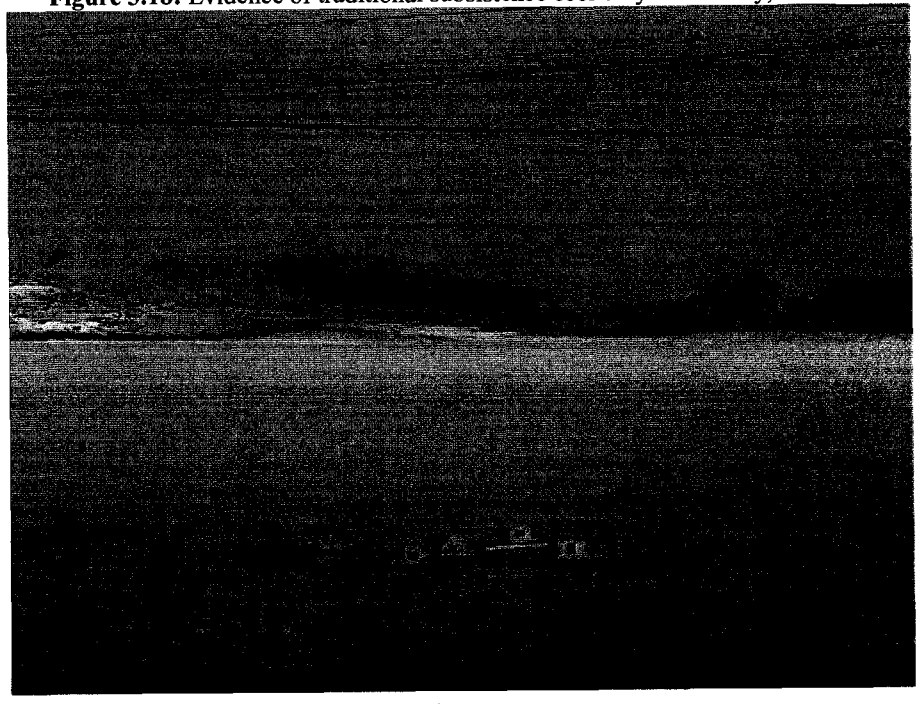
Existing infrastructure is likely to deteriorate further with increasing pressure from a growing population (municipal facilities as well as the stock of housing in Arctic Bay is not designed to meet population demands) and global climate change which will bring more frequent and intense weather. Buildings, roads, and the airport in Arctic Bay were

not built to a standard that could sustain further environmental pressure (Clinton and Vail, 2005).

3.7 Local Economy

The community has expanded dramatically since the 1960s and the economy has shifted from subsistence based, to a mixed economy where both waged labor and harvesting activities assume an important role (figure 3.18) (Damas, 2002; Pratley, 2005; Ford et al., 2006).

Figure 3.18: Evidence of traditional subsistence economy Arctic Bay, Nunavut



In 2000, the average adult earned $21 270 (Census, 2001), with government transfers and other non-earning monies accounting for approximately 29% of income. The unemployment rate was 21.7% in 2001, with almost half of those unemployed stating that the lack of full time jobs was the reason for being unemployed (Census, 2001).

3.8 Inuit Youth - Current Community Context

Approximately half the population of Arctic Bay is under the age of 25. Inuit youth in Arctic Bay are stressed by one or more of the following circumstances: the complexity of straddling two cultures; pressures associated with the need to enter the wage economy in a community with limited job opportunities; high levels of food insecurity; difficulty completing high school and responsibilities related to starting a family at very young age (CLEY, 2003). This combination of challenges has been found to have a negative impact on self-esteem (CLEY, 2003), which is evident in the high rates of suicide (Hicks, 2007).

3.8.1 Inuit Youth Related Programs and Services

Inuit youth related programs and services operate at the international, national, and local level.

International:

Working with support from the Inuit Circumpolar Conference (ICC)[4] the Inuit Circumpolar Youth Council (ICYC) strengthens unity amongst Inuit youth across the Inuit Circumpolar Region (Canada, Alaska, Russia and Greenland). The ICYC promotes the rights and interests of Inuit youth and advocates for the implementation of policies that protect language, traditional knowledge and the Arctic environment. The ICYC

[4] Founded in 1977, ICC is an international non-government organization representing approximately 150,000 Inuit in Alaska, Canada, Greenland and Chukotka (Russia). The principal goals of ICC are, therefore, to: strengthen unity among Inuit of the circumpolar region; promote Inuit rights and interests on an international level; develop and encourage long-term policies that safeguard the Arctic environment; and seek full and active partnership in the political, economic, and social development of circumpolar regions.

hosted the 1st Inuit Circumpolar Youth Symposium on the Inuit Language in Iqaluit, Nunavut on August 15-19, 2005. The Symposium brought together 20 diverse Inuit youth delegates (hunters, artists, students, leaders, and teachers representing Alaska, Greenland and Canada) to discuss the language issues concerning Inuit youth.

National:

The National Inuit Youth Council (NIYC) was formed at the first National Inuit Youth Summit, in Kuujjuaq, Quebec in 1994. The NIYC represents Inuit who are under the age of 30 in all 53 Inuit communities in the four Inuit land claim regions of Canada (NIYC, 2007). The NIYC works with elders and other partners to preserve and strengthen the Inuit language and culture and increase the opportunities available to young Inuit so that they are able to attain their dreams and visions (NIYC, 2007). The organization is composed of youth coordinators and youth representatives from each of the four Inuit regions across Canada (Nunatsiavut, Nunavik, Nunavut and the Inuvialuit Settlement Region) and is led by a nationally elected President in collaboration with the ITK Youth Coordinator. With support from ICYC and ITK the NIYC manages a number of projects that focus on the resiliency of Inuit youth. For example, the Inuusiqatsiarniq project encourages and supports life and well-being in Inuit communities by providing information, tools, resources, and assistance for national policy development and grassroots action.

Regional:

The Government of Nunavut, through the Department of Culture, Language, Education and Youth (CLEY), provides a range of programs and services to support the needs of Inuit youth across Nunavut. Nunavut Youth Consulting is a non-profit youth organization working to make Arctic Bay, Nunavut and the rest of the world a better place to live. Maukkuktuniat is the Hamlet supported youth group. The president of Maukkuktuniat sits on the community council. Arctic Bay's two youth groups, both receive financial and in-kind support from the department of CLEY to develop and carry out local initiatives. Table 3.2 summarizes Inuit youth related programs and services organized and implemented in Arctic Bay since 2006.

Table 3.2: Arctic Bay youth activities 2006-2008

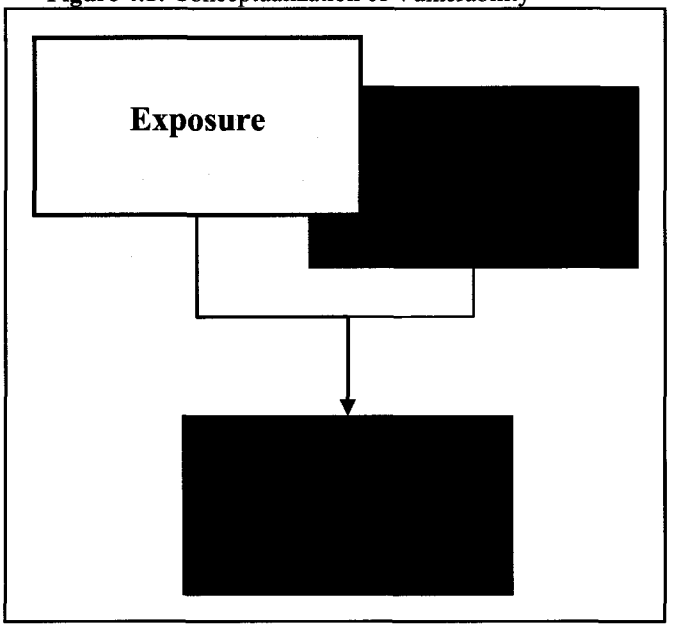
DATE	ACTIVITY	HOST ORGANIZATION	DESCRIPTION
2006	Wilderness Survival Training	Nunavut Arctic College (NAC)	To improve understanding of traveling and camping on the land and sea ice
2006/2007	Better Attendance Management (BAM)	RCMP/Inuujaq School	To increase attendance by 10%
2006/2007	Breakfast Program	Inuujaq School	To decrease local food insecurity
2006/2007	Skills Canada	NYC/Inuujaq School	To increase the skill set of Inuit youth in Arctic Bay and to gain travel experience
September 2006 – February 2007	5 Year Nunavut Economic Development Plan	NYC	To develop research skills
February 2007 – April 2008	Youth-led Research: Vulnerability Assessment	NYC/University of Guelph	To develop research and transferable skills and communicate the concerns and recommendations of Inuit youth in Arctic Bay regarding social and environmental change
Winter 2007	Library Reading Program	RCMP/Wellness Committee/Inuujaq School	To improve literacy
Winter 2007	Carving and Jewelry Making Program	Inuujaq School	To increase attendance
Winter 2007	Child Care	Health Centre	Babysitting course for grade six students.
March 2007	Recovery Foundation	NYC/NAC/Wellness	Suicide prevention

	Workshops	Committee	workshop.
March 2007	RESOLVE IT Conference - Ottawa	NYC	Two youth attended
March 2007	NIYC Annual Meeting – Baker Lake	NIYC	Two youth attended
March 2007	First Nations Symposium on Economic Development – Saskatoon		One youth attended
March 2007	Whitestone Suicide Prevention Strategy – Iqaluit	NYC	Two youth attended and then lead a workshop in Arctic Bay when they returned.
June 2007	Narwhal Hunting Training	Hunter's and Trappers Organization (HTO)	To improve hunting skills
June 2007	Jordin Tootoo Role Model Tour		To increase self-esteem
September 2007	Place and Naming Project	NYC/Carleton University	To gain research transferable skills, learn about Inuit history, travel and interact on the land with elders and experienced hunters
Fall 2007	First Aid	NAC/Health Centre/Cadets	Enhance the skill set of Inuit youth, preventative care
Ongoing	Gospel Singing Group	Aqsarniq	To increase self-esteem
Ongoing	Organized Sports	Hamlet of Arctic Bay – Recreation Committee	Hockey and Soccer
Ongoing	Aboriginal Head Start Program	Geela Reid	Government of Canada program based on caring, creativity and pride following from the knowledge of their traditional community beliefs, within a holistic and safe environment.
Ongoing	Community Access Program	NAC/NYC	Access to the internet, a place for Inuit youth to gather
Ongoing	Maukkuktuniat		Communicates the concerns of Inuit youth to the town council
Ongoing	HIV Awareness	NYC	Public education and preventive activities
Ongoing	Inuit Values and Beliefs Project	NYC	Enhance cultural awareness and understanding
Ongoing	Christmas Games	Maukkuktuniat/NYC	Youth games night in December 2007

NYC facilitates many of the activities presented in table 3.2 with the goal of developing their and their peer's, unique physical, emotional, intellectual, spiritual, and creative potential. This is consistent with the vision and values of the comprehensive early childhood development plan for Nunavut. Positive outcomes associated with participating in organized activities in Arctic Bay, include: academic achievement, school participation and completion, greater overall health and well-being, and lowered rates of drug, alcohol and tobacco abuse.

a system is a reflection of both the exposure to hazardous conditions and the ability to adapt to, or cope with, the exposure (figure 4.1) (Adger and Kelly, 1999; O'Brien et al., 2004). Exposure is dependent on both the characteristics and attributes of the system and is a property of a system relative to a particular stimulus (Downing, 2003; Smit and Pilifosova, 2003). The functional relationship between exposure and adaptive capacity is not defined since vulnerability is context specific and dynamic.

Figure 4.1: Conceptualization of Vulnerability



A practical application of this conceptualization of vulnerability is a community-based study. A community based study utilizes the starting point approach to assess vulnerability. Community based vulnerability assessments require the "active involvement of stakeholders, considerable effort to ensure legitimacy, information collection on community relevant phenomena and processes, the integration of information from multiple sources, and the engagement of local decision makers" (Smit and Wandel, 206:288). This ensures that changes (e.g. political, cultural, and economic),

CHAPTER FOUR: *Methodology*

This chapter describes the methodological approach used to assess the vulnerability of Inuit youth in Arctic Bay to social and environmental change. Two research trips were made during 2007 to Arctic Bay with a third visit planned for 2008. The first trip, a pre-research visit lasting one week was made in February 2007 to consult with residents in the research planning and design. Following this initial visit, a second trip was made in April 2007. Five weeks were spent in Iqaluit, the capital and administrative centre for Nunavut and eight weeks in Arctic Bay where primary data collection took place. A third visit to the community is planned for 2008 to disseminate the findings of the research.

The chapter begins by describing the conceptual and operational frameworks on which the methodology was based. This is followed by a summary of the methods used for establishing research partnerships, collecting primary data, documenting participant observations, and disseminating the findings. Limitations of the methods are also highlighted.

4.1 Conceptual Framework

To assess vulnerability, from the perspective of Inuit youth in Arctic Bay, this research utilized a specific conceptualization of vulnerability. The conceptual framework that this research used draws upon the bodies of scholarship that conceptualize vulnerability as being shaped by the complex interactions between humans and the physical environment and influenced by human and physical processes originating at different spatial-temporal scales (Turner et al., 2003; Smit and Wandel, 2006). In this approach, the vulnerability of

forces relevant to people, and adaptation strategies beyond those related to environmental change are addressed.

4.2 Operational Framework

The research assessed the vulnerability of Inuit youth in Arctic Bay, using the conceptualization of vulnerability, in an operational framework that was based on the theories and techniques of participatory action and youth-led research.

4.2.1 Participatory Action Research

The term participatory research was coined by North American and Scandinavian development workers in Tanzania in the early 1970s (Hall, 1992). It was intended to indicate that the research being conducted relied on local people's participation in the gathering of information about the community's problems and in the implementation of solutions (Park, 1999). It constituted a paradigm shift in their understanding of the research process involving local problems and requiring local solutions (Park, 1999). This was a significant departure from the way development workers typically operated (as outside experts with preconceived solutions to problems and predetermined social science based methodologies) but was not inconsistent with long-established social anthropology methods (Cornwall and Jewkes, 1995; Park, 1999).

An alternative research method is action research. Kurt Lewin first introduced the term action research in 1946 to denote a new approach toward social research (Susman and Evered, 1978). Lewin characterized action research as, "a comparative research on the

condition and effects of various forms of social action and research leading to social action (Lewin, 1946: 202-203; Susman and Evered, 1978: 587). In carrying out action research the practitioners and social scientists collaborate to find ways to bring about needed change (Susman and Evered, 1978). Lewin conceived this process as, "a spiral of steps, each of which is composed of a circle of planning, action, and fact finding about the result of the action (Lewin, 1946:206). For example, workshops should be conducted jointly by the practitioner and the social scientist with the purpose of training, researching, and producing action (Susman and Evered, 1978). It is also characterized by people learning with and from each other and the social conditions affecting them (Park, 1999).

A frequently quoted definition of action research is, "action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework" (Rapoport, 1970:499; Foster, 1972; Susman and Evered, 1978). Action research is driven by practical outcomes rather than theoretical understanding (Argyris and Schon, 1991; McTaggart, 1999; Park, 1999). In action research the people who are to benefit from the research participate in the research process from beginning to end (Park, 1999). Participatory action research is a more specific form of action research (McTaggart, 1999; Park, 1999).

Participatory action research emerged in response to the call for development, which incorporated the needs and opinions of local people (Maclure and Bassesy, 1991; Whyte,

1991; Park, 1999). Participatory action research is often defined with reference to its name, involving the following qualities (McTaggart, 1999):

1) *Participation:* Authentic commitment to the studied enhancement of a social practice by its practitioners, that is, participation in the action and the research.
2) *Action:* Wisely planned, deliberately implemented, and carefully studied research and participation in changes of practice.
3) *Research:* Carefully observed and theoretically informed participation action.

Participatory action research involves practitioners as both subjects and co-researchers and is based on the "proposition that casual interferences about the behavior of human beings are more likely to be valid and enactable when the human beings in question participate in the building and testing of them" (Argyris and Schon, 1991). Practitioners are involved in the research process from the design, data gathering and analysis, to final conclusions and actions arising out of the research (Whyte, 1991). The basic idea being that those who supply the data have their own ideas, models or frameworks for attributing meaning and explanations to the world they experience (Elden and Levin, 1991).

Participatory action research aspires to create an environment in which participants give and get valid information, make free and informed choices (including the choice to participate), and generate internal commitment to the results of their inquiry (Argyris and Schon, 1991; McTaggart, 1999). It also aims to both generate knowledge and produce action (Park, 1999). Participatory action research provides new answers to the question:

who learns from the research? The answer in non-action, non-participatory research is clear, only the researcher or those who can extract meaning from research reports (largely other researchers) learn, not the 'subjects' (Elden and Levin, 1991). In contrast, participatory action research can be seen as a learning strategy for empowering participants and only secondarily as producing research (Elden and Levin, 1991).

According to Elden and Levin, participatory action research empowers in three ways. First, it empowers because of the specific insights, new understandings, and new possibilities that the participants discover in creating better explanations about their social world. Second, participants learn how to learn. Third, participatory action research can be liberating in that participants learn how to create new possibilities for action.

Three attributes distinguish participatory action research from conventional research strategies. First, participatory action research postulates *shared ownership* of the research (Maclure and Bassey, 1991). By involving community members in most or all aspects of the research process, participatory action research functions as a partnership, with decision making and control shared among all those having a stake in the outcome of research (Maclure and Bassey, 1991). Second, participatory action research is a method of *community based learning.* Through collaborative investigation or experimentation, accompanied by reflective dialogue, participating groups ideally can learn to critically analyze their own particular situations and problems and so be able to devise solutions (Grossi et al., 1983; Korten, 1983; Maclure and Bassey, 1991). Likewise, participatory action research enables professional researchers to gain insights that allow for

reformulations of research questions and more realistic interpretations of data (Maclure and Bassey, 1991). Through research, the roles of educator and learner become interchangeable (Maclure and Bassey, 1991). Third, participatory action research aims to stimulate *community initiated action* by instilling among participants a sense of immediacy and personal identification with the discovery and application of what they have learned (Maclure and Bassey, 1991).

In conventional research inappropriate recommendations have frequently followed from a failure to take account of local priorities, process, and perspectives (Cornwall and Jewkes, 1995). In comparison with conventional research, participatory action research involves different aspirations and practices with respect to the presentation of findings, the creation of public meanings of action and inquiry, and the concentration of effort and reflection for deliberate change during, not after, the acts of research (McTaggart 1999). The participatory action research process aims to achieve results of current benefit to the organization or community, as well as lead to a rethinking and restructuring of relations so that the impact of the process can carry into the future (Whyte et al., 1991).

Participatory action research recognizes that those people who spend their lives in a particular community get to know more about it and have more ways of making sense of their world than would be possible for an outsider to appreciate without in some way becoming an insider (Elden and Levin, 1991). Participatory action research also aims to involve various sectors of society, including young people, in assessing community changes and programs that affect their lives. It is not "token" involvement, but active

engagement where youth have real influence in decision-making (Hirsch et al., 2002). Increasingly, youth development initiatives, community organizations, and researchers are taking this new approach to research and evaluation (Checkoway, 2001; Hirsch et al., 2002). Programs are realizing that involving youth in evaluation and research about the programs in which they participate and the changes they are vulnerable to, serves multiple purposes (Hirsch et al., 2002). These purposes include (Checkoway, 2001):

1) Enhancing the individual development of youth and encouraging their active involvement in the decisions that affect their lives.
2) Contributing to organizational development and capacity building.
3) Providing youth with the opportunity to create real community change.

Finally, in the participatory action research genre, knowledge is not produced with a view to later incorporate it into practice as it is in other research, "knowledge production is embodied in the enactment of emerging understanding" (McTaggart, 1999).

4.2.2 Youth-led Research

Youth-led research encompasses the convergence of two broad theories: (1) the field of youth development, which represents an extension of youth development principals in research (table 4.1), and (2) dimensions of participatory action research that attempt to involve youth as researchers and evaluators (London, 2002). Together these two fields define "a region of theory and practice, which values both the rigor of the products of the inquiry and the empowerment processes experienced by youth participants" (London, 2002:2). Empowerment is achieved in youth-led research because youth are provided with tools (through training and practical experience) to identify issues, challenges, and

common goals for purposeful change and to direct the development of policies designed to serve their needs (London et al., 2003; Delgado, 2006).

Table 4.1: Youth development principles (Delgado, 2006)

PRINCIPLE
Ultimately increase the effectiveness and efficacy of youth programs and services.
Create an organizational and community climate conducive to civic involvement by youth by tapping their expertise.
Provide youth with meaningful learning opportunities that will result in competencies that can be translated to other spheres in their lives (Males, 1996).
Provide youth with meaningful opportunities to engage in dialogue among themselves and with adults about their perceptions of their social reality. There is a wide agreement that there must be a meaningful link between the inquiry, researchers, and the audience (Alcoff, 1994; Schwandt, 1996). This dialogue can result in new understandings pertaining to issues and possible solutions; it also can generate enthusiasm for the process of research by highlighting its worth and potential contribution to positive social change.

Since community change rarely happens quickly and maintaining the involvement of youth can be difficult, the limitations and challenges associated with youth-led research must be thoroughly understood before actively pursuing a youth-led research project. The potential limitations and possible techniques to minimize the negative outcomes are outlined in table 4.2. Many of these limitations are not particular to youth; they also apply to participatory action research in general.

Table 4.2: Limitations of youth-led research (Delgado, 2006)

LIMITATION	MINIMIZATION TECHNIQUE
Limited understanding of the broader world to draw policy conclusions	Find the balance between expecting and demanding too much and too little.
Difficulty sharing or handing over power to other youth	Identify power differentials and help youth recognize these situations and develop appropriate ways to address them.
Potentially difficult interviews	Address in a well-designed pre-research training program.
Safety	Inform community of the roles, responsibilities and risks of engaging in a research project.
Gender of the researcher	Pair male and female interviewers.
Question type and study foci	Address what might not be legitimate for a peer researcher to ask in an interview/focus group.
Language	Make sure peer researchers are bilingual.
Confidentiality	Address in a pre-research training course so that youth are prepared to see youth they have interviewed in social settings after completion of the project.
Respect	Communicate to the community the importance and legitimacy of the research youth are conducting.
Scientific merit	Minimize bias to assist in situations where the scientific merit of the work of youth is challenged.
Stress and fatigue	Devote 50% of time to formal activities and the remaining 50% for fun and entertainment.
Visual focused methods	Visual methods must be considered as part of a wide array of research methods that can be used when appropriate.

4.3 Empirical Methodological Process

The objectives of this research project were met through an empirical methodological process, which involved four distinct stages: research preparation; primary data collection; evaluation; and dissemination of knowledge and results.

4.3.1 Research Preparation

Research preparation is directly correlated to the degree of success of a youth-led action research project. Organizational and community support for Inuit youth to assume the role of researcher is required. The following sub-sections highlight the research preparation process utilized in this research.

4.3.1.1 Research Collaboration and Community Partnerships

Community partnerships were an essential part of this youth-led action research project. Stakeholders (local leaders, decision makers and community members, particularly Inuit youth) were an integral part of every stage of the research. The research process was also guided by input from ITK, NAC, NYC, and the Nunavut Research Institute (NRI).

Representatives of ITK were consulted in November 2006 to identify past research conducted in Nunavut and establish appropriate guidelines for engaging Arctic Bay in all stages of the project. During this meeting it was suggested that a pre-research visit to Arctic Bay take place prior to the development of the research proposal and scientific research license application. Following guidance from ITK, relevant organizations and community members (the Hunter's and Trapper' Association, Inuujaq School, Ron Elliott chairperson of NYC) were contacted via facsimile (Appendix 1), e-mail, and phone to discuss research opportunities in Arctic Bay and an appropriate time for the pre-research visit. Initial responses indicated early 2007 as the most appropriate time to conduct a pre-research visit.

Prior to the pre-research visit, a flyer was sent to relevant community organizations and members to introduce the university researcher and the proposed study (Appendix 2). Based on responses to the flyer, a guide was developed to ensure the concerns of community members were addressed in the proposed focus group and adult interviews (Appendix 3).

4.3.1.2 Pre-research Visit

A pre-research visit lasting one week was undertaken in February 2007 to consult with local people, specifically Inuit youth, in the research planning and design. During the pre-research visit an informal oral research agreement was established to clarify mutual expectations and commitments between the researcher and NYC. The discussion regarding this agreement set out the purpose of the research and mutual responsibilities including; the project design, data collection and management, analysis and interpretation, production of reports and dissemination of results. This level of community involvement was achieved due to the willingness and capacity of NYC and the community to share authority and responsibility of the research.

During the pre-research visit presentations were made to students enrolled in the NAC pre-trades program, the Nunavut Teachers Education Program (NTEP), as well as students in grades nine through twelve. In addition, the researcher met privately with teachers, the principal of Inuujaq School, RCMP officers, nurses, the director of the cultural centre, and the mayor and member of the legislative assembly. Input from Inuit youth and other community members was documented during these meetings and incorporated into the research plan. For example, since this research places particular emphasis on changes that relate to Inuit youth, potential categories of social and environmental changes were identified (table 4.3) during the pre-research visit. This table incorporates examples expressed by community partners (Inuujaq School, NAC, and NYC) and local stakeholders (the mayor, social worker, community economic

development officer, senior administrative officer) during the pre-research community consultation.

Table 4.3: Categories of community changes experienced by Inuit youth as determined during the pre-research visit (February, 2007)

CATEGORY	EXAMPLE
Society	Health, education, housing, sexuality, drug and alcohol abuse, suicide, population growth, travel opportunities, lack of infrastructure
Culture	Language, religion, kinship ties, preservation of traditional knowledge, employment skills, traditional and subsistence hunting
Economic Systems	Availability and type of employment, cost of living, tourism, market for indigenous art, sport hunting
Political Systems	Decentralization, poor representation, understanding of the land claim agreement, right to vote
Legal Systems	Devolution, human rights, legal authority to Arctic regions, legal representation, legal aid, the court circuit
Environmental Systems	Sea ice conditions, wind and weather patterns, snow accumulation, population and migration of subsistence species, precipitation, storm occurrence, ice fog

The categories identified during the pre-research visit were used to guide the selection of data collection methods. Beyond identifying these categories, the objectives of the pre-research visit were: to discuss the project; to identify those individuals and organizations particularly interested in the research; to establish the principal community contacts; to solicit feedback on the proposed research and to identify concerns; to communicate with potential interpreters; to discuss and define the operating procedures; and to identify what time was best for the main research visit.

During the pre-research visit these objectives were met and trust established by previous colleagues renewed. A report documenting the preparation, activities, and outcomes of the pre-research visit was developed (Appendix 4). The purpose of this report was to provide the researcher and NYC with a framework and checklist of topics and relevant issues to be covered during the field season. This report was a working document, with

changes made following additional consultation and requests from Inuit youth and other community members throughout the field season. Following protocol for conducting research in Nunavut the researcher submitted this report and a formal application to NRI for a scientific research license.

4.3.1.3 Scientific Research License

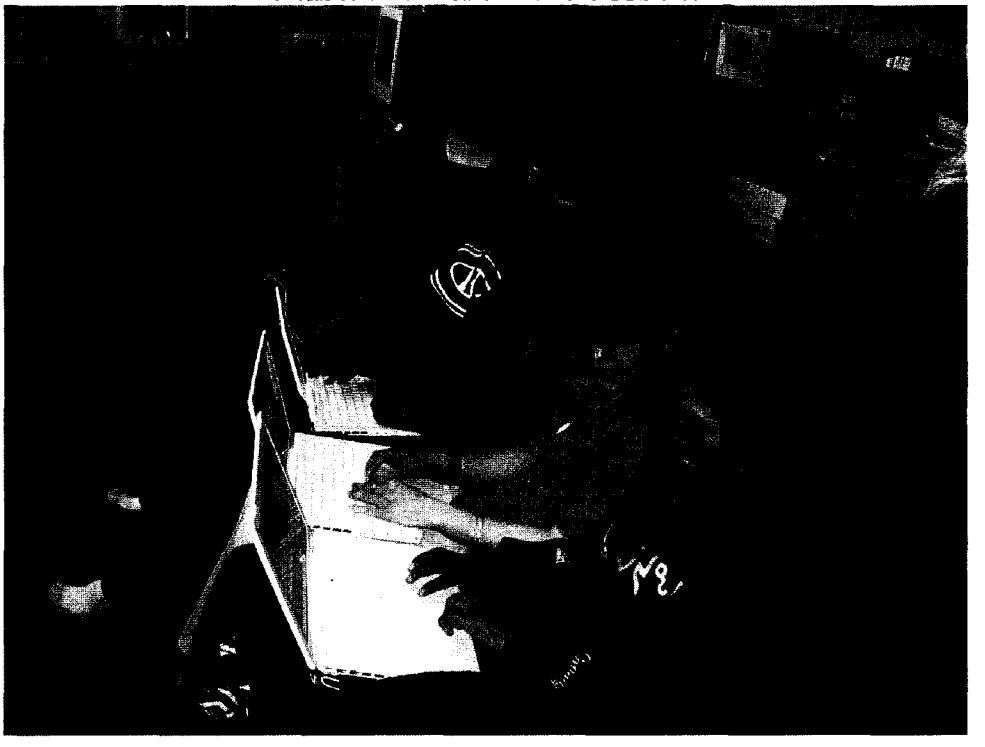
Researchers planning to work in Nunavut must obtain a Nunavut scientific research license. Licensing under the Nunavut Scientists Act is handled by the NRI in Iqaluit. The steps outlined by NRI for applying for a research license and fulfilled by researchers in this project include; community consultations, ethical approval from a recognized ethical review board, benefits from the project to the study community and inclusion of Inuit qaujimajatuqangit in the project. The research license was granted to the research project on April 10, 2007 permitting the research project to take place in Arctic Bay from April 2007 to March 2008 (refer to Research License Number: 0202907N-A).

4.3.1.4 Career Technology Studies Credit

Providing the right training and support to youth is essential to the success of youth involvement in research (Harvard Family Research Project, 2002) and to building adaptive capacity. As requested by Inuujaq School and the chairperson of NYC, this research project provided research skills training through the high school career technology studies credit program. The purpose of this course was to teach some of the skills necessary for doing social science research. Topics covered include; identifying a research question, establishing research objectives, conducting focus groups and

interviews, note taking, transcribing, and organizing and presenting data (Appendix 5). These skills will potentially be useful for future employment, volunteer and committee opportunities. Following completion of the CTS credit four students (figure 4.2) received formal accreditation in social science research methods (Appendix 6). Students must complete at least one CTS credit prior to graduation from Inuujaq School.

Figure 4.2: Students (Don Oyukuluk, Melissa Reid, Bruce Pauloosie and Mason Oyukuluk) who received a social science research methods CTS credit



4.3.1.5 Peer researcher Employment Opportunities

A peer researcher is defined as a young person who has assumed the specific role of researcher in a youth-led research project (Phillips et al., 2001). Four Inuit youth were hired as peer researchers, with each performing specific skills and tasks during the collection of primary data (table 4.6). These individuals expressed interest in and a commitment to the research project.

Table 4.6: Peer Researchers, Arctic Bay, Nunavut (Elliott, 2007)

NAME AND SKILLS	PHOTOGRAPH
Peer Researcher 1. Bruce Pauloosie • Organizing and conducting a research project • Leading an interview and focus group • Distributing a survey • Computer skills: Microsoft Word and Internet • Ability to travel • Land skills • Translation	
Peer Researcher 2. Don Oyukuluk • Organizing and conducting a research project • Leading an interview and focus group • distributing a survey • Computer skills: Microsoft Word, Video production and editing software • Ability to travel • Land Skills • Translation • Video Skills	
Peer Researcher 3. Mason Pauloosie • Organizing and conducting a research project • Leading an interview and focus group • Distributing a survey • Computer skills: Microsoft Word and Internet • Ability to travel • Land Skills • Translation	
Peer Researcher 4. Melissa Reid • Organizing and conducting a research project • Leading an interview and focus group • Creating and distributing a survey using Survey Monkey software • Computer skills: Microsoft Word and Internet • Ability to travel and attend conferences • Ability to network • Translation	
Peer Researcher 5. Nathaniel Chouinard • Organizing and conducting a research project • Leading an interview and focus group • Distributing a survey • Computer skills - Advanced • Ability to network • Ability to travel and attend conferences • Translation	

4.3.2 Primary Data Collection

Primary data collection took place in Arctic Bay for seven weeks in May and June. Participation in the research was voluntary and participants had the right to withdraw from the research at anytime. Permission to participate in the research was obtained through informed consent (Appendix 7). Before the focus group and/or an interview, the researcher provided information about what the respondent was consenting to, background information on the research, how the collected information would be stored and what it would be used for. Respondents had the opportunity to ask questions about the research and express their concerns regarding the project aim, objectives and data collection methods. Research participants had the option of keeping their identity confidential and the personal information of participants who chose to be anonymous was replaced with a number on all research documents. All project data was stored on a password protected laptop supervised by the researcher. After completion of the field season, data was stored in a locked filing cabinet and on a password protected computer.

The online survey was housed under a password protected username and account at www.surveymonkey.com. Data collected through this website is private and secure and remains confidential beyond the duration of the project. Survey participants had the option of completing the survey independently or at one of two centrally located and supported sites. Participants who elected to complete the survey at the assisted locations had the opportunity to ask questions about the research, seek clarification, and receive technical support.

To meet objectives: one **(to identify current exposures)**, two **(to assess current adaptive capacity and document Inuit youth's recommendations on what can be done to enhance their adaptive capacity)** and, three **(to identify future exposures and assess future adaptive capacity)** the following methods were used during the primary data collection stage.

4.3.2.1 Existing Documentation

In order to assess the nature of future vulnerability, existing documents pertaining to the present exposures and adaptive strategies identified and documented by Inuit youth were analyzed. This entailed gathering base-line data related to future social and environmental conditions and their potential impacts on Inuit youth. Data was derived from sources of information including: climatology records and projections, Statistics Canada data, discussion papers and/or comprehensive reports produced by the Government of Nunavut, regional and national Inuit organizations, community wellness reports and action plans, workshops and meetings conducted by NYC and discussions with researchers who have, or currently are, involved in collecting similar information. Gathering and analyzing existing data contributed to the development of a contemporary understanding of events and conditions that may shape the future vulnerability and adaptive capacity of Inuit youth.

4.3.2.2 Sampling Strategies

Adults identified by the community, particularly Inuit youth, as actively involved in/or very knowledgeable of Inuit youth programs and services were selected using a

combination of purposive and snowball sampling strategies. Snowball sampling involved asking initial interviewees, identified during the pre-research visit, whether they knew of other Inuit youth or adults working on youth programs and services who may be interested in participating (Moore, 2006). Purposive sampling was particularly useful in this research because it made it possible for NYC to determine which adults in their community should be included in the interview process.

The aim of the sampling strategy for the online survey was to obtain a cross-section of Inuit youth (ages sixteen to thirty) in Arctic Bay. Self-selecting sampling strategies were used to obtain representation of Inuit youth in Arctic Bay. This method was used by distributing pamphlets in the community, community radio ads, and by word-of-mouth, to identify Inuit youth who would like to participate in the survey.

4.3.2.3 Sample Size

The sample size was limited by the number of Inuit youth living in Arctic Bay, the time and length of the field season, and the availability of adults currently working on, or knowledgeable of, youth programs and services.

4.3.2.4 Adult Interviews

In total, nine semi-structured in-depth interviews were conducted with adults identified as involved in youth programs and services. The purpose of these interviews was to determine community concerns regarding the ability of Inuit youth to adapt to social and environmental change. The sample included men and women; Inuujaq school and NAC

teachers, the principle and vice-principal of Inuujaq school; RCMP officers; nurses; and the wellness coordinators. Table 4.7 presents the characteristics of the adult interviewees.

Table 4.7: Adult interview participants

RESPONDANT	**CHARACTERISTICS**		
Number	**Sex**	**Race**	**Occupation**
One	Female	Caucasian	Wellness Coordinator
Two	Female	Inuk	Wellness Coordinator
Three	Male	Caucasian	High school teacher
Four	Female	Caucasian	Principal
Five	Female	Inuk	Vice-principal
Six	Female	Caucasian	Nurse
Seven	Female	Inuk	Elementary teacher
Eight	Male	Caucasian	RCMP Officer
Nine	Male	Caucasian	NAC/NYC

Most respondents possessed overlapping characteristics. For example, one respondent is a RCMP officer, volunteers at Inuujaq School, and serves on the Interagency committee. Interviews lasted approximately an hour, although one participant completed the interview over two days.

Semi-structured interview questions were beneficial because both structured information, and information about attitudes and beliefs were collected (Moore, 2006). Many of the questions were closed, offering the respondent a limited range of options with the question being asked, and others were open ended. Similarly, the aim of the depth

interview questions was to cover a range of pre-determined issues but to do so in a manner that best elicits the respondents' own views (Moore, 2006). Depth interview questions were flexible allowing the interviewer to pursue interesting points and possibly follow previously unrecognized directions (Delgado, 2006). Depth interview questions explored how participants felt about issues and respondents were given time to think and reflect on the questions being asked. Depth, semi-structured interview questions were combined and used to acquire personal insights into the nature of vulnerability (exposures and adaptive strategies). Table 4.8 summarizes the questions used to guide the semi-structured depth interviews.

Table 4.8: Youth-led Vulnerability Research and Adaptation to Change – Adult Interview themes, goals and questions.

THEME	GOAL	QUESTIONS
One - Current Exposures	To identify current exposures – the current conditions or stressors (related to social and environmental changes) that the community feels Inuit youth have to deal with in their lives.	• What conditions or stressors do you think Inuit youth face in their lives? • How do you think Inuit youth have been affected by these conditions or stressors? • Why do youth think Inuit youth have been affected by these conditions or stressors but not others?
Two – Current Coping Strategies	To assess current adaptive capacity – the ways in which the community feels Inuit youth have coped with current conditions or stressors (related to interacting social and environmental changes).	• How do you think Inuit youth have dealt with the conditions or stressors that are affecting their lives? • Do you think it has been difficult/easy for Inuit youth to manage these conditions or stressors? • Why do you think Inuit youth have dealt with these conditions or stressors in those ways? Why not others? • What programs/institutions/people do you think have helped Inuit youth better manage the conditions or stressors that are affecting their lives? • Do you think anyone/anything has made it harder for Inuit youth to deal with the conditions or stressors that are affecting their lives?
Three – Enhancing Adaptive Capacity	To identify community recommendations on what can be done to enhance the adaptive capacity of Inuit youth.	• Do you feel that there are actions that should be taken to help Inuit youth better cope with the conditions or stressors that are affecting their lives? • If yes, what could be done to help Inuit youth better cope with the conditions or stressors that are affecting their lives? • If no, why don't you feel that Inuit youth need additional assistance coping with the conditions or stressors that are affecting their lives? • If yes, who do you think should be responsible for implementing these actions/strategies? Providing the assistance Inuit youth need?

The responses to the interview questions revealed various personal insights and concerns regarding the exposures faced by Inuit youth in Arctic Bay and how the adult population

feels Inuit youth have coped with these conditions and/or stressors.

Throughout the duration of the field season numerous informal conversations took place with adults in the community who are parents, engaged in youth activities, or were interested in the project and wished to provide comments, un-recorded and un-documented. The occupation and characteristics of these individuals ranged from business owners, volunteers, long term residents, elders, etc. While no direct comments are used in this thesis from these conversations they are of significant value to the project. Informal conversations contributed to the researchers understanding of the exposures that Inuit youth face in their lives and provided insights into the adult perspectives of what conditions Inuit youth face and manage in the community.

4.3.2.5 Inuit Youth Focus Group

One focus group of twelve participants between the ages of 15 and 24 was conducted. Focus groups easily lend themselves to youth involvement in research because they often generate perspectives missed with one-to-one methods. The synergistic effect of focus groups, allows participants to interact and respond to each other (Krueger, 1988; Delgado, 2006). A synergistic approach is believed to generate more insightful information because it encourages participants to consider how they feel about issues in the context of other participant's feelings (Krueger, 1988; Hay, 2000; Moore, 2006).

Utilizing participatory action and youth-led research methods the focus group was conducted by the peer researchers with assistance from the researcher. The focus group

was conducted in a familiar and non-threatening environment (NAC) to help ensure that everyone contributed, that all points of view were acknowledged, and that the group felt at ease covering a range of topics.

The youth-led focus group was used to: (1) identify the exposures (social and environmental changes) Inuit youth are currently dealing with, (2) establish how Inuit youth are managing these exposures, and (3) document Inuit youth's recommendations of on what can be done to enhance their adaptive capacity. Table 4.7 outlines themes and topics covered during the focus group.

Table 4.7: Themes and topics covered during the focus group

KEY THEME	EXAMPLE OF TOPICS COVERED
Life in Arctic Bay for Inuit Youth	• Can you tell me about growing up in Arctic Bay? • What is the identity of Inuit youth in Arctic Bay?
Conditions Effecting Inuit Youth	• What changes are affecting you? • How are these changes affecting you? • Why?
Changes Experienced by Inuit Youth	• What changes have you experienced? • How is change influencing your life? • What are some of the problems and benefits associated with change?
Current Adaptive Capacity of Inuit Youth	• How are you managing changes? • Are you worried about your future?
Enhancing Adaptive Capacity of Inuit Youth	• Are you concerned about the issues discussed? • What can/should be done? • By whom?

Despite approval of these themes and questions following an informal pilot test conducted during the pre-research visit, the peer researchers involved in the focus group expressed frustration with the questions being asked and the format of the discussion. It

was decided that an online survey would be developed and distributed via the email contact lists of the peer researchers, word of mouth, and community advertisements.

4.3.2.6 Arctic Bay Youth Survey

Sixty-six web-based surveys were completed by Inuit youth between the ages of 9 and 30 over a six-week period. The aim of the online survey was to collect broad based data from self-selecting Inuit youth in Arctic Bay, regarding: (1) the exposures Inuit youth are currently dealing with, (2) how Inuit youth are managing these exposures, (3) what Inuit youth require to enhance their ability to manage the exposures identified, from self-selecting Inuit youth in Arctic Bay. The survey was created by one of the peer researchers (Melissa Reid) using the free online software *Survey Monkey*. The content of the survey was based on discussions from the focus group and information collected during a *Strengths, Weaknesses, Opportunities and Threats (SWOT)* workshop coordinated by NYC in Arctic Bay on December 14, 2005. During the *SWOT* workshop Inuit youth identified community specific strengths, weaknesses, opportunities and threats to the development of themselves and Arctic Bay. Table 4.8 presents the purpose, themes, and discussion questions covered during the *SWOT* workshop.

Table 4.8: Themes and discussion questions covered during the *SWOT* workshop (NYC, 2005)

THEME	DISCUSSION QUESTIONS	SUMMARY OF RESULTS
Strengths	• What are the positive things that are happening in the community? • What groups are working? • What activities do you enjoy most? • Who are the people who are making the community grow? • What things happen in the community that you like to brag about?	• Elders • Role models • Culture and language • Conferences • Voting • Dog teams • Graduation • Narwhal hunting • Team work • School exchanges
Weaknesses	• What are the negative things that are happening in the community? • What activities cause problems for people in the community? • What things in the community are you ashamed of? • What bad habits do we have that need to be changed?	• No youth centre • Not enough houses • Not enough jobs • Drugs and alcohol • People pressuring teens to keep our culture strong • Lack of parenting skills • Youth not knowing where to go • Suicide • Too many new teachers annually • Not enough sports equipment
Opportunities	• With the groups that are helping how can we use them to make the community better? • What skills do we have that we could use to make the community better? • What buildings do we already have in the community that could be use to make it better? • How can we support some of the good things happening in the community to make them better?	• Travel • Education • NYC • Literacy programs • Learning more about our culture through youth programs • Fix houses in need of repair • Find out what people want to do in the community • Volunteerism • Self employment
Threats	• What things in our community can potentially harm us? • What things in our community hurt us? • What skills do we not have to make this the perfect community? • What do we need in terms of buildings to help the youth in the community? • What bad habits could hurt the community?	• No strength to talk to a person • High cost of living • Southern based curriculum • GN staff turn over • Not enough cash • Losing our language and culture • Housing and overcrowding • Adults who say youth aren't good enough • Climate change • Health issues

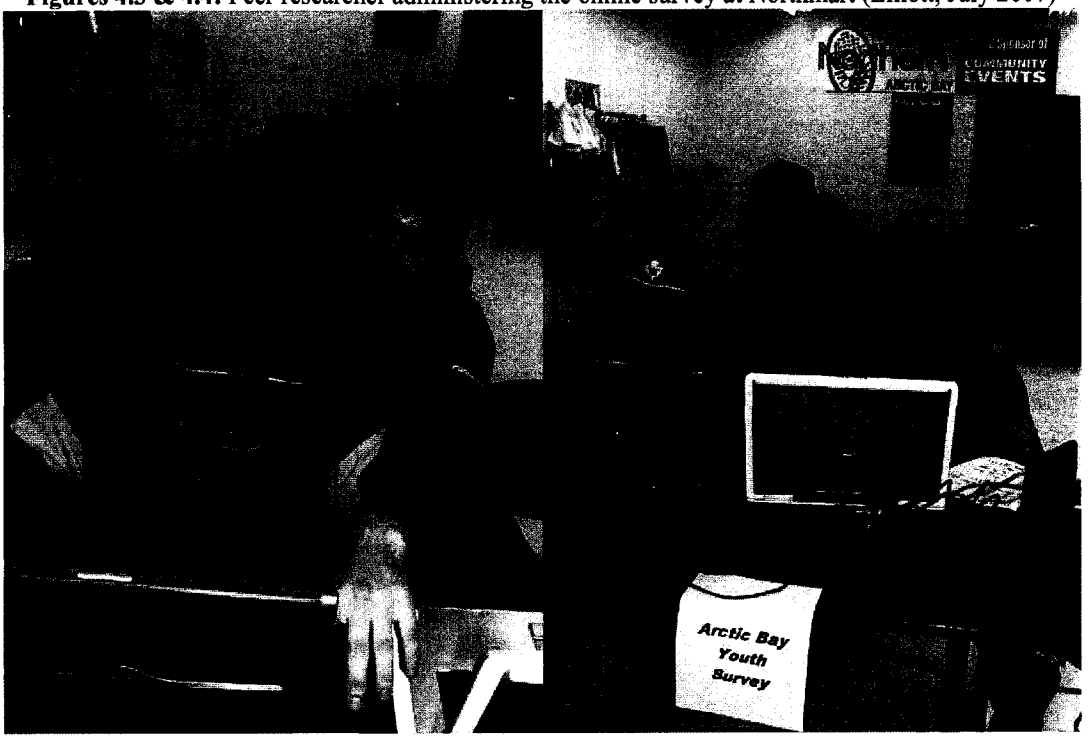
The survey was organized into five sections of eleven questions (table 4.9). Questions one through ten were developed with the objective of identifying specific risks that Inuit youth are currently dealing with as well as adaptive strategies employed. These questions were also formulated so as to gain insight into the future of Inuit youth in Arctic Bay. The eleventh question was an open-ended question allowing participants to provide their comments, feed back and suggestions anonymously.

Table 4.9 Themes and topics covered in the online survey

KEY THEME	EXAMPLE OF TOPICS COVERED
Background of Inuit Youth	• Age • Beneficiary status • Education
Exposures Effecting Inuit Youth	• What changes are affecting you? • What are the most threatening?
Current Adaptive Capacity of Inuit Youth	• What is helping you deal with the changes affecting you? • What are the most effective ways of dealing with the changes affecting you?
Enhancing Adaptive Capacity of Inuit Youth	• What do you require to better manage these changes in the future? • Who is responsible for implementing these strategies/providing assistance?
Obtain General Comment	• Related to the issues discussed in the survey

The online survey was administrated by the peer researchers at NAC and Northmart. Inuit youth could also complete the survey independently (e.g. utilizing a personal/family computer and Internet access). The benefits of using a web-based survey include: the ability to collect a high volume of responses in a relatively short time frame; anonymity in responses, since the respondents do not provide their names; and the lack of an interviewer which eliminated any potential for bias.

Figures 4.3 & 4.4: Peer researcher administering the online survey at Northmart (Elliott, July 2007)



4.3.2.7 Participant Observations

The researcher lived in Arctic Bay for the duration of the field season. Building on the experiences of the pre-research visit, participant observations were used to learn about everyday activities as they happened in their natural settings. The advantage of this technique was that it allowed the researcher to appreciate events and problems holistically and to recognize the various stakeholders, challenges, and customs specific to Arctic Bay (Neuman, 2004). It also helped to build familiarity, facilitate informal discussions, establish trust and allow the researcher to check claims communicated by the participants during the interviews, focus group, and online survey.

The researcher observed and participated in a monthly community Interagency meeting. RCMP officers, teachers, mental health workers, nurses and other members of the community participate in these meetings. This activity showcased issues of concern and how the community responds. The preliminary results of the research were disseminated to this committee to ensure the policy recommendations of Inuit youth, regarding their future adaptive capacity in the context of changing social and environmental conditions, are mainstreamed into existing policies and institutions.

4.3.2.8 Data Interpretation and Analysis

Data collected throughout the research was analyzed for reoccurring themes and synthesized to provide a comprehensive account of the vulnerability and adaptive capacity of Inuit youth in Arctic Bay. Recorded interviews, electronic field notes and relevant documents were analyzed with latent content analysis. Latent content analysis involves searching the data for information that assists in meeting the aim and objectives, and subsequently coding and organizing the data (Dunn, 2000). Latent content analysis uncovered the key themes relevant to the aim and objectives, in this case exposures facing Inuit youth and adaptation measures undertaken.

To gain insights into the future vulnerability of Inuit youth pertinent documents and scenarios were reviewed to ascertain the likelihood of changing conditions relevant to current exposures faced by Inuit youth. Future adaptive capacity was interpreted by referring to the factors that constrain current adaptation strategies. Results from the

interpretation and analysis of data and analysis of secondary sources are presented and discussed in detail in chapters five and six.

4.3.4 Evaluation

Youth have generally been absent from the evaluation stage of research (Rennekamp, 2001). Therefore, Inuit youth employed, as peer researchers on the project were asked to evaluate the research process. Peer-researchers were encouraged to use journals to: (1) record observations, reactions, and unanticipated experiences, (2) reflect on observations and experiences, (3) plan the next steps in the project and develop alternative scenarios for certain types of experiences, and (4) share experiences, reactions, and plans with supervisors or other research members (Riorden & Fulwiler, 1992). These journals were used to better understand the transformation of the peer-researchers throughout all phases of the research process (Delgado, 2006) and ensure the fourth objective (to build adaptive capacity among Inuit youth – through training and involvement in the research – to participate in research and/or deal with the social and environmental changes they are experiencing in their lives) was met.

An informal research evaluation, themed focus group (facilitated by the university researcher) was conducted to clarify the peer researcher's observations. What participants liked about conducting research, what they did not like, how to effectively engage Inuit youth in research and ways to improve future research involving Inuit youth were topics of discussion. This information will be compiled in a report, listing guidelines for engaging Inuit youth in research. This report was requested by NYC, and will be

available on their website. The NRI also plans to distribute these guidelines to universities pursuing future research opportunities in Nunavut.

4.4 Factors Affecting the Research

Limitations of the Researcher:

The researcher has an extensive personal background living and working in Nunavut, which may have affected the research. The researcher has lived in Nunavut since the age of six in two communities on Baffin Island, Pangnirtung and Iqaluit. Living in these communities improved the researcher's understanding of the culture, environment and Inuit way of life. The researcher also had a basic understanding of Inuktitut and as a youth growing up in Nunavut, knowledge of the issues that face Inuit youth.

On most occasions the researcher's personal experience was felt to have had a positive impact on the research, however, at times the peer-researchers felt uncomfortable with someone they identified as their peer assuming the role of supervisor, teacher or researcher, which they associated with roles held by 'outsiders' or someone of seniority.

Limitations of the Social Science Research Methods Credit:

Initially, the social science research methods course was to be conducted over two weeks in a formal classroom setting at Inuujaq School. Following arrival in Arctic Bay on the advice of two experienced teachers it was decided that the researcher would volunteer at the school floating between two classrooms. This decision was made in the hopes of building trust and friendship amongst the students, identifying Inuit youth who would not only be interested in the course but also committed to the research, and developing

strategies to overcome boredom, frustration and poor attendance. At the end of the school year four peer researchers were identified and hired and the training was undertaken during the first phase of employment.

Concerns related to the formality of the methodological process also occurred during the peer-researcher observations stage. Although this informal focus group was carried out and peer-researcher insights and recommendations documented and recorded in a draft report for the NRI the process of gathering this information was informal. In the end the peer-researcher stated their preference, which was to not record information in a personal journal but through conversations with the university research throughout the training and employment.

Limitations of the Adult Interviews:

The adult interviews were carried out at the place of employment of the individual being questioned. While this provided a comfortable and familiar environment for the interviews it also resulted in numerous interruptions and distractions (e.g. the interview with one of the two wellness counselors took place over two days due to the number of phone calls and drop in clients she had to respond to). The researcher willingly accommodated these interruptions but it was often difficult to regain the flow and momentum of the interview prior to the break. As a result, the answers to some questions are unclear and the interviewee had to spend additional time clarifying their response after the interview.

Due to the time of the field season equal participation of Inuit and non-Inuit perspectives in the adult interviews was not possible. Many of the recommended individuals were either unavailable because they were camping or preparing for departure.

Limitations of the Focus Group:

Many of the concerns that arose during the focus group were resolved with the development and implementation of the online survey, however; enthusiasm in participating in the focus group was much less than expected. The primary reason for this was an organized cultural training activity for young men interested in learning traditional narwhal hunting skills. This event was announced the day of the focus group making it impossible to change the date and location. In addition, many of the focus group participants seemed uncomfortable openly talking or sharing information with their peers. To overcome this, the researcher suggested breaking the focus group up into smaller groups but this was not well received by the group. Participants admitted that they did not understand the concept of the focus group and proposed breakout sessions well enough to lead the activity independently.

Limitations of the Arctic Bay Youth Survey:

The survey was administered by NYC through *Survey Monkey* during June and July 2007, two primary camping months. Internet is provided free of service at Inuujaq School and the NAC Community Access Program (CAP) site, however due to the time of year the school was closed and attendance at the CAP site was low. In an attempt to overcome this limitation the peer researchers set up a mobile survey station in the lobby of

Northmart. This location was selected due to the likelihood of Inuit youth accompanying their parents to the store when returning to town from camp to purchase supplies. Northmart is also a hang out for many Inuit youth who remain in town for the summer. The use of a web based survey also eliminated the opportunity to ask respondents to clarify their choices and thoughts, while the peer-researchers were able to provide some insight into the answers provided by respondents this was not as effective as being able to ask the participants themselves.

The questionnaire allowed respondents to identify their age as 9 or younger or between the ages of 10 and 15. However, it was later decided that this age category should not be considered youth, so questionnaires from individuals identifying themselves as 9 or younger or between the ages of 10 and 15 were not included in the analysis. This resulted in the elimination of 15 from the total 66 questionnaires returned to NYC.

The results produced from the survey provided a preliminary assessment of the needs and priorities of Inuit youth in regards to social and environmental change. However, the findings should not be considered fully representative of Inuit youth. For example, 64.6% of respondents were male. In order to achieve a more comprehensive understanding of the collective opinions that Inuit youth have of changing social and environmental conditions, a more in-depth and multi-faceted research project is necessary.

4.5 Dissemination of Knowledge and Results

As recommended by NYC during the preliminary visit the results of this project were disseminated to the community of Arctic Bay and local and territorial decision makers. Planning for the dissemination of results in the community was ongoing and undertaken in consultation with NYC and ITK, and when necessary other relevant regional and community representatives (e.g. Inuujaq school, the Hamlet of Arctic Bay, the wellness counselors, the Interagency Committee).

4.5.1 Community Evaluation and Dissemination

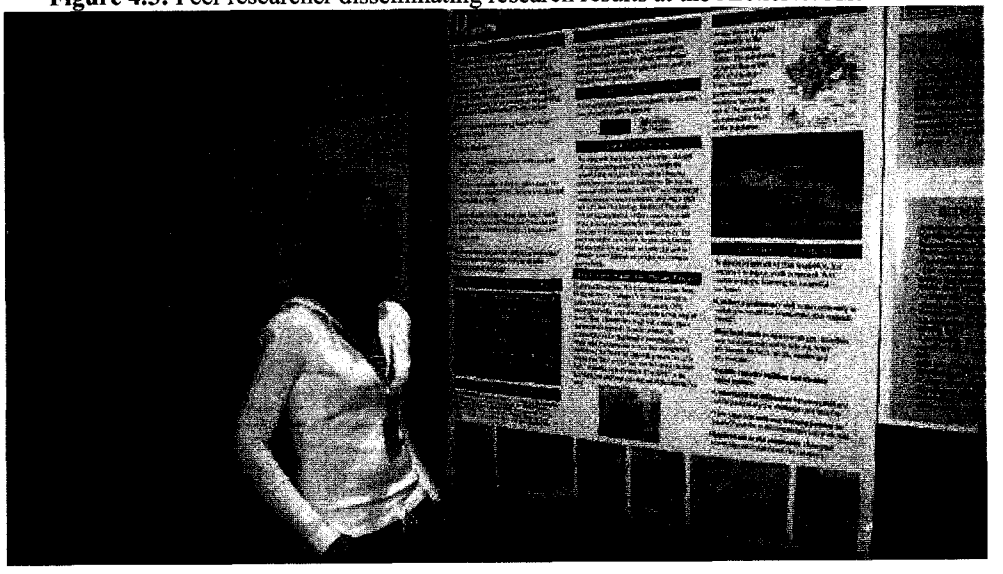
Knowledge gained from this project was communicated in the form of an in-community workshop, presentations, and a summary report in multiple languages. In addition, specific youth-led dissemination methods, based on the work of Delgado (2006) (table 4.12), were considered by the peer-researchers to communicate their findings and recommendations. Due to time and financial limitations the university researcher and peer researchers were unable to utilize all of these methods.

Table 4.10: Dissemination methods for youth-led research (Delgado, 2006)

METHOD	OUTPUT
Assessment report	An assessment of vulnerability to change from the perspective of youth.
Video	To communicate to a larger audience the vulnerability of youth to change and what actions they feel need to be taken in response to these changes.
Training manual	A manual on conducting research with youth in Nunavut for distribution at the Nunavut Research Institute.
Educational materials	A career technology studies credit curriculum in social science research methods.
Community meeting	To communicate to the community and key policy makers the value of youth-led research and this particular projects results.
Website	To communicate the experience on a national/international scale.
Conference	To educate to a larger audience the results of the research and potentially the development of a youth conference on change in Nunavut.
Comparative study	With youth in other Arctic regions to compare process and results.

The peer-researchers with support from members of NYC and the researcher began dissemination in October 2007. Melissa Reid attended the 8th Annual Student Conference on Northern Studies (ACUNS) in Saskatoon, Saskatchewan from October 17-22, 2007 and the ArcticNet ASM 2007 in Collingwood, ON from December 8-11, 2007. At these conferences Melissa presented a poster summarizing the results of the project as well as guidelines for engaging Inuit youth in research.

Figure 4.5: Peer researcher disseminating research results at the ArcticNet ASM 2007



While Melissa was attending this conference Mason Pauloosie, Bruce Pauloosie and Don Oyukuluk presented the results of the research at the Arctic Bay Trade Show.

Figure 4.6: Peer researchers disseminating research results at the Arctic Bay Trade Show (Elliott, 2007)

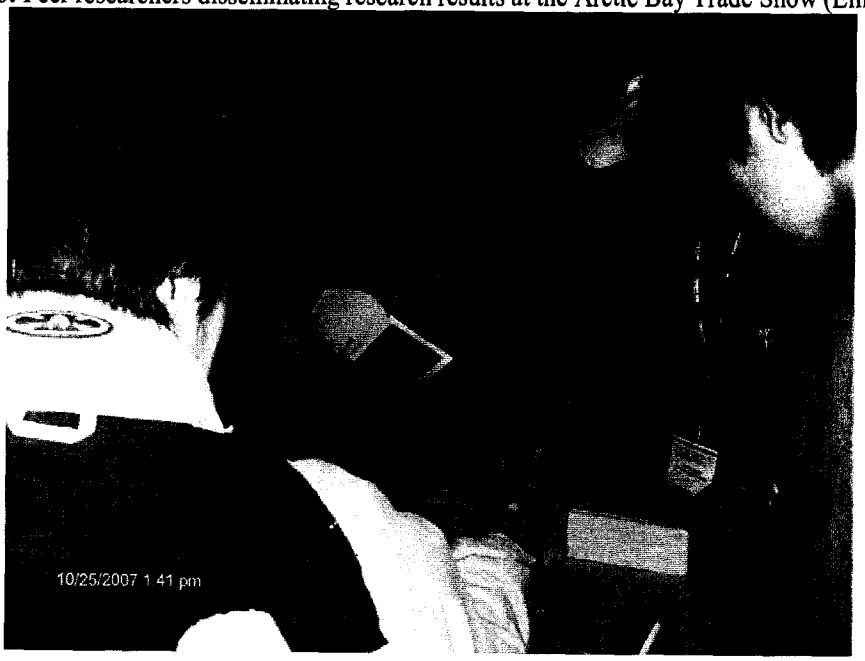


Figure 4.7: Peer researchers disseminating research results at the Arctic Bay Trade Show (Elliott, 2007)

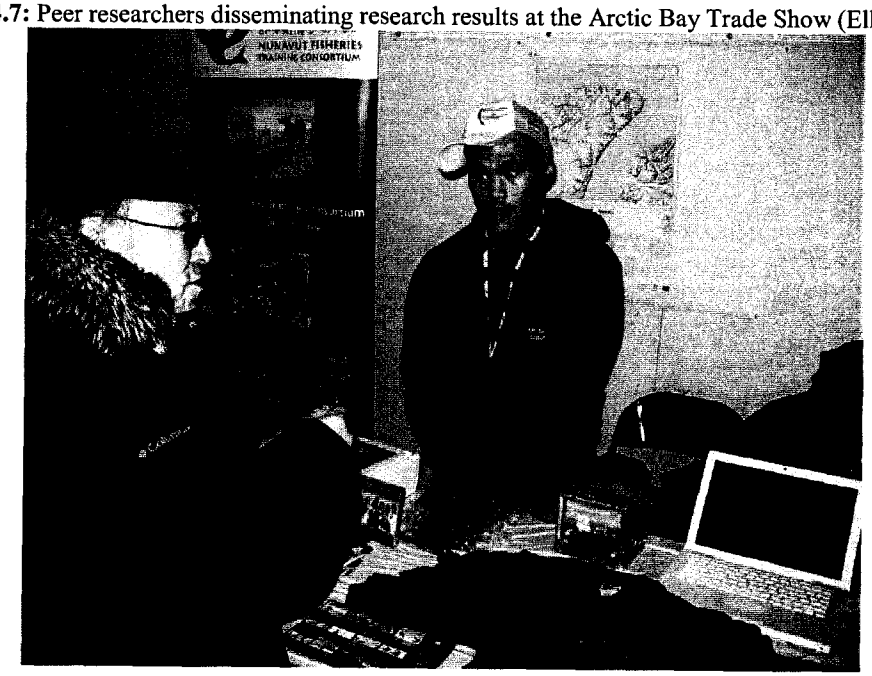


Figure 4.8: Peer researchers disseminating research results at the Arctic Bay Trade Show (Elliott, 2007)

4.5.2 Dissemination to Territorial and National Decision Makers

Results from this project were also disseminated widely amongst scientists, practitioners and policy makers, through publication in peer reviewed scholarly journals, popular journals, media outlets, as well as through presentations at conferences.

CHAPTER FIVE: *Current Vulnerability and Adaptive Capacity*

This chapter presents the results of objectives one and two of the research: (1) to identify current exposures – the current conditions or stressors related to interacting social and environmental changes that Inuit youth have to deal with in their lives; and (2) to assess current adaptive capacity – the ways in which Inuit youth have coped with current conditions or stressors related to social and environmental changes – and document Inuit youth's recommendations on what can be done to enhance their adaptive capacity. The chapter is divided into five sections: (1) a summary of the Inuit youth on which the study is based and with whom the research was conducted; (2) current exposures; (3) current adaptation strategies; (4) recommendations from Inuit youth on what can be done to enhance their adaptive capacity; and (5) an overview of the current vulnerability of Inuit youth in Arctic Bay.

5.1 Summary of Inuit Youth

Three methods were used to collect background information from Inuit youth: (1) a focus group, (2) an online survey, and (3) personal conversations with the peer researchers.

Focus Group:

The focus group took place at the NAC community learning centre and lasted approximately one hour. The first theme covered during the focus group was, *Life in Arctic Bay for Inuit Youth.* Participants were asked questions such as; *can you tell me about growing up in Arctic Bay?* and w*hat is the identity of Inuit youth in Arctic Bay?* Twelve Inuit youth participated in the focus group, three of whom were female. All focus group participants were under the age of twenty-five and have lived in Arctic Bay for the

majority of their life. One participant lived and attended school in Nanisivik during the operation of the lead zinc mine.

Online Survey:

The first section of the *Arctic Bay Youth Survey* documented the background information of the participants and the activities they engage in. Respondents shared details on their life history, school enrollment, age and beneficiary status[5]. Table 5.1 provides a summary of the data collected in the first section of the *Arctic Bay Youth Survey*.

Table 5.1: Background information of the online survey respondents

QUESTION	% OF RESPONDENTS
Male or Female	64% Male 35% Female
Beneficiary of the NLCA	92% Yes 7% No
Attending School	65% Yes 34% No
Years Living in Arctic Bay	9% 0-4 years 6% 5-9 years 62% 10-19 years 22% 20-30 years
Age	1% 9 or younger 21% 10 – 14 37% 15-19 27% 20-25 13% 26-30

[5] Nunavut Tunngavik Incorporated (NTI) is responsible for enrolling individuals as Beneficiaries of the *Nunavut Land Claims Agreement* (NLCA). Article 35 of the NLCA requires a Designated Inuit Organization to ensure that all eligible Inuit of the Nunavut Settlement Area have the opportunity to be enrolled. A person who is on the Inuit Enrolment List is entitled to benefit from the NLCA so long as he or she is alive (NTI, 2007).

Out of sixty-six respondents, 92% declared beneficiary status. 64% of participants were male and 65% were currently attending school, either at Inuujaq School or NAC. The majority of participants were between the ages of fifteen and twenty five and have lived in Arctic Bay all their life.

Personal Conversations:

Personal conversations with the peer researchers clarified the background information obtained from the focus group and online survey. These conversations took place on an opportune basis, or as necessary in semi-formal planned meetings. This method was used at all stages of the research to ensure the methods and data gathered were done with, by and for Inuit youth.

5.2 Current Exposures – Current Problematic Conditions and Concerns

Information regarding current exposures was obtained from the second section of the *Arctic Bay Youth Survey* and supplemented with the results of the focus group and adult interviews. The second section of the online survey builds on the background information obtained in section one and seeks to learn from Inuit youth what is currently affecting them and/or their ability to perform daily activities (e.g. attend school, generate an income and participate in recreational activities). During the one day *SWOT* workshop approximately 150 exposures were identified by Inuit youth. Rather than repeat this exercise (identification of exposures), which the peer researchers were concerned would reduce participant numbers, the development of a ranking exercise in section two of the online survey was recommended. Consistent with youth-led participatory action research

the peer researchers were supported and encouraged to develop and conduct the online survey. Twenty exposures were selected from the 150 identified during the *SWOT* exercise. These exposures were updated and revised by the peer researchers to ensure they were relevant. The online survey respondents were asked to rank the 20 exposures listed.

The information obtained from the online survey was supplemented with the results of focus group and adult interviews. Focus group participants were asked questions within two themes: *Changes Experienced by Inuit Youth* and *Conditions Affecting Inuit Youth.* Inuit youth were asked the following questions: *What changes have you experienced? How are these changes affecting you? Why are these changes affecting you?* Adults interviewed were asked questions such as: *What conditions or stressors do you think Inuit youth face in their lives?* and *How do you think Inuit youth have dealt with the conditions or stressors that are affecting their lives?* Fixed and/or leading questions were avoided during the focus group and adult interviews to ensure the conditions raised were relevant and of importance to Inuit youth in Arctic Bay. Participants were also encouraged to provide their own explanations and descriptions of the issues identified.

The following sub-sections present the data obtained from the above methods (section two of the online survey, the focus group and the adult interviews). The ten exposures identified by Inuit youth as causing the most stress in their lives: income inadequacy, food insecurity, infrastructure and housing, education, employment, identity and self-esteem, suicide, resources for youth programs, climate change and transportation, are

discussed in detail. To clarify the responses the researcher discussed the results with the peer-researchers. During these discussions the peer researchers compared the exposures, identified linkages and distinctions (e.g. *what distinguishes income inadequacy from limited employment opportunities?)* and provided additional information.

5.2.1 Income Inadequacy

75% of the *Arctic Bay Youth Survey* respondents stated that they are concerned with income inadequacy. Income inadequacy is linked to economic self-sufficiency, which is defined as the amount of money required by an individual and/or family to meet their basic needs (Johnson and Corcoran, 2003). According to Inuit youth, numerous families in Arctic Bay have difficulty reaching economic self-sufficiency. Reasons cited include: (1) lack of local employment opportunities, (2) inadequate social assistance payments, and (3) the high cost of living.

Job opportunities in Arctic Bay are limited (refer to section 5.2.5) and income is often derived from family members or social assistance. In Nunavut, the territorial social assistance program is known as Income Support (IS). The IS program serves two purposes: (1) to ensure that all Nunavummiut have access to a minimum standard of living, and (2) to help residents who are able to work become more independent through counseling and training (NISP, 2007). The IS program provides basic and extended benefits to eligible heads of households and their dependants. Basic Benefits cover the cost of utilities, food (the food allowance component of the Basic Benefit may be used to purchase personal and/or household items) and shelter. Maximum shelter allowance rates

depend on the composition of the household, single-person or including dependants (NISP, 2007) and subsidies provided by the Public Housing Program (PHP) (NISP, 2007). Extended Benefits such as a clothing allowance, expenses related to education and training, incidentals, furniture and equipment replacement and emergency assistance are also available to eligible clients (NISP, 2007).

Despite the intentions of the IS program Inuit youth discussed a number of limitations and the resulting consequences. For example, when an individual receiving IS finds employment the amount of rent they pay under the PHP increases. The increase in rent often reduces the overall income acquired by the family to less than that when on IS and living in subsidized public housing. Many Inuit youth commented that they feel discouraged to obtain work when it is available for fear that they and/or their family may not be able to continue to afford public housing.

Inuit youth also expressed concern over the current rate of IS benefits and the cost of living in Arctic Bay. According to the Revised Northern Food Mail Basket (RNFMB)[6], a family of four in isolated northern community has to spend between $350 and $450 per week to ensure a healthy diet. This is supported by research conducted by the Pauktuutit Inuit Women of Canada[7], which found that although average income levels for Inuit in

[6] Since 1990, Indian and Northern Affairs Canada (INAC) has been monitoring the cost of a Northern Food Basket in isolated northern communities and in southern supply centers. The Northern Food Basket (NFB) was intended to provide a nutritious diet for a family of four, consistent with the 1990 Recommended Nutrient Intakes for Canadians. In February 2007, the program was revised to reflect the new version of Canada's Food Guide. In April 2007, the basket was further revised to reflect the Aboriginal version of the Food Guide.

[7] Pauktuutit fosters greater awareness of the needs of Inuit women, advocates for equity and social improvements, and encourages their participation in the community, regional and national life of Canada. Pauktuutit leads and supports Canadian Inuit women in policy development and community projects in all

Nunavut suggest average wages in Canada, income is not an accurate measure of economic well being due to the high cost of goods and services in Nunavut.

During a trip to Northmart (one of two local grocery stores) the peer researchers noted the price of various necessity items (e.g. milk and bread) and found the cost to be at least three times that of the same items in southern grocery stores (prices gathered from flyers for Canadian grocery stores distributed via mail and/or available online – e.g. www.sobeys.com). Due to the high cost of living many Inuit youth face challenges accessing adequate nutritional food. In a recent Statistics Canada (2000/02) survey, 56% of Nunavut respondents stated that they, or someone in their household, had lacked money over the past year to eat the quality or variety of food they had wanted, or had worried about not having enough to eat, or had actually not had enough to eat.

5.2.2 Food Insecurity

63% of Inuit youth who completed the survey stated that they are concerned about food insecurity. Food insecurity is described as the unavailability of nutritionally adequate and safe foods and/or the inability to acquire food in socially acceptable ways (Anderson, 1990). According to the online survey participants, food insecurity in Arctic Bay can be attributed to a number of factors including: income inadequacy (refer to section 5.2.1),

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areas of interest to them, for the social, cultural, political and economic betterment of the women, their families and communities.

the cost of store bought foods (refer to section 5.2.1), and the high cost of hunting and harvesting country food.[8]

The cost of obtaining country food is dependant on a variety of factors including: the type and availability of a particular species, the season, the distance that must be traveled to obtain the species, and the cost of supplies and equipment. The Nunavut Harvesters Support Program (NHSP) estimates it costs more than $200 to conduct a weekend hunt (gas, ammunition, food, etc.). The high cost of harvesting county food limits the ability of many Inuit youth to engage in this activity. Many young Inuit families' depend on IS, which cannot cover all of the expenses associated with a hunting trip. As the cost of hunting and traveling increases, as a result of climate change (refer to section 5.2.9), the dietary habitats of Inuit youth may shift towards diets consisting predominantly of imported foods. For example, the location, abundance and size of harvested species, such as caribou, are expected to shift. As a result, Inuit will have to travel further to access and acquire these species. If Inuit youth cannot attain these foods it is likely that they will increasingly rely on easily accessible, less nutritious, store bought foods.

Inuit youth agreed that they consume a high number of store bought foods and that these foods may have significant negative impacts on their health and well-being. Although the taste of these foods is often preferable, Inuit youth identified country foods to be more

[8] Inuit traditional diet, often referred to as "country" or "Inuit" food, includes caribou, Arctic char, seal, whale, walrus, Arctic hare, musk ox, duck, goose, narwhal, ptarmigan, mussels, clams, Arctic shrimp, seaweed, berries and others animals, birds, seafood and plants from the Arctic environment. It is a diet rich in vitamin A, protein, iron, zinc, calcium, vitamin C, omega-3 fatty acids, and vitamin B, a balanced and nutritious regime that has kept Inuit healthy for thousands of years. Country food is still an important part of the Inuit diet, and many prefer country food to store-bought, southern fare (ITK, 2008).

filling and satisfying over longer periods of time. For example, when consumed before and/or during a camping trip or school Inuit youth expressed that their ability to remain focused and alert was greater. Unfortunately, programs implemented to increase the consumption of country food amongst Inuit youth are limited or non-existent. For example, the school breakfast program does not receive multi-year funding to support its operation. There is also no place to store and prepare country and/or southern food. The home economics room, the only space in the school with facilities to prepare food, is being used as a staff and resource room. Limitations in the type of infrastructure available to prepare (e.g. a larger more accessible home economics room), store, and provide resources on a greater scale (e.g. a local food bank, larger community freezer) or to educate people on how to prepare nutritious meals (incorporating traditional and imported foods) impacts the food security of Inuit youth in Arctic Bay.

5.2.3 Infrastructure and Housing

61% of Inuit youth who participated in the online survey identified the lack and poor quality of infrastructure and housing as a condition causing stress in their lives. One participant expressed disappointment with the current system of allocating housing,

> *With the housing situation, if they just start pulling out the single people from the 3-5 bedroom houses and start giving it to the families that need it the most things would improve. I think better organizational skills are needed for committees to figure out where they need to move people in order to meet the needs of the community. I cannot believe that they do not do anything about a single person/couple that do live in a 3-5 bedroom house while a family of ten is stuck in a 1or 2 bedroom home. Unbelievable.*

The lack of and process for allocating existing housing impacts how Inuit youth view their transition into adulthood. During informal conversations Inuit youth mentioned that

it is difficult to become independent from their parents and extended family because of the lack of housing. As a result, Inuit youth have difficulty foreseeing an opportunity to move out of their family home and start their own lives.

In addition to concerns about the allocation and availability of housing, many Inuit youth also mentioned that there is a lack of community infrastructure,

> *What this community really needs is a new gym facility (bigger than the old one) and a youth centre, not just for the youth, so the elders can talk to the teens, by doing this more people will learn what the elders have gone through in the past before our elders are gone.*

Many adults also expressed the need for a space for Inuit youth to gather not only to exchange knowledge and connect with elders but so that they have a quiet and appropriate place to complete homework and school assignments,

> *... the majority of students are living in overcrowded houses where activity is constant and a quiet and private place to study is non-existent.*

While there are a number of potential spaces for Inuit youth and elders (to gather for either of the above reasons) the lack of local expertise and materials for building limits the repair of current, and prevents the development of new, infrastructure. In an attempt to respond to this problem, the Arctic Bay community learning centre offers a pre-trades program. Unfortunately, students who complete the first year must relocate to the main campus in Iqaluit to complete their studies. This is often viewed as a barrier to pursuing secondary studies.

5.2.4 Education

61% of survey participants stated that education was of primary concern. There are two educational institutes in Arctic Bay. Inuujaq School offers a K through 12 program and

NAC has a two class room adult education community learning centre. NAC offers a number of programs for adults in the community seeking education and training; however courses beyond the first year are limited.

Arctic College presently has 5 NTEP students, 9 pre-trades math and science students, and 22 students have enrolled in class three air brakes. Three people have applied for a book-keeping course that is coming up in Iqaluit.

Inuit youth are aware that to obtain training and education they may have to leave their community and family. Impacts associated with leaving include disconnect from family and peers, loneliness, and often as a result, low levels of self-esteem and depression. These factors are compounded by problems that may occur later in relocation. For example, the challenges of being a young and/or single parent, and stress caused by having to find affordable childcare and housing in a new community.

Inuit youth often struggle with completing high school. According to one teacher, when many Inuit youth arrive at school they are often exhausted and susceptible to frustration. This is coupled with an environment in which inadequate resources is a daily reality. Inuit youth who participated in the focus group mentioned that many of their classes do not have the resources (books, pencils, paper, lab equipment, etc.) required to complete the course requirements. Students are often bored since extra curricular and culturally relevant activities are also limited.

A lot of research has been done on why students drop out of high school. Sometimes they are needed at home or to go out on the land, they feel pressured to leave school due to bad behavior, sometimes the curriculum doesn't suit them, and sometimes they make the decision for their own personal reasons to drop out. Young people are so busy with numerous decisions to make. In high school they have to start planning what courses to take and it becomes very overwhelming.

Educators interviewed also stated that the current structure of the education system in Nunavut is failing Inuit youth. Although Inuktitut is the primary language of communication, English is the dominant language of instruction beyond grade seven. According to one adult interviewee,

> *Inuit youth, who are on a southern-based English first language curriculum, are at a huge disadvantage. They are expected to make the transition from Inuktitut instruction to English instruction without the skills necessary to undertake studies in English at a grade seven level. As a result they are often unable to keep up with class requirements and we spend less time adhering to the curriculum and trying to increase the reading and writing comprehension of our students.*

Teachers then feel pressure to decide whether to hold students back, threatening their identity and self-esteem, or to pass them on the basis of age rather than level of educational attainment. This cycle persists through high school until students are faced with provincial (Nunavut, like the Northwest Territories follows the Alberta curriculum) departmental exams. Southern institutions, that have little knowledge of Inuit culture and the educational challenges students in Nunavut face, develop these exams. Inuit youth often struggle with the content, in particular relating to the examples illustrated in the questions.

The current educational circumstances in Arctic Bay play a role in employability. Motivation to complete high school and/or training at NAC is low and was accredited by many Inuit youth to the lack of employment opportunities available in the community.

5.2.5 Employment

58% of Inuit youth who completed the online survey identified employment as an exposure. The decisions Inuit youth make about staying in school and obtaining a post

secondary education are impacted by the type and number of job opportunities available. Despite government decentralization following the formation of Nunavut there are limited high paying full time jobs available in Arctic Bay. According to one survey respondent,

There are not many job openings in Arctic Bay.

Many Inuit youth also indicated that there are significant challenges obtaining employment in Arctic Bay, even when an opportunity exists, including: favoritism (e.g. one family member will often hire another without opening the position to a public competition), wages less then social assistance (e.g. working for minimum wage at one of the two local grocery stores does not guarantee greater income generation), and insufficient training and/or qualifications (e.g. those jobs that are available are concentrated in the school, health centre, and on construction sites and require a university degree, trade certification, and/or extensive work experience). As a result, many Inuit youth consider leaving Arctic Bay to expand the number and type of employment opportunities available and/or to acquire the appropriate certification (refer to section 5.2.4). During the adult interviews, many respondents mentioned that a number of Inuit youth had moved from Arctic Bay to Iqaluit, the capital and government centre of Nunavut, in pursuit of employment or training. Relocation has the potential to result in negative long-term impacts (refer to section 5.2.4), such as loneliness, depression and low levels of self-esteem.

5.2.6 Identity and Self-Esteem

37% of Inuit youth who participated in the online survey selected identify and self-esteem as a key exposure. Identity and self-esteem were often discussed in the context of employment (refer to section 5.2.5). Full-time employment is desirable and necessary; however the lack of employment opportunities in Arctic Bay creates a situation of conflict and stress for many Inuit youth. Adults interviewed often stated that they felt students prolonged completing high school, possibly to avoid making a decision to remain in Arctic Bay without work or to seek employment in a larger government centre leaving behind family and friends or in some cases children.

This stress is compounded by additional conditions, which affect the identity and self-esteem of Inuit youth. Previous studies conducted in Arctic Bay communicated a fear amongst adults in the community that Inuit youth are losing their connection to their parents and elders, and as a result are not learning traditional skills and values essential to their culture and personal well being. For example, Inuit youth have difficulty acquiring traditional and land based skills. According to Inuit youth this is in part the result of: the high cost of a trip (refer to section 5.2.2), involvement in community activities, interest in technology and the structure of the current education system. Inuit youth are engaged in activities that take place in the community (e.g. community dances, members in youth groups) and are interested in technology (e.g. computers, television, music), which are accessible only in town. The pressure to preserve Inuit culture and meet the expectations of adults and elders in the community is a cause of stress for many Inuit youth. Inuit youth recognize community concerns for their future and well-being but the message is

often interpreted as a choice to pursue a more traditional lifestyle in opposition to a life that incorporates southern based attitudes and ways of living (e.g. extensive reliance on computers and use of the Internet). During a territorial workshop on the determinants of human health (NDH&SS, 2005) participants discussed traditional knowledge and western teaching, noting that it can pull Inuit youth in two directions, causing confusion, low self-esteem, and conflict within the family. This is supported by one Inuit youth who noted in the online survey that,

Becoming a teenager is hard in the Arctic.

As a result of these pressures some Inuit youth may abuse illegal substances (e.g. drugs, alcohol, and tobacco). Alcohol can be ordered from the liquor warehouses in Iqaluit and Rankin Inlet following approval from the community alcohol committee. Anyone of legal drinking age can apply for an alcohol permit from the committee, however the most common way that Inuit youth gain access to alcohol and drugs is via local bootleggers and drug traffickers. While Inuit youth are less concerned about the abuse of drugs and alcohol by their peers, the family violence often associated with drug and/or alcohol consumption causes great anxiety and fear. Interviews with the wellness counselors revealed the extent that drugs and alcohol are involved in incidents of violence in the community. The wellness counselors are concerned that more and younger aged Inuit youth are impacted indirectly and directly by drugs and alcohol and that the circumstances created during alcohol and drug consumption often lead to poor self-esteem, questions of identity and suicide.

5.2.7 Suicide

27% of Inuit youth involved in the online survey expressed concern regarding suicide; however, few wished to discuss it in detail. Fear associated with discussing suicide and the circumstances that lead to an act of suicide is summarized in the following statement provided by one online survey participant,

Need more youth to talk about their problems, to talk about less suicides and the need for more places to go.

Adults, particularly the educators and the wellness counselors, interviewed mentioned the difficulty in promoting dialogue amongst Inuit youth about their problems. A number of possible hypothesizes were discussed, including the degree and extent of relationships in the community and concerns about secrecy and the ability of Inuit youth to trust each other and/or adults.

Complex, interconnected conditions that have developed as a result of rapid social and cultural change were also identified by the wellness counselors as contributing factors. This is consistent with the preliminary results of the Nunavut suicide follow-back study, *Qaujivallianiq inuusirijauvalauqtunik* (learning from lives that have been lived). According to Jack Hicks, one of the study's researchers, Nunavut's high suicide rate should not be viewed in isolation, but as a symptom of a society experiencing rapid and difficult social, cultural, and economic change under specific historical and political conditions. Specifically, Inuit communities are suffering (Hicks, 2007):

- high levels of violence and abuse;
- high rates of unemployment;

- high levels of unresolved traumas of various types;
- high rates of substance abuse;
- a 75% school drop-out rate; and
- widespread poverty.

For Inuit youth involved in NYC creating a dialogue and addressing the sense of hopelessness that results from the combination or one or more of the above factors is of particular importance. As a result, suicide prevention is incorporated in their two areas of concentration (health and education) and in the delivery of all of their programs and services.

5.2.8 Resources for Youth Programs and Services

43% of Inuit youth stated that the lack of resources for youth specific programs and services was a cause of stress and concern. Online survey respondents and adult interviewees both expressed frustration with the lack of organized activities in the community (e.g. extracurricular activities) and the resources (both financial and infrastructure related) to ensure the ongoing support of programs for Inuit youth.

Currently, there are no sports offered in the summer. Those that are offered during the school year are limited by the number of volunteer coaches and the quality and quantity of available sports equipment. At the time of this study, there was no goalie equipment for the floor hockey and soccer teams and the gym was too small to play basketball. There is a need for a community youth centre and improvements to the school gymnasium (refer to section 5.2.3). One online survey participant stated,

Our community needs more activities going on. We need a new community hall/gym for teenagers so we can be in shape so we can feel good and so we won't get into trouble.

According to many adult interviewees, cultural-land based activities should become an integral part of Inuujaq School. The Youth Identity Development Strategy (2003), a report compiled by Inuit youth in collaboration with the Government of Nunavut - Department of CLEY also highlights the need for youth programs in and outside of the education system that support sport, culture, community life, instill pride and develop leadership skills. This was considered particularly important in the context of the changing social and environmental realities documented in communities such as Arctic Bay.

5.2.9 Climate Change

37% of Inuit youth expressed concern regarding environmental change, particularly risks associated with climate change. While Inuit youth do not necessarily understand the science of climate change, or the magnitude and degree of predicted impacts, they do recognize that it is an issue of great importance to Inuit in Nunavut. One survey respondent noted that,

> *The Northwest Passage is near Arctic Bay and I think that people should do more to get information and work together with Grise Fiord and Resolute Bay to make the international community know that Inuit use the waters. It is an unnoticed threat and the Government of Canada is only sending the military to make the international community know that it is Canada's water. We should strengthen our powers to protect them because it will hurt our land and our animals drastically if this is not dealt with.*

Informal discussions with the peer-researchers revealed that Inuit youth in Arctic Bay feel that: the shoreline is changing, tundra around the community is sinking, sea ice is thinning, weather is becoming unpredictable and the strength and direction of winds is

changing. One focus group participant discussed speed at which fog rolls into the community and changes his parents and elders have witnessed.

While it was not perceived as directly impacting the lives of Inuit youth on a daily basis, the recognition of the well being of their community and the ability of residents to make use of the environment recreationally and/or traditionally, particularly for harvesting, camping and travel in and out of the community, in the future was a cause of stress.

5.2.10 Transportation

50% of Inuit youth in Arctic Bay identified transportation as a current exposure. Lack of access to a mode of transportation (e.g. a car, boat, ski-doo and/or ATV) was frequently cited as a reason why Inuit youth are unable to go out on the land, sea ice or water (to hunt and camp, visit family and friends in other communities), participate in recreational activities (bonfires with friends, ski-doo races, day trips), provide support to their families in town (picking up children, going grocery shopping) and obtain employment (with the airport in Nanisivik). Having access to, and/or owning, a mode of transportation was particularly important to young Inuit men. The cost to purchase, operate and maintain a ski-doo or ATV was discussed with the male peer researchers and during informal conversations. Their comments and concerns were also reinforced during the adult interviews. Adult interviewees explained that it is increasingly difficult for Inuit youth to get out on the land because of the high cost of purchasing a ski-doo and/or ATV, gas and supplies.

Economic limitations are also a concern when trying to travel by air. Inuit youth expressed interest in leaving town for educational, sport or personal reasons but were frustrated and deterred by the high cost of an airline ticket. The price of a First Air (the only airline that provides service to Arctic Bay via Nanisivik) round trip ticket from Nanisivik to Iqaluit was $3225.60 at the time of this study.

5.3 Summary of Current Exposures

Exposures related to socio-economic inequalities were emphasized, however, these circumstances were also found to be affected by environmental conditions specifically climate change. Table 5.1 summarizes the key exposures identified by Inuit youth in the *Arctic Bay Youth Survey*. Explanations of the implications of the exposures were provided by adults who work with Inuit youth, the peer-researchers, as well as additional members of NYC who expressed interest in analyzing the results of the survey. The explanation is located in column three of table 5.1 and relates to the exposure categories presented in column one. Column two identifies the percent of respondents who identified that particular exposure as a problematic condition.

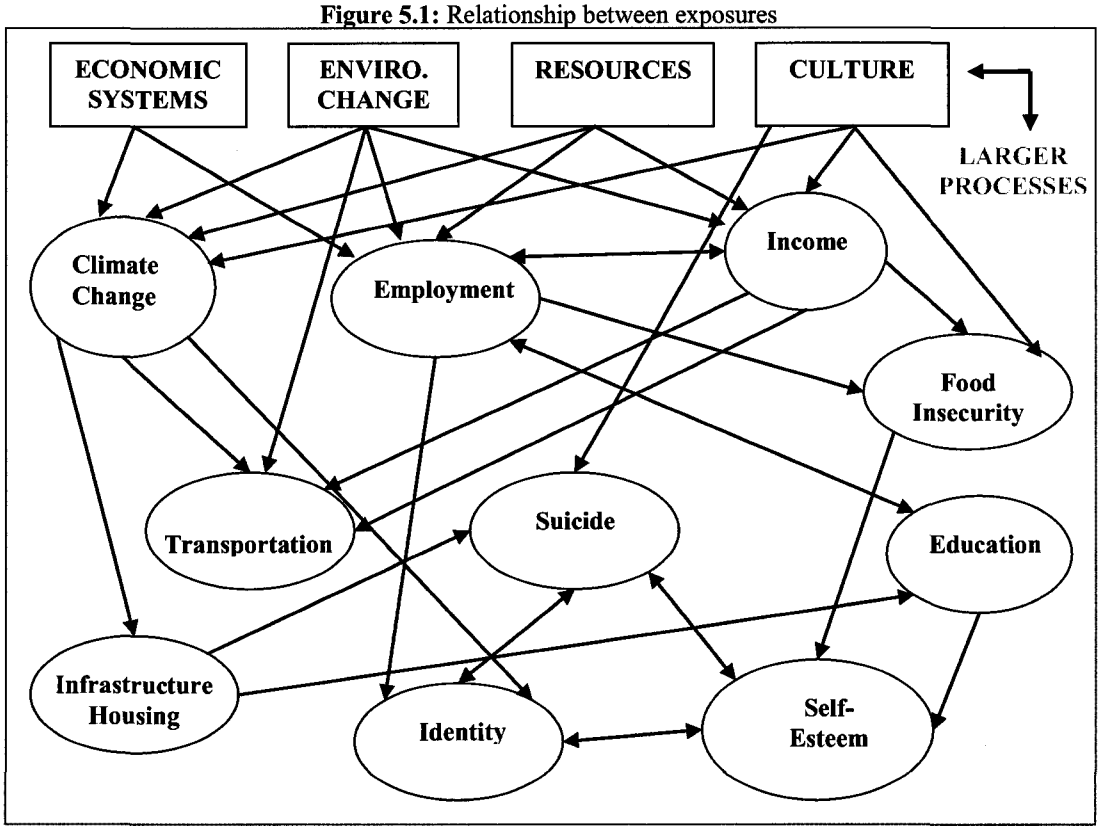
Table 5.2: Key exposures and implications identified by Inuit youth

EXPOSURE	%	EXPLANATION
Income inadequacy	75%	• Access to financial resources often limited to Income Support • Limits diet and time spent on the land
Food insecurity	63%	• Amount and variety of country food consumed is limited • Higher consumption of store bought foods • Transmission of hunting and food preparation knowledge reduced • Health and education problems resulting from poor nutrition
Lack of infrastructure	61%	• Inuit youth often feel that they have no where to go and that the are not seen as distinct and important, e.g. there is no place for Inuit youth to gather • Limited housing opportunities, as a result Inuit youth often live with family beyond adulthood
Inadequate education system	61%	• Low level of educational attainment further restricts education and employment opportunities • Low self-esteem and boredom
Limited employment opportunities	58%	• To gain employment (either seasonal or permanent) Inuit youth often relocate to larger communities
High cost of transportation	50%	• High cost of gas impacts ability to hunt and camp • Travel to other communities limited, as a result Inuit youth often feel trapped
Limited support and resources for youth programs and services	43%	• Limited/ non-existent sports equipment, health of Inuit youth further threatened by low levels of physical activity • Inuit youth often feel that policy/programs for Inuit youth are ignored or not seen as important • Programming of NYC limited
Identity and Self-esteem issues	37%	• Loss of language and culture, impacts associated with social change • Exposure to media, technology, education, etc. • Pressure to establish identity in the context of two cultures
Impacts associated with climate change	37%	• Uncertainty of the likelihood and degree of impacts • Access to the environment further threatened • Potential to compound social change impacts
High suicide rates	27%	• Confusion, depression and anger associated with a suicide • Abuse of drugs, alcohol and tobacco • Linked to low self-esteem, violence, unemployment, poverty, etc.

When discussing the exposures identified in table 5.1, Inuit youth maintained that the challenges they face are interconnected and often occur as a result of larger processes. For example, Inuit youth spoke of their health in reference to a combination of exposures,

including food insecurity, identity and well being and suicide. Figure 5.1 illustrates the relationship between the exposures faced by Inuit youth.

Figure 5.1: Relationship between exposures



To minimize the implications associated with the exposures presented in figure 5.1, Inuit youth often modify their behavior implementing one or more adaptation strategy.

5.4 Current Adaptation Strategies

The third section of the *Arctic Bay Youth Survey* explored how Inuit youth are responding to the exposures they ranked in section two. Under the third section – *Current Adaptive Capacity of Inuit Youth* – adaptive capacity was discussed in relation to a number of factors that influence adaptation. Participants were asked to rank, *what is helping you*

deal with the changes affecting you? and *what are the most effective ways of dealing with the changes affecting you?* Adaptations provided in the third section of the *Arctic Bay Youth Survey* were decided and agreed upon in advance by the peer researchers. The predetermined adaptations were identified during the *SWOT* (2005) and updated (in reference to the exposures presented in table 5.1 and figure 5.1) by the peer researchers prior to the finalization and implementation of the online survey.

The results of the online survey were supplemented with information acquired during the focus group and adult interviews. Focus group participants were asked to identify current coping strategies, *how are you managing change?* Adult interviewees were also asked questions on the current adaptation strategies implemented by Inuit youth. The questions asked sought to learn from the adult interviewees how Inuit youth have adapted to and/or are coping with problematic conditions, *how do you think Inuit youth have dealt with the conditions or stressors that are affecting their lives? Do you think it has been difficult/easy for Inuit youth to manage these conditions or stressors?*. The questions were open ended and unprompted, and adaptation strategies were not suggested, rather, it was the adult interviewee and focus group participants who identified what strategies have been undertaken and by whom.

The results of the online survey, focus group and adult interviews revealed numerous adaptation measures employed by Inuit youth and institutions to cope with the identified exposures. Table 5.2 summarizes the current adaptation strategies implemented by Inuit

youth and local (community and regional) institutions in response to the documented exposures.

Table 5.3: Summary of adaptations implemented by Inuit youth and local institutions

EXPOSURE	ADAPTATIONS	
	INUIT YOUTH	**INSTITUTIONS**
Income inadequacy	• Rely on family members or social assistance for income	• IS Program
Food insecurity	• Rely on family members, friends, local institutions for food • Consume high amounts of affordable yet unhealthy foods	• A breakfast program is offered at Inuujaq school when resources are available • HTO organizes the receipt and distribution of country food when possible • GN Food Mail Program
Lack of infrastructure and housing	• Seek residence outside of Arctic Bay	• Nunavut Ten-Year Housing Strategy
Inadequate education system	• Move to another community to attend school • Complete General Education Diploma (GED) at Nunavut Arctic College	• BAM program implemented by the school with support from the RCMP
Limited employment opportunities	• Seek employment outside of Arctic Bay • Volunteer at community activities or for community organizations to gain transferable skills	• NYC summer employment • Inuujaq School after school library employment opportunity
High cost of transportation	• Borrow ski-doos, ATVs, etc. from friends and family • Seek employment (when possible) to accumulate funds to purchase own means of transportation	• Pivuut Pass • Gas subsidies • HSP
Limited support and resources for youth programs and services	• Inuit youth with support from NYC are learning how to write funding proposals, identify potential funding candidates, etc.	• Local institutions secure funds when possible
High suicide rates	• Speaking to the media about how suicide effects Inuit youth • NYC is planning to produce a film on suicide in Nunavut • Travel to conferences to learn more about suicide and suicide prevention	• Suicide prevention activities organized at school or by NYC and the Wellness Office • Support received from the QIA Embrace Life Council
Identity and self-esteem issues	• Become a member of NYC • Attend suicide prevention and wellness workshops • Talk to the wellness counselors • Get involved in activities that	• In discussions regarding the development of a community specific plan to address the factors causing low self-esteem

	boost self-esteem	
Impacts associated with climate change	• Inuit youth have identified and noted changes in the environment • Inuit youth will communicate with other more experienced hunters before traveling/hunting on the land or sea ice • Improving knowledge of technology such as GPS, satellite images, Google maps and ice conditions.	• HTO offers land skills and hunting training • HTO advises Inuit youth to travel/hunt with an adult, change times of travel/hunting, adapt hunting seasons, locations, etc. • NYC is increasing it's involvement in environmental change research

A number of adaptation strategies to reduce vulnerability to social and environmental change are evident in table 5.3. Despite the variation in the adaptation strategies presented in table 5.3 three general trends emerge regarding those implemented by Inuit youth and institutions in Arctic Bay: (1) adaptation strategies are most often reactionary and tend not to address the source of the problem, (2) the ability to adapt differs amongst Inuit youth depending on their educational attainment, family and household, peer group, involvement in structured youth activities, and access to income, and (3) planned adaptation strategies vary in effectiveness.

5.4.1 Types of Adaptation Strategies

Adaptation can be classified as anticipatory, reactive, planned, or autonomous. Adaptation strategies that include activities that are taken before impacts are observed are considered anticipatory, whereas those that occur after impacts have been felt are determined reactive (NRC, 2007). An example of an anticipatory adaptation strategy is the work of students, teachers and the community dentist to address diabetes and oral health problems. The Drop-the-Pop campaign is a school-based program designed to encourage healthy beverage and eating choices amongst children and youth. Schools,

such as Inuujaq, register for the challenge and receive information packages highlighting the advantages of limiting high sugar drinks. The campaign was formed in advance by a group of volunteers who were asked to come up with ideas to make the activities of the Drop-the-Pop campaign more applicable to Inuit children and youth in Arctic Bay. For example, although the campaign is school-based, family and community members were also encouraged to limit their consumption of pop to provide a supportive environment for the children and youth participating. Following redevelopment of the campaign a date was selected for the launch of the program and activities. A reactive adaptation was employed in Arctic Bay as a result of increasing incidents of bad coughs and colds identified by the nurses at the health centre. The nurses were concerned and sought community support for the distribution of a health message about the importance of hand washing.

Many of the adaptation strategies implemented in Arctic Bay are also the result of deliberate policy decisions (planned adaptation), or have occurred spontaneously (autonomous adaptation) (NRC, 2007). For example, due to the number of young Inuit babysitting, the health centre, with support from Inuujaq School and NYC, included a child provider course in their annual public education activities (planned adaptation). An autonomous adaptation strategy occurred following the resignation of various employees at the hamlet; as a result the Hamlet of Arctic Bay is now completely Inuit run.

Consistent with the trends identified in table 5.3 Inuit youth and local institutions tend to implement: reactionary, varying and planned adaptation strategies.

Reactionary Adaptation Strategies:

A reactionary adaptation strategy takes place after the impacts of change have been observed (Smit et al., 1999; IPCC 2001). The majority of adaptation strategies implemented by Inuit youth in Arctic Bay are reactionary. For example, in the spring, young Inuit men often race their ski-doos over pockets of open water and ice, however if temperatures are unusually high, their ability to interpret the depth of these waters is threatened. Often, these youth will change their plans at the last minute (e.g. not go out on the land), or respond to an unforeseen risk (e.g. returning to town earlier than planned due to unexpected oncoming weather).

Reactionary adaptation strategies are also implemented at Inuujaq School. During the most recent school year,

The school Community Counselor went door-to-door and sought students who were not in school and got them to go back.

This type of adaptation is unsustainable, since it does not address the root causes of why some Inuit children and youth are not continuing to attend school or why young Inuit men have difficulty racing their ski-doos over open water. Not addressing the root causes of why many Inuit youth do not remain in school in the first place, or cannot use the land and sea ice recreationally, does not result in the deterioration of the problem. As a result, Inuit youth in Arctic Bay could face a similar or worse situation in the future.

Varying Ability to Adapt:

Involvement in NYC, family cohesion, exposure to socio-economic problems and level of educational attainment varies amongst Inuit youth and is directly related to their ability to adapt. The distribution of employment and financial resources is not equal amongst community members and therefore some Inuit youth have greater access to resources (through parents and other family members) than others and can afford to plan and implement specific adaptation strategies (e.g. purchase alternative modes of transportation, store bought goods, navigation equipment, travel, participate in training and skills development programs within and outside of Arctic Bay) that others cannot. For example, adapting to environmental, particularly climate driven changes, was found to be constrained by the economic situation of many Inuit youth in Arctic Bay (e.g. ability to purchase gas to travel farther to harvest caribou and seals). Further, those Inuit youth who stated that they were members in NYC, participated in weekly meetings, attended workshops and activities, and appeared to socialize with a peer group that was also engaged with NYC were more likely to express confidence in their ability to address the problematic conditions and/or stressors they are experiencing in their lives.

Effectiveness of Planned Adaptation Strategies:

A third trend observed in the adaptation data obtained is related to the degree of effectiveness of a planned adaptation strategy. Planned adaptation strategies are the result of deliberate policy decisions, based on a clear perception that conditions have changed (or are about to change) and that measures are needed to return to, maintain, or achieve a desired state (Fall and Niang, 2005). Some planned adaptive strategies have been

formulated and implemented by Inuit youth with support from Inuujaq School and other relevant institutions (e.g. Government of Nunavut).

> *Utilizing a stay in school initiative from the Government of Nunavut, Inuujaq School was funded $400.00. With this money twenty hoodies were bought. They were awarded at given intervals for staying in school. The winners were be drawn by student council, many of whom are members of NYC.*

Further,

> *Students are acquiring credits through jewelry making, carving and the library clerk program. The staff continually tries to involve parents and elders, encouraging their participation in the school, to be apart of the life of the school.*

These adaptive strategies vary in effectiveness and are predominantly influenced by the availability, and extent, of financial and human resources. For example, when a program is formed and showing signs of success it may end due to the loss of funds or the person organizing the activity. As a result, Inuit youth expressed difficulty trusting and relying on these plans.

Access to the already limited support services available in the community (e.g. counseling) is also important. The community wellness counselor positions are occupied but the caseload requires one of the two counselors to travel for extended periods of time to a number of neighboring communities. The second wellness counselor is a long-term community member and many Inuit youth were hesitant to discuss some issues with her due to family ties. One Inuit youth explained that she felt apprehension about talking to this particular counselor because she was her mother's cousin. She was concerned that the information she revealed would be communicated back to her mother and that her trust would be betrayed.

To some Inuit youth calling the Nunavut Kamatsiaqtut Helpline[9] is an acceptable and effective means of managing an identity of self-esteem issue, but other Inuit youth have limited access to a telephone and the space in which to make a private call. Due to the current housing situation in Arctic Bay, some Inuit youth are better equipped to implement a planned adaptation strategy than others. Despite the good intentions of planned adaptation strategies, there are numerous problems to overcome. One of the ways these problems can be overcome is through involvement of Inuit youth in the development of adaptation strategies.

5.5 Recommendations from Inuit Youth to Enhance Adaptive Capacity

Table 5.4 (including tables 5.4.1 to 5.4.3) summarizes Inuit youth's recommendations on what can be done to enhance their adaptive capacity (column one). Inuit youth were asked to rank the predetermined strategies identified during the *SWOT* (2005) workshop in the fourth section of the online survey. Recommendations were formulated and discussed in detail during the fifth theme – *Enhancing Adaptive Capacity of Inuit Youth* of the focus group. Participants were asked to respond to the following questions; *are you concerned about the issues discussed? what can/should be done? by whom?* Inuit youth were also asked; *what do you require to better manage these changes in the future?* and *who is responsible for implementing these strategies/providing assistance?* Inuit youth then identified whether their recommendation requires implementation on an individual or institutional level (column two) and the potential outcome if their recommendation were carried out (column three). Table 5.4 (including tables 5.4.1 to 5.4.3) is categorized

[9] The Nunavut Kamatsiaqtut Help Line provides an anonymous and confidential telephone counseling and contact service for northerners who need to talk about personal problems or who are in crisis.

according to the larger processes (economic systems, environmental change, resources, and culture) presented in figure 5.1.

Table 5.4: Inuit youth recommendations on what can be done to enhance adaptive capacity and a summary of who is responsible for successful implementation

INUIT YOUTH RECOMMENDATIONS	IMPLEMENTED BY	OUTCOME
ECONOMIC SYSTEMS		
To address income inadequacy:		
Take advantage of local training and education opportunities so that when future employment opportunities become available you have a better chance of being hired	Youth	A proactive and planned approach that can be sustained within Arctic Bay
Create additional employment opportunities and partnerships	Local business, GN – Department of Economic Development	Local employment, motivation to finish school and obtain additional education/training.
To address limited employment opportunities:		
Get the school canteen going, if it was reopened another employment opportunity would be available to youth	Inuujaq School	Additional employment opportunities for Inuit youth
Look at what employment opportunities could be provided from eco-tourism and outfitting businesses, as well mining	Hamlet	Increase the diversity of local employment opportunities
Take advantage of employment opportunities that are available in town even if they are not ideal in order to gain experience	Youth	Acquire additional work experience
To address the high cost of transportation:		
Take advantage of the hunters support programs	Youth	Obtain subsidized equipment
Use your Pivuut fare when possible	Youth	Reduced air travel on Canadian North
Borrow and share means of transportation with family members and friends	Youth	To increase the number of Inuit youth who have access to the land, camping, hunting, etc.

Table 5.4.1: Inuit youth recommendations on what can be done to enhance adaptive capacity, and a summary of who is responsible for successful implementation

INUIT YOUTH RECOMMENDATIONS	IMPLEMENTED BY	OUTCOME
CULTURE		
To address high suicide rates:		
Implement the Nunavut Suicide Prevention Plan	GN	Decrease suicide rates
Programs that alleviate poverty	GN	Poverty linked to suicide
Resources to develop programs to address the circumstances that result in high suicide rates	Government of Canada Dept. of Health and Social Services	Addresses the root of the problem not the symptoms
Improve understanding of mental health and the impacts of social trauma		Current research which could improve understanding and translate to policy development
To address issues of identity and self-esteem:		
Travel as much as possible to learn what is available to youth outside of Arctic Bay and to develop a greater appreciation for Inuit culture and life	Youth GN	Expand knowledge base
Sign up for training opportunities	Youth	Gain applicable skills
Create a forum were youth can discuss issues of self-esteem, identity, suicide, etc.	NYC – Wellness Committee	Increase self-esteem
Talk to the wellness counselor, reduce her case load so she doesn't have to travel to other communities and leave Arctic Bay	GN – Department of Health	Increase self-esteem, focus on suicide prevention

Table 5.4.2: Inuit youth recommendations on what can be done to enhance adaptive capacity, and a summary of who is responsible for successful implementation

INUIT YOUTH RECOMMENDATIONS	IMPLEMENTED BY	OUTCOME
ENVIRONMENTAL CHANGE		
To address climate change:		
Talk to elders and hunters about changes in the environment and when to hunt and travel	Youth – HTO – Elders	Improve traditional, hunting and land based skills
Learn how to utilize GPS, satellite maps and other tools that can assist people on the land.	HTA	Decrease the risks associated with hunting and camping on the land and sea ice
Invest in machines with larger engines	Youth	To minimize risks
Purchase safety equipment to carry when hunting and camping	Youth	To minimize risks
The coast guard should patrol more often so that they are available during an emergency	GN	Increase safety and awareness
Travel with a friend or family member	Youth	To minimize risks
Don't live in the houses close to the beach or near the slumping sites	Hamlet – Housing Authority	
To address food insecurity:		
Reopen the student canteen	Youth	Food available at school
Increase the number of narwhal and other hunting practices	Hamlet	Acquire traditional knowledge and land skills
Restart the breakfast program and ensure volunteers and funds so it is offered throughout the school year	GN – Department of Health	Decrease food insecurity
Offer cooking classes at the nursing station	Hamlet	Families/youth will know how to prepare healthy meals
Reduce the cost of store bought foods	INAC – GN	
Improve understanding of the food mail program, how to order items by sealift or from grocery stores in the South	Hamlet – GN	Increase the number and diversity of people who make use of the food mail program

Table 5.4.3: Inuit youth recommendations on what can be done to enhance adaptive capacity, and a summary of who is responsible for successful implementation

INUIT YOUTH RECOMMENDATIONS	IMPLEMENTED BY	OUTCOME
	RESOURCES	
To address limitations in youth programs and services and the resources available to support them:		
Take issues to the MLA so that youth concerns are communicated to the legislative assembly	Youth	To insure programs developed are relevant to the concerns of Inuit youth
Work with youth groups in other communities	NYC	Cohesion in the messages communicated
Increase financial and human support to NYC	GN – CLEY – Dept. of Education	Increased community programs
Promote and encourage participation in existing programs e.g. Nunavut Youth Abroad, Nunavut Sivuniksavut, Cadets, Arctic Winter Games	Youth – NYC	Builds on the success of current projects, increases the number and success participants have in these programs
To address the lack of infrastructure:		
Increase the number of people in town who have the skills to build and repair houses (e.g. expand the trades/apprenticeship program offered at NAC)	Youth, GN – Department of Education	No longer dependant on hiring and bringing in outside skilled laborers
		Infrastructure in need of repair may be fixed
Implement the Inuit Specific Housing Strategy	GN, NTI	Address overcrowding and the resulting health impacts
To address low educational attainment levels (an inadequate education system):		
Expand the number of literacy programs that also preserve Inuit culture and language	GN – Department of Education - CLEY	Increase school attendance, learn traditional and land skills
	Inuujaq School	
Expand the number of programs that utilize the Mac Computer Lab	Inuujaq School	Increase the number of youth with transferable skills
Provide child care services at school	Inuujaq School	Increase school attendance
Offer additional Career Technology Studies Credit (CTS)	Hamlet - HTO	Incorporate traditional knowledge, hunting and land skills into the CTS program

5.6 Summary and Discussion of Current Vulnerability

The exposures faced by Inuit youth in Arctic Bay illustrate numerous challenges: (1) accessing the resources required to support themselves and their families, which they often start at a young age; (2) limited or no access to infrastructure; (3) lower rates of high school completion; (4) pressure to seek employment and education outside of their community; (5) difficulty participating in youth activities including after school sports and extra curricular cultural activities; (6) limitations due to income inadequacy, including restrictions visiting family and friends outside of Arctic Bay; and (7) self-conflict associated with feeling pulled in two directions which often leads to low self-esteem and incidents of suicide. As a result Inuit youth in Arctic Bay are less likely to begin or complete post-secondary education, face increased rates of unemployment, have access to fewer support structures and resources, and by remaining in Arctic Bay through adulthood may face a diminished overall health due to the limited programs and services available to them.

Inuit youth stated that the exposures they are faced with are interconnected and require analysis as a whole rather than as individual conditions. A dominant concern and risk to Inuit youth was income inadequacy, as this tends to lead to food insecurity. Food insecurity is also linked to employment, since the type of food purchased or harvested is dependant on factors that require financial resources. Self-esteem and identity issues were also found to be extremely complex for Inuit youth. Inuit youth are particularly affected by the speed and extent of social change (e.g. the impact of residential school attendance

on their parents and the translated emotions and mistrust of the education system) and the pressure to maintain one, not a dual identity (modern vs. traditional).

Although, socio-economic and cultural exposures, as a result of social change, were of greatest importance to Inuit youth, concerns regarding climate change were also identified as interconnected and important. While Inuit youth often did not understand the cause or outcomes of climate change they were concerned with potential impacts. For example, young Inuit men were worried that their ability, if they desired to hunt, camp and travel on the land and sea ice would be threatened.

CHAPTER SIX: *Future Vulnerability – Enhancing Adaptive Capacity*

The purpose of this chapter is to address objective three of the research: to identify future potential exposures – the likelihood of changing social and environmental conditions – and assess future adaptive capacity – the manner and degree to which Inuit youth will be able to adapt to the identified exposures. The chapter is divided into three sections. The chapter begins with an examination of the likelihood of changing social and environmental conditions. Current exposures are examined in light of future social and environmental change projections. Following this discussion, a summary of future exposures and the potential impacts on Inuit youth is presented. To conclude, future adaptive capacity is examined relative to the projected changes, which are expected to influence the nature of adaptation.

6.1 Exposures – Future Problematic Conditions and Concerns

Information regarding future vulnerability to social and environmental change was acquired from a variety of sources. General trends, statistical projections and comprehensive reports were analyzed to provide insight into the future vulnerability of Inuit youth. Comprehensive data on future social conditions in Nunavut is relatively scarce, limiting the discussion of the potential impacts to Inuit youth. General results from the ACIA and the IPCC were examined and extrapolated to anticipate future environmental conditions in Arctic Bay. Previous studies conducted in Nunavut, specifically Arctic Bay, were also reviewed.

The following sub sections present the information obtained regarding future vulnerability to the exposures discussed in chapter five.

6.1.1 Income Inadequacy

Inuit youth in Arctic Bay identified income inadequacy as a key exposure. A lack of income will continue to constrain Inuit youth and their ability to adapt in the future unless: (1) Inuit education and employment problems, (2) income shortfalls (ITK and ICC, 2007), and (3) the cost of living are addressed (Rogan, 2007).

Inuit Education and Employment:

Actions that address Inuit education and employment problems will likely have a positive effect on income and its distribution in Arctic Bay in the future. This may come in the form of increased employment opportunities associated with future development (e.g. mining, shipping, tourism). Inuit youth may also acquire the advanced training required to occupy a skilled job in the community (e.g. teacher, health care worker, store manager, electrician). As the pool of qualified Inuit employed expands, financial resources may be more readily available and distributed amongst family and peer groups. This could lead to improved food choices, community development and increased travel (locally and in and out of the community).

There are, however, some projected constraints to the possibility of increasing the rate of employment in the community that will need to be addressed, such as decreased sport hunting, and/or the creation and sale of cultural goods (e.g. carvings, jewelry, traditional clothing). This may come as a result of the increasing number of employment opportunities. Inuit have already documented their concerns regarding permanent employment and its impact on the amount of time spent on the land.

Income Shortfalls:

ITK and ICC (2007) present the following in the *Inuit Action Plan* to remedy income shortfalls: (1) increase the number of educated and trained Inuit filling jobs across a broad range of occupational categories, (2) increase the number of Inuit in apprenticeship programs, (3) maximize Inuit participation in training opportunities, and (4) identify and secure resources for the recruitment and retention of qualified Inuit in gainful employment. If the strategies presented in the *Inuit Action Plan* to remedy income inadequacy are implemented the ability of Inuit youth to cope to social and environmental change, such as increased cost of living, is likely to be enhanced.

Cost of Living:

There is a need to address the high cost of living, which directly affects income inadequacy, in Arctic Bay. The Nunavut Employees Union (NEU) recommends that salaries and social assistance be adjusted to account for: household size, high food costs, commodities, utilities, travel and whether housing is private or subsidized (Rogan, 2007).

6.1.2 Food Insecurity

Food security in Arctic Bay will be greatly impacted by climate change. Climate change projections for Arctic Bay are now supported with scientific data (ACIA, 2004; IPCC, 2001) as well as Inuit observations (Fox, 2002; Nickels et al., 2005; Ford, 2006). Observed changes relevant to food security include modifications in migration patterns of animals, temperature, precipitation regimes, later freezing and earlier break up of ice, as well as decreases in some plant and animal populations. Many of these changes are

already impacting access to and availability of country foods. Country foods are critical to the health of Inuit youth in Arctic Bay due to their nutritional, social and cultural importance (Blanchet *et al.*, 2000). For example, narwhal is one of the most important food sources for Inuit in Arctic Bay. In recent decades, observations regarding the size and abundance of the narwhal population have been documented. To hunt, catch and share narwhal is the essence of Inuit culture. Thus, a decline in narwhal threatens not only the dietary requirements of Inuit but also their way of life.

Climate change is also likely to affect the cost of many imported foods (increased air shipping costs). In an effort to reduce food insecurity in Inuit communities, Health Canada has initiated the Food Mail Program in collaboration with the Ministry of INAC. The Food Mail Program subsidizes the costs of nutritious perishable food, resulting in a reduced shelf price for consumers.

Harvesting activities, with support from the HSP, are also contributing to the reduction of food insecurity. The HSP, through NTI, provides financial assistance to harvesters who need hunting equipment and sewing supplies (ITK, 2007). In addition, funds from the HSP support various activities coordinated by local HTOs. The roles and responsibilities of community HTO's include (NITC, 2008).

- providing community input into wildlife management;
- acting as a network for circulating information at the community level on wildlife and hunting-related policies, regulations, and legislation;

- giving hunters a voice in promoting harvesting in Nunavut by providing community feedback to NTI, Regional Inuit Associations (RIA), Institutions of Public Government, and government on matters related to Wildlife management;
- reviewing and approving proposals to conduct research and community-based wildlife-related projects;
- participating in the Nunavut Harvest Study, Inuit Impact and Benefit Agreement (IBA) negotiations, and in a number of other implementation responsibilities; and
- providing assistance to NTI in delivering programs such as the Nunavut HSP.

Work by NTI and the Government of Nunavut has identified, in light of climate change, the need to expand the Food Mail and HSP to include new activities that teach Inuit youth harvesting and survival skills and how to maintain equipment and infrastructure (NTI and GN, 2006).

6.1.3 Infrastructure and Housing

NTI and the Government of Nunavut have submitted a *Ten Year Inuit Housing Action Plan* to INAC outlining the number of units that are in immediate need of repair and the number of new units required per year over a decade (NTI and GN, 2004). In this report, demographic housing and infrastructure requirements are developed from future trends in population growth in different age groups. These trends focus on the likelihood that each age group will form family (composed of people related by blood or marriage) and non-

family households (composed of one person or two more unrelated persons) consistent with previous patterns (NTI and GN, 2004). Utilizing this criterion table 6.1 summarizes the three most likely population projections for Nunavut in 2016.

Table 6.1: Population Projections for Nunavut 2001 – 2016[10]

PROJECTION YEAR	LOW	MEDIUM	HIGH
2001	28,100	28,200	28,300
2016	33,900	35,500	38,800
Difference	+ 5,800	+ 7,300	+ 10,500

Population figures are then utilized to determine long-term household and housing requirements projections.

Table 6.2: Projected Total Numbers of Nunavut Households 2001 – 2016[11]

PROJECTION YEAR	LOW	MEDIUM	HIGH
2001	7,195	7,210	7,285
2016	11,000	11,310	11,865
Difference	+ 3,805 or 250-255 average	+ 4,100 or 270-275average annual requirement	+ 4,580 or 300-305average annual requirement

Based on the data presented in tables 6.1 and 6.2 Nunavut requires annual housing production in excess of 500-600 units a year to make progress on its backlog of need and to accommodate for future growth (GN and NTI, 2005). If the federal government fulfills the recommendations in the ten-year plan, the adaptive capacity of Inuit youth to socioeconomic vulnerabilities such as; employment, education, identity and well being

[10] Statistics Canada. *Population Projections for Canada, Provinces and Territories 2000-2026,* Catalogue No. 91-520. The actual population was 28,121.

[11] Calculated from Statistics Canada, *Population Projections for Canada, Provinces and Territories 2000-2026,* Catalogue No. 91-520, and from Roger Lewis, *The Long-term Housing Outlook: Household Growth in Canada and the Provinces, 1991-2016.* The actual number of households counted in the Census was 7,175. The Statistics Canada projections were based mainly on1996 Census data and on data from between the Census years.

are likely to improve. Potential socioeconomic benefits stemming from a long term housing strategy include local training opportunities in a variety of trades, increased local community expenditures and mitigation of health and social problems associated with overcrowding (ITK, 2008), such as the difficult task of completing homework assignments identified by Inuit youth who participated in the focus group and online survey.

6.1.4 Education

In 2001, 82% of Inuit were conversant with Inuktitut while 90% of Inuit adults stated that keeping, learning or relearning their language was very or somewhat important to them (O'Donnell and Tait, 2003). To ensure the increased use of Inuktitut in Nunavut, national and regional Inuit organizations in cooperation with the government of Nunavut are working to increase the use of Inuktitut at the national and regional level. ITK and ICC have proposed the development of a *National Inuit Language Strategic Plan*, to promote Inuit language and culture (ITK and ICC, 2007). This document will contribute to the efforts of the Nunavut Department of Education. The Nunavut Department of education has established a set of principles, values and beliefs underlying its own action plans and focusing on:

- the adoption of an education act specific to Nunavut;
- the development of a universal education program from kindergarten to grade 12;
- a policy on languages of education, particularly the teaching of Inuktitut; and

- the establishment of a bilingual education system.

The establishment of a bilingual education is also identified in Thomas Berger's *Final Report on the Implementation of the Nunavut Land Claims Agreement.* This report emphasizes the need for the establishment of an Inuktitut and English bilingual education system in Nunavut from Kindergarten to Grade 12. If implemented, Berger predicts the level of Inuit employment in the public and private sectors in Nunavut to increase. Berger's report also advocates for increased financial commitment to local post secondary education and training opportunities such as those offered by NAC. For example, the Akitsiraq Law School is a fully accredited law school program offered by NAC in partnership with the University of Victoria. This program, and others by NAC (e.g. NTEP, Fur Production and Design Certificate), have the potential to increase the supply of qualified Inuit professionals.

6.1.5 Employment

Future resource development in Arctic Bay, such as mining, has the potential to moderate the implications of future social and environmental change if appropriate Inuit Impact Benefit Agreements (IIBA's) are negotiated with developers. The GN Department of Economic Development and Transportation has developed three priorities to ensure the development of a strong and viable mining economy utilizing IIBA's: (1) increased investment in support of mineral exploration and developing, including investing in collecting and providing basic geosciences information and strategic investments in marine, air and road transportation and infrastructure; (2) working with industry to streamline and clarify the approval processes while still maintaining environmental and socio-economic requirements; and (3) ensuring that Nunavut businesses and workers,

such as those in Arctic Bay, have the basic capacity and training to meet the needs of mining companies.

Throughout the field season Inuit youth maintained that increased employment opportunities, particularly those positions that incorporated Inuit culture and values, would enhance their identity and self-esteem.

6.1.6 Identify and Self-esteem

Identity and self-esteem are linked to many factors that could constrain or enhance adaptive capacity. Improved access to resources, reduction in poverty, improved education, community participation in decision making, and respect for local experience and culture were identified as requirements for improvements in self-esteem and the enhancement of adaptive capacity. For example, the socio-cultural aspects of harvesting are vital to the future well being of Inuit youth. Hunting and harvesting can reinforce a rapport with the land that traditionally cultivated Inuit culture, identity and feelings of self-reliance (ITK, 2008). Post-harvesting activities are also important for strengthening familial and communal bonds, because Inuit have a deeply embedded practice of sharing country food with family and community members (Statistics Canada, 2006). It is also critical that elders have the opportunity to pass on skills and knowledge to Inuit youth. Harvesting and the passing on of related knowledge and skills contribute to community cohesion and self esteem and knowledge of resources and the environment. Combined these factors increase social relationships, which may help Inuit youth, better manage

risks associated with social and environmental change, potentially reducing associated incidents of suicide.

6.1.7 Suicide

According to the *Qaujivallianiq inuusirijauvalauqtunik* study, unless appropriate and concerted efforts are made, it is entirely possible that suicide rates in Nunavut will remain at or near their current rates in the future. Nationally, NYC has been working with NIYC to develop a Nunavut suicide prevention strategy. Locally, NYC collaborates with the wellness counselors, RCMP officers and teachers to increase the number of suicide prevention workshops and programs offered. NYC also advocates for a community centre and youth specific policies and programs regarding suicide. The increasing involvement of Inuit youth in program development may result in more effective, youth specific knowledge and activities, increasing the success of suicide prevention strategies implemented in Arctic Bay.

If the efforts of NYC do lead to the establishment of a local community centre the adaptive capacity of Inuit youth to cope with change could be further enhanced. In Iqaluit, the Tukisigiarvik Centre (a cultural appropriate community support centre) has had success offering counseling, healing and other services to youth. Staffing includes two counselors and Elder advisors who assist people with a variety of issues including homelessness, family problems, parenting, anger management, employment strategies and acquiring traditional skills (ITK, 2008). The centre benefits the community, particularly Inuit youth, in several ways. Services are offered close to home, it provides

local employment opportunities for Inuit youth and elders, and it reduces the need for expensive medical transfers to the south (George, 2004). In order to build on the success of the Tukisigiarvik Centre, significant investments in youth specific resources is required.

6.1.8 Resources for Youth Programs and Services

NYC is making significant efforts to address a number of socioeconomic conditions experienced by Inuit youth in Arctic Bay. The video club, which has approximately 30 members between the ages of 12 and 25, creates and posts productions online[12] and has worked with Carleton University on a traditional mapping project. The traditional mapping project utilizes Google Earth to identify approximately 300 traditional Inuit camps around Arctic Bay with names, photos, GPS coordinates and related stories from elders. Despite the success of the video club the need for advanced technology (e.g. additional cameras, software, etc.) and the training to make use of such equipment is considerable. In an effort to address some of the limitations of the video club, NYC has coordinated a number of relevant activities in partnership with Skills Canada and the Canadian Broadcasting Company (CBC). Consist with NYC's process regarding travel and workshop attendance; the video club supports the participation of one or more Inuit youth (dependent on the finances available) in these training programs. Upon returning to Arctic Bay these Inuit youth serve as role models to those who could not attend, passing on the skills and knowledge they acquired.

[12] Youth in the video club upload and share video clips on video sharing websites such as You Tube. Unregistered users can watch most videos on the site, while registered users are permitted to upload an unlimited number of videos.

Youth role models are a very valuable investment. One youth recently organized a soccer team of twelve young people to go over to Pond Inlet for a tournament. Other youth have attended workshops and conferences. When they return they present at the NYC monthly meeting, sharing their experience.

For example,

Three youth attended the White Stone Suicide Prevention Training workshop, since returning to Arctic Bay they have passed on the skills and knowledge they gained to others.

Cohesion amongst Inuit youth in the community helps to increase knowledge sharing and results in a coordinated approach when applying for financial resources. For example, NYC assessed the potential of eco-tourism to increase local employment opportunities and connect Inuit youth and elders through traditional hunting and navigation training. If Inuit youth, unified under NYC, are able to secure local and territorial support for this strategy their ability to respond to future social and environmental conditions, such as climate change, may be improved.

6.1.9 Climate Change

A range of potential consequences associated with climate change can be expected in Arctic Bay. Direct negative impacts are likely to include increased heat stress and accidents associated with unusual ice and weather conditions (ACIA, 2005). Indirect impacts include effects on diet due to changes in the access to and availability of subsistence foods, increased mental and social stresses related to change in the environment and lifestyle, potential change in bacterial and viral proliferation, mosquito borne disease outbreaks, changes in access to quality drinking water, and illness resulting from sanitation system problems (ACIA, 2005).

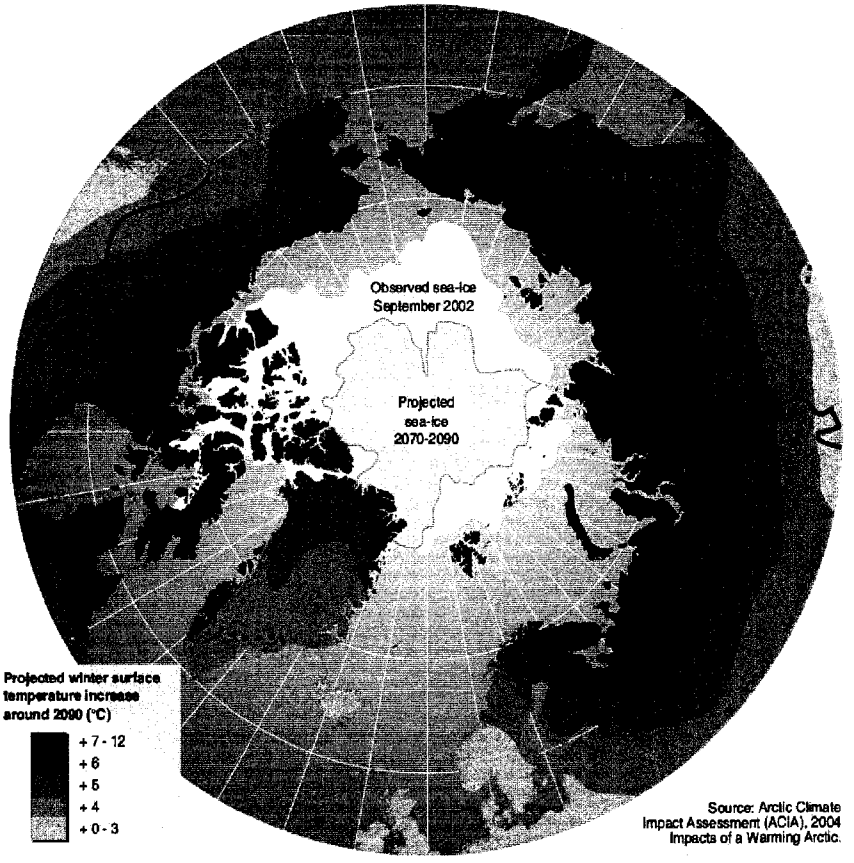
There are distinct links between climate change and food security. Inuit youth utilize the land and sea ice for recreational purposes, to access hunting areas, and to travel to camping sites and other communities with their peers and/or families. The ability of young Inuit to hunt, camp, travel and enjoy the land and sea ice safely is already problematic and is likely to be a challenge in the future if climate change projections are realized. For example, warming in the Canadian Arctic could disrupt the spawning grounds of fish in high latitudes leading to a substantial redistribution of important marine species (ACIA, 2005; IPCC, 1990, 1997, 2001).

Rising temperatures are also impacting the ability of Inuit youth to access the ice. For example, Inuit youth are having difficulty navigating traditional routes. This problem is projected to increase as temperatures continue to rise. Temperature increases could also lead to further erosion and infrastructure problems. Frost heave and thaw induced weakening are major forces affecting roadway performance and transportation routes (ACIA, 2005). For example, a row of houses in Arctic Bay is located meters from the coastline and existing trails and roads often become damaged during the spring melt. The projected rate of warming and its effects will need to be taken into account in the design of all new construction, requiring deeper pilings, thicker insulation, and other costly measures (ACIA, 2005).

6.1.10 Transportation

Climate change studies indicate a decline in Arctic sea ice extent in all seasons, with the most prominent retreat in the summer (ACIA, 2005). Recent studies estimate Arctic wide reductions in annual average thickness of about 10-15% over the next few decades (ACIA, 2005). Together, these trends indicate an Arctic ocean with longer seasons of less sea ice cover and reduced thickness, implying improved ship accessibility around the margins of the Arctic Basin (ACIA, 2005). Figure 6.1 illustrates the projected winter surface temperature and sea ice extent for the time period 2070-2090.

Figure 6.1: Projected winter surface temperature increases and projected sea ice (ACIA, 2005)



As the decline in Arctic sea ice continues to open previously closed passages, issues regarding sovereignty may become urgent. An increase in potential conflicts among competing users of Arctic waters will stress the capacity of the Canadian Rangers. The need to expand the number of Nunavut Rangers will impact may of the Inuit youth in Arctic Bay who participate in the cadets program, only a few of whom are able to attend the Junior Rangers training camp each summer.

The predicted reduction in sea ice extent and the resulting increase in shipping transport will increase non-renewable resource prospecting and extraction, oil transport, coastal

development and open areas surrounding Arctic Bay to fisheries. As a result, marine life could be threatened; the probability of the introduction of invasive species could increase, as well as incidents of dumping and oil spills (ACIA, 2005). A recent study suggests that the effects of oil spills in high latitude, cold ocean environment, last much longer and are far worse then expected (ACIA, 2005).

6.2 Summary of Future Vulnerability

Many of the current drivers of change in Arctic Bay are projected to continue or intensify in the future, including climatic warming, extraction of raw materials, further penetration of western culture, population growth, land use change and development. All of these expected changes originate primarily from pressures outside Nunavut, so Inuit youth cannot readily reverse these trends. Instead, Inuit youth must be prepared to learn, cope, and adapt.

Despite the potential changes presented in this thesis, the attitude expressed by Inuit youth and adults working on youth programs in Arctic Bay is one of optimism. Evidence suggests that increased local employment opportunities along with conditions of improved housing, will contribute to improved feelings of self-esteem, possibly decreasing the occurrence of violence and suicide rates. Employment and adequate income also has the potential to affect food security and the pursuit of higher education. Efforts to mobilize one another, participate in activities and programs that better themselves and their community, and provide positive role models for their younger peers, are also considerable amongst Inuit youth in Arctic Bay particularly those involved

in NYC. The benefits of this community youth organization are increasingly being recognized locally and nationally, as a means to maintain and enhance adaptive capacity.

6.3 Summary of Future Adaptive Capacity

Several factors were found to be constraining the adaptive capacity of Inuit youth. If the exposures discussed are not addressed it is likely that they will remain a concern in the future. To address these issues programs and policies that are implemented in the context of existing organizations, structures and institutions are required.

Local institutions, particularly the HTO, have been found to play a signification role in the adaptation of Inuit youth to interacting social and environmental changes, specifically climate change. In examining the role of institutions, institutional partnerships have been found to be crucial to the implementation and success of local adaptation practices (Agrawal, 2008). The Interagency Committee provides a mechanism for the formation of institutional partnerships in Arctic Bay. Table 6.3 presents a list of agencies and actors engaged in the activities of the Interagency Committee.

Table 6.3: Agencies and actors that can influence future adaptive capacity

AGENCIES/ACTORS
• Elders Committee • Mental Health • Inuujaq School • RCMP • Mental Health and Wellness • Hamlet • Anglican Church • Full Gospel Church • Economic Development • Community Health Representative • Health Centre • Daycare • Recreation • Alcohol Committee • Community Access Program • Cadets • Nunavut Power • Rangers • Hunter's and Trappers Organization • Women's Auxiliary • Nunavut Youth Consulting • Member of the Legislative Assembly • First Air • Bylaw Officer • Wildlife • District Education Authority • Caregivers • Youth Committee • Prenatal Program • Nunavut Arctic College • Northern Store • Co-op

All actors and agencies in Arctic Bay collaborate under the Interagency Committee. The purpose of the committee is to discuss community concerns, share information and expertise, and to contribute to the goal of proactively and successfully developing a healthy and sustainable community. Many of the topics discussed during the meetings of the Interagency Committee influence policy change around issues impacting the community. Issues and/or concerns are brought to the table, placed on the agenda of the next meeting, and discussed in a roundtable. Available and pertinent statistics and reports regarding the issues are also consulted. Through improved understanding of the issues the

group together works towards the development of a solution. The committee, when possible, utilizes and builds upon Arctic Bay's resources to the solution.

Through the Interagency Committee, local institutions can influence how different groups of Inuit youth gain access to, and are able to use, assets and resources. Inuit youth have varying levels of access to existing institutions through the Interagency Committee. Vulnerable Inuit youth are likely to have lower institutional access than those who have greater adaptive capacity. Before any external support for greater adaptive capacity is made available, therefore, an analysis of the nature of institutional linkages and access for different social groups of Inuit youth is critical (Argrawal, 2008). Once a clear understanding of this relationship is available, increased financial support and stronger linkages between the Interagency Committee and the Government of Nunavut could increase adaptive capacity amongst Inuit youth.

In addition to institutions, actors have been found to influence how Inuit youth gain access to, and are able to utilize, resources to adapt to social and environmental change. Actors most commonly identified by Inuit youth as responsible for implementation of adaptation strategies include members of NYC and cadets, educators and the community wellness counselors. These same actors are likely to play important roles in building future adaptation.

Table 6.4: Actors and activities currently facilitating adaptive capacity in Arctic Bay

ACTORS	ACTIVITIES	INFLUENCE ON FUTURE ADAPTIVE CAPACITY
NYC and Cadets	• Suicide prevention workshops • Travel • Media club • Committee meetings	• Confidence • Acquiring of training and support
HTO	• Hunting and navigation training activities	• Enhances understanding of the environment, traditional and modern hunting and navigation methods
Inuujaq School (educators)	• Various stay in school and/or attendance initiatives	• Higher educational attainment, increased and diversified employment opportunities
NAC	• Infrastructure • Internet • Meeting space • Education	• Inuit youth have a space to gather, conduct meetings and workshops, share coping mechanisms and strategies, acquire additional education and training.
Arctic Bay Wellness Centre (counselors)	• Suicide Prevention and Counseling Workshops	• Inuit youth gain skills which they than pass on to their peers
Interagency Committee	• Influences community development and growth	• Can lead to Inuit youth specific policies that address vulnerability and enhance adaptive capacity

When discussing the actors and activities currently facilitating adaptive capacity amongst Inuit youth in Arctic Bay, a number of specific actions taken by the community to address changing social and environmental conditions were raised. For example, additional financial and human resources to support successful stay in school initiatives. According to one high school teacher,

> *Inuujaq School is very encouraged by the good work that was done to get the library clerk program and the craving and jewelry classes going. These were both a big hit with students. Even though the school does not have the stats, reports from teachers are that the 10% target of keeping more high school students in school this year than last year has been greatly exceeded.*

Future adaptation should focus on the enhancement of current adaptive strategies, such as the above, and approaches that have facilitated adjustments in response to variability in social and/or environmental conditions.

CHAPTER SEVEN: *Experiences of Inuit Youth in Research*

The purpose of this chapter is to evaluate objective four of the research: have those Inuit youth who have been involved in the training and management of the research experienced an increase in their capacity to participate in research and/or deal with the social and environmental changes they are experiencing in their lives. The first section summarizes the experiences and importance of involving Inuit youth in the research. The process undertaken by the researcher to evaluate the extent to which adaptive capacity amongst those Inuit youth involved in the research is then described. Following this discussion the lessons learned and recommendations from those Inuit youth involved as peer-researchers are presented and analyzed. The chapter concludes with an overview of Inuit youth engagement in research.

7.1 Experience and Importance of Involving Inuit Youth in Research

This section highlights the experiences of Inuit youth in the research, with a focus on the ways in which Inuit youth were engaged and why their involvement was important. Involving Inuit youth in the research was important for the following reasons: it greatly enhanced the understanding of Inuit youth, it resulted in fresh perspectives and new insights regarding data collection and analysis and it provided an opportunity for Inuit youth to play a public role in their community. Consistent with the community based assessment of vulnerability the participation of community members, in this case Inuit youth, in the research improved the quality of the study by generating more reliable data. Those closest to the issue under investigation were involved in the formulation of research questions and the strategies to answer them. This enhanced the likelihood that

the findings will be useful, owned and acted upon by those involved in producing them. Inuit youth engaged in the research process also gained the tools to develop and validate knowledge and to influence the development of programs and policies designed to affect their lives.

The peer researchers trained and employed during this research project expressed improvements in their ability to manage their time, speak in public, present information, facilitate meetings, work in groups and think critically. Additional benefits acquired by Inuit youth include; the development of positive, respectful and trusting relationships with university researchers, acquiring of transferable skills and awareness of their ability to make a positive impact on their lives and community. They also developed greater self-confidence and community awareness, as well as a sense of responsibility and a belief in their ability to make necessary changes in Arctic Bay. Over time, the peer researchers acquired a sense of ownership of the project, pride in their involvement and responsibility for meeting goals. For example, NYC took the initiative to present the preliminary results of the research during the Arctic Bay trade show; this took place independently and was communicated to the university researcher following completion of the activity.

Through presentations made nationally and locally to disseminate the results of the research, Inuit youth may have broken down existing stereotypes of Inuit youth as disengaged. This appeared to have led to greater involvement and recognition of Inuit youth in other important settings (e.g. one of the peer-researchers was invited to

participate, with fellow Northerners and Inuit, in a round table discussion on research). This led to the suggestion that an Inuk youth be elected to the board of the local Interagency Committee. In creating more opportunities for Inuit youth to contribute to programs and policies that affect their lives, integration of Inuit youth perspectives in community decision-making processes, is likely to increase.

7.2 Evaluation of the Enhancement of Adaptive Capacity

To evaluate if, and to what extent, adaptive capacity was enhanced amongst Inuit youth the empowerment evaluation technique, developed in the participatory action and youth development literature, was utilized. The evaluation of the research according to this field of study is presented in table 7.1 (Males, 1996).

Table 7.1: Empowerment evaluation

OBJECTIVES OF THE RESEARCH	EVALUATION
Was the enhancement of adaptive capacity a stated objective?	Yes (objective four)
Who initiated the research?	James Ford and Erin Pratley's (University of Guelph) initial work in Arctic Bay identified the characterization of vulnerability and adaptive capacity from the perspective of Inuit youth as a research need. Follow up between the University of Guelph, NYC, and other relevant community organizations confirmed this research priority in a pre-research visit in February 2007.
Duration of the research	February 2007 to May 2008
Recruiting methods	Self-selecting, snowball and purposive
Number of Inuit youth involved as peer researchers	4
Incentives	CTS Credit Full-time employment for two months Pizza party and gifts for focus group participants Gifts for adult interviews
Youth involvement as peer researchers:	
Selected research topic	In part
Developed aim and objectives	Yes
Developed research procedures and methods	Yes
Completed training in conducting research	Yes
Recruited peers to participate	Yes
Identified adults to participate	Yes
Surveyed peers	Yes
Surveyed adults	No
Debriefed about research process/progress	Yes
Entered data	Yes
Analyzed data	In part
Presented findings	In part
Wrote publications	In part
Met with other youth researchers to share findings and experiences	Yes
Impacts of youth involvement:	
Increased participation	Yes
More complete data	Yes
Skills development	Yes
Community recognition	Undetermined

By taking a lead role in the research, Inuit youth became partners in assessing their vulnerability and adaptive capacity to social and environmental change. Specifically, this research project aimed to reduce vulnerability among younger generations by enhancing adaptive capacity through knowledge generation and the acquiring of transferable skills. Learning, through training and involvement in vulnerability assessment, about the conditions that shape vulnerability and adaptive capacity resulted in new knowledge and understanding which empowered and enhanced the capacity of Inuit youth in Arctic Bay (Argyris, 1985; Senge, 1990).

7.3 Lessons Learned from Engaging Inuit Youth in Research

This section presents recommendations, based on the experiences of NYC and the peer researchers, for future projects involving Inuit youth in research. Table 7.2 summarizes the recommendations provided by Inuit youth. These recommendations are targeted to researchers who wish to enhance the ability of Inuit youth to conduct research and adapt to change.

Table 7.2: Summary of lesson learned by peer-researchers

LESSON	EXPLANATION
Conduct a pre-research visit	Researchers, when possible, should conduct a pre-research visit to the community in which they are proposing to undertake their research project. Efforts demonstrated at this stage of the research often determine the success of the field season.
Hire Inuit youth from the preliminary stages of the research.	To assist a researcher in their transition into the community and to help this person better understand the local culture, weather, way of life and activities that will be taking place during their time in the community Inuit youth should be hired from the preliminary stages of the research.
Be aware of the differences working with youth	Inuit youth may prefer to work in different settings (for example at a local hang out), at different times (late afternoon and evening) and under conditions, which adults often wouldn't expect.
Think of your research project as a learning process for yourself and the Inuit youth you work with.	Inuit youth may have a number of skills that they can contribute to the project beyond understanding of the local language and culture.
Recognize and redistribute power to ensure meaningful participation.	Meaningful participation in research begins when the opinions and actions of Inuit youth are taken seriously and recognized as equal to the knowledge and ideas of adults. Projects should be modified as necessary to address community context (e.g. personal and family relationships of participants), factors such as diversity, the age of the participants and their socioeconomic background.
It is essential that Inuit youth that participate in research be consulted as to the extent to which they feel they have benefited from the research process.	Research projects should include a plan to evaluate the extent to which the participants of the research were empowered by their involvement in the research process.

According to Inuit youth involved in the research and development of table 7.2 (as participants or peer researchers), their involvement resulted in an increased awareness of the benefits, beyond the gathering of data, associated with engagement in research. Based on their experience, NYC recommends:

The import thing is to communicate your project to as many people as you can. Don't get frustrated if things seem like they are not moving forward or that there is lack of interest.

NYC also advises:

While you are going through the process of learning more about the community and your own research objectives the Inuit youth you engage with can also make significant (planned and unexpected) contributions. In addition, you bring a set of skills and experiences that Inuit youth may not have been exposed to. Think about how you can

exchange your skills with the Inuit youth involved in the research project. Most importantly, have fun. You are working with a group of bright, youthful individuals that enjoy life.

Many of the recommendations provided by Inuit youth in Arctic Bay are consistent with those presented in the ITK and NRI guide for researchers (ITK and NRI, 2007). The *Negotiating Research Relationships with Inuit Communities* guide presents some core themes in communication and relationship building that applies to natural, physical, biological, and social scientists working in the Canadian North (ITK and NRI, 2007). The guide describes how research projects are perceived by communities; as an important source of direct employment and revenue, a source for local training and professional experience (particularly for young people), and occasionally as a tool to support community advocacy and empowerment (e.g. providing scientific evidence to support community claims in the national and international arenas). NYC and the Inuit youth who participated in this project share this perception of research. Additional similarities include consultation, involvement throughout the research process, recognition, timing and the duration of the project and a sharing of knowledge and expertise. Unique to the recommendations of Inuit youth are their concerns regarding the power dynamics between adults and youth, and the disregard they often feel when expressing their issues and solutions.

7.4 Summary and Discussion of Inuit Youth Engagement in Research

This chapter has focused on the practice and benefits of engaging Inuit youth as partners in research. Efforts to involve Inuit youth as partners were built on well established participatory, youth-led and action research methods. This research project presented

Inuit youth with an opportunity to collectively study the issues and conditions that affect their vulnerability and adaptive capacity, while also encouraging respect for, and use of, multiple perspectives (their peers and appropriate adults) and multiple methodologies (e.g. the online survey). By promoting critical thinking and the exploration of the circumstances related to the research questions, this research went beyond fact gathering and report writing, according to the empowerment evaluation technique it enhanced capacity and contributed to knowledge building in Arctic Bay amongst relevant organizations and programs, and the research participants themselves.

CHAPTER EIGHT: *Summary and Conclusions*

This chapter summarizes the key findings of the research as they relate to the aim and stated objectives. The chapter is divided into five sections. The first section provides a summary of the key findings of the research, including insights into the future vulnerability and adaptive capacity of Inuit youth. In the second section, the issue of empowerment and its role in the research is highlighted. The third and fourth sections highlight the theoretical, empirical and practical contributions of the research. The chapter concludes with a discussion of future research opportunities and needs.

8.1 Summary of Key Findings

This research aimed to improve understanding of the nature of the vulnerability of Inuit youth in Arctic Bay. This was achieved by using youth-led participatory action research methods in the context of the community based vulnerability approach. In this research, the vulnerability approach was utilized to characterize the current relevant problematic conditions faced by Inuit youth, the ability of Inuit youth to adapt to the identified exposures and the role of research in the enhancement of adaptive capacity. How the problematic conditions identified advance, in light of predicted social and environmental change, was also investigated. The key findings of the research are presented in reference to the four research objectives.

Objective One: ***To identify current exposures*** *– the current conditions or stressors related to interacting social and environmental changes that Inuit youth have to deal with in their lives*

The current vulnerability of Inuit youth in Arctic Bay is a reflection of multiple influences and forces. Income and employment, food security, housing, education, and climate change have been identified by Inuit youth in Arctic Bay as key exposures. When discussing potential strategies to address these concerns dissatisfaction with the government and its inability to adequately respond to the needs of Nunavut's young and rapidly growing population was a reoccurring subject of discussion. However, Inuit youth, similarly to young people across Canada, have a limited understanding of the political process and stated that they rarely vote during elections. There is a need to better understand what motivates Inuit youth and educate and engage them in policy decisions. Developing an *Inuit Youth Action Plan* for Nunavut, similar to the *Keepers of the Light: Inuit Women's Action Plan* produced by the Pauktuutit Inuit Women of Canada, with the direct involvement of Inuit youth is recommended to assist in achieving this goal.

From the researcher's personal experience growing up in Nunavut, the quality and quantity of discussions with NYC since the preliminary stages of this project, and from ongoing communication with adults involved in youth programs and services in Arctic Bay it is clear that Inuit youth know best what challenges they are facing and have insights into how they should be addressed. However, it must be recognized that Inuit youth, as they identified themselves in the case of climate change, may not be aware of conditions and the degree of their associated impacts beyond their own experience and knowledge. As a result, their understanding of their current vulnerability requires support

and input from peers, adults and researchers locally, nationally and internationally. These adult-youth relationships will help to enhance the understanding of Inuit youth contributing to the enhancement of their adaptive capacity.

Objective Two: ***To assess current adaptive capacity*** *– they ways in which Inuit youth have coped with current conditions or stressors related to social and environmental changes –* ***and document Inuit youth's recommendations on what can be done to enhance their adaptive capacity***

There are constraints to adaptation at the individual, community and territorial level that could hinder the capacity of Inuit youth to respond to future exposures. The main constraints include: lack of financial and human resources; limited education and employment opportunities; social and economic inequalities; short-term planning; reactive responses; and an inability to trust, plan and invest in the future. For example, Inuit youth often questioned the benefit of completing high school when local employment opportunities are non-existent and stated that they felt restricted in their relationships and their ability to plan for their future.

Although numerous exposures were identified, few planned adaptive strategies are in place to deal with them. The majority of strategies are reactionary and do not deal with the source of the problem. In response to the circumstances created by the exposures identified, Inuit youth have begun to discuss and document their recommendations on what can be done to enhance their adaptive capacity. In order to appropriately and effectively fulfill these recommendations Inuit youth in Arctic Bay, through NYC and other institutions, must have access to and control of resources that will allow them to

initiate programs that meet their needs and create support networks for their most vulnerable peers. Control over resources would allow NYC to plan sustainable, integrated programs that address impacts associated with climate change, socio-economic disparities and cultural change, enhance adaptive capacity and lead to positive change.

It is apparent that immediate action needs to be taken to reduce poverty and improve living conditions in Arctic Bay. Inuit youth recognize that this is a problem they cannot address on their own and feel that there is a need for the Government of Canada to acknowledge the scope of the problems present in Inuit communities and to commit the resources required to address many of the exposures they face on a daily basis and implement their recommendations.

Objective Three: ***To identify future potential exposures*** *– the likelihood of changing social and environmental conditions –* ***and assess future adaptive capacity*** *– the manner and degree to which Inuit youth will be able to adapt to the future exposures identified.*

This research aimed to understand the nature of future vulnerability amongst Inuit youth in the community of Arctic Bay, Nunavut. A common theme in the activities of NYC and the comments made by Inuit youth who participated in the online survey was the perspective that when developing a strategy to address a particular problem or challenge, for the approach to be successful, it should focus on the positive, not solely on the problem or its symptoms. When considering the extent of future potential exposures and their degree of impact on Inuit youth it was found that institutions, locally, regionally and nationally, have a significant role to play in enhancing the adaptive capacity of Inuit youth, particularly those under pressure from social and environmental change.

When assessing future adaptive capacity it is also important to understand the role of the Interagency Committee and other regional and national institutions (e.g. NTI and ITK) in shaping adaptation. Institutions that link together such as the Interagency Committee disparate groups into coordinated wholes that have a positive role to play in communities, particularly when trying to improve adaptive planning and outcomes. Climate change scenarios anticipate local impacts and the effectiveness to adapt to these changing conditions will depend, in part, on institutions through which incentives for individual and collective action are structured. Existing institutions, such as the Interagency Committee, can facilitate adaptation to climate change by stimulating the development of collective responses, and shaping the outcomes of such responses.

Objective Four: ***To build adaptive capacity among Inuit youth*** *– through training and involvement in the research*

Inuit youth in Arctic Bay have an important understanding of what their challenges are and were empowered by their participation in the research. Consistent with the youth development literature, the adaptive capacity of Inuit youth in this project was evaluated on the evidence of (1) development and use of leadership skills; (2) critical thinking ability; (3) building of a diverse social network and a broad base of knowledge; (4) valuable skills such as writing, analysis, presentation, and advocacy; (5) opportunities to take on new roles and responsibilities involving decision making; (6) the formation of relationships with adults and members of the broader research community; and (7) activities where youth served as role models to their peers and as experts possessing

knowledge about issues that affect young people (Delgado, 2005). The process of enhancing capacity does not end with this research project. This study has the potential to continue to build adaptive capacity amongst Inuit youth through knowledge exchanged, networking and future volunteer and employment opportunities.

Building capacity was fundamental to the success of this research project and required financial resources, infrastructure as well as education and awareness raising activities that enabled Inuit youth and the institutions that represent them to be empowered and make well-informed, sustainable decisions.

8.2 Empowerment

One of the sub-goals of this research was to increase the adaptive capacity of Inuit youth. Youth-led participatory action research is a learning strategy for empowering participants and only secondary as producing research. In this research project this entailed increasing the ability of Inuit youth to take control of their own lives and become empowered, active and participating members in Arctic Bay and Nunavut in general. Through involvement in the research Inuit youth, particularly those involved as peer-researchers, were empowered by the chance to participate in research and decision making about their future.

According to the Center of Excellence for Youth Engagement, meaningful youth engagement produces benefits to youth and the communities in which they live. Through engagement, youth gain a sense of empowerment as individuals and make healthy

connections to others; resulting in the reduction of risk behaviors and increases in positive activities. In addition, the community may gain through the energy and ideas that youth bring to organizations, activities, and their improved relationships with adults (Morse et al., 2003). A specific focus of the empowerment process in this research was to assist Inuit youth in informing, and eventually influencing policies and programming in Nunavut so that community based approaches reflect the large Inuit youth population in Nunavut and their specific realities.

The empowerment process in this research varied depending on the level of interest in, and commitment to, the project. For example, many Inuit youth preferred their level of involvement to be limited to participation in the focus group and online survey; others insisted inclusion and participation for the duration of the research as a peer researcher. One peer researcher extended her involvement, accepting invitations to participate in two Canadian conferences (the ACUNS Student Conference on Northern Studies and the ArcticNet Annual Scientific Meeting 2007) to present the results of the research and discuss the theory and methods of youth-led participatory action research utilized in Arctic Bay. These conferences and the opportunity to exchange her experience and knowledge with other researchers greatly enhanced the empowerment process.

8.3 Research Limitations

Several limitations, in addition to those anticipated in chapter four, were documented throughout the research. Although this research project achieved important benefits for its participants inadequate resources, timing and commitment to the project limited the

outcomes. For example, consistent participation was often a problem. Several Inuit youth were often involved in other activities, camping or hunting due to the season in which this research took place, or assisting their families (e.g. many young women were babysitting or caring for their own children).

The transformation of power relations also proved to be more challenging than anticipated. Initially, the research project proposed that the role of adults in the project would be to assist and guide Inuit youth. Following the training and employment of the peer researchers it became apparent that it was more appropriate for the university researcher to conduct the adult interviews. The transfer of power was far more complex than perceived and often the peer researchers were uncomfortable and preferred not to be in control of guiding focus groups or presenting independently on the results of the research.

It also appeared to be difficult for Inuit youth to distinguish between their individual beliefs/concerns and those of their generation collectively. For example, during the focus group when discussing a particular exposure and its impact on Inuit youth in Arctic Bay the majority of participants would speak passionately about their frustration with the resulting impacts. When encouraged to examine a particular exposure from the perspective of a peer, participants had difficulty, for example recognizing how the socio-economic status of an individual impacted their ability to cope with change and how this could be different then their own experience. To overcome this challenge, additional discussions between the researcher, peer-researchers, and participants were required.

Following reflection of the field season and research process a number of additional weaknesses were identified. The sampling strategy, although efforts were made by the researcher, may have missed an interesting section of Inuit youth, those that may have spent their summer at the outpost camps. These Inuit youth may have unique perspectives that would have greatly contributed to the research.

Finally, the methods to disseminate the research (table 4.12) were not met in full, due to financial and time constraints a video documenting the results of the research was not produced and a comparative study/exchange with another Inuit youth group was not possible.

8.4 Theoretical and Empirical Contributions

Previous research in the Canadian Arctic focused on the first generation of adolescents to be raised within the context of permanent settlement (Condon, 1987). Later work, examined social structural changes and their impact on traditional patterns (e.g. conflict resolution, family structures, marriage, organized recreation) (Condon, 1987; Condon, 1992; Condon, 1995; Condon and Stern, 1993; Collings and Condon, 1996). Research then examined the involvement of young Inuit men in the local subsistence economy. This research identified the economic constraints that prevented Inuit men from becoming active and efficient hunters and analyzed the role of subsistence activity in identity formation and well being (Colllings, Wenzel and Condon, 1995). Recent vulnerability studies highlight community concerns regarding a loss of traditional skills among the growing population of Inuit youth (Pratley, 2005; Pearce, 2005; Ford, 2006a,

b). These studies identified the need for improved understanding of how Inuit youth experience and respond to change given emerging and potential climate change impacts.

This research utilized a theoretical framework for community vulnerability assessment. Methodologies consistent with the community vulnerability assessment approach were supplemented with those of youth-led and participatory action research, to identify current and future exposures and assess adaptive capacity. The use of a common methodology and approach, in the development of this case study, allows for the comparison and integration of results with other vulnerability assessments in the Arctic (Pratley, 2005; Pearce, 2005; Ford, 2006). Preliminary comparison of these studies indicates the significance of the need to address social determinants, the role of institutions in adaptive capacity, and the distinct experience of Inuit youth and their responses to change. The comparison and integration of the knowledge generated from community vulnerability assessments from an Inuit youth perspective can advise regional and national policy on vulnerability and adaptation to social and environmental change. Knowledge from a new and previously overlooked group, in this case Inuit youth, will only further inform policy development.

This research advances the understanding of the vulnerability and adaptive capacity of Inuit youth in changing Arctic communities. This research also contributes to the fields of youth-led and participatory action research, since little reporting on the process and outcomes of such work is present in the literature.

The Inuit youth of Arctic Bay hope this research helps the scholarly community better understand what it means to grow up in Arctic Bay, what historical and current challenges they face, what concerns they have for their future, what adults and institutions they depend on and what recommendations they would like to see incorporated into the strategies designed to enhance adaptation and reduce vulnerability.

8.5 Practical Contributions

This research has contributed to the community of Arctic Bay through the development of a baseline understanding of what social and environmental changes Inuit youth are currently experiencing and how these changes are affecting their lives. In addition, by examining the present experiences and responses of Inuit youth to changes this research has provided an empirical foundation for a more detailed assessment of how future changes may affect Inuit youth. In a practical sense, this research has enhanced adaptive capacity amongst younger generation community members through knowledge exchanged with university researchers, training in research methods and employment.

Methodologically, the specific approach and methods applied in this research are relatively contemporary for the purpose of assessing vulnerability. Engaging Inuit youth in vulnerability research generated useful knowledge for communities and individuals and provided opportunities for the development and empowerment of Inuit youth participants, leading to benefits for young people, organizations, the broader community, and the research process. This study offers the field of vulnerability examples of methods

to engage Inuit youth in research and build capacity during vulnerability assessment. It also indicates strengths and limitations to be improved upon for further research.

8.6 Research Opportunities and Needs

This research, "youth-led research: assessing the vulnerability of Inuit youth in Arctic Bay to social and environmental change" has attempted to address a number of gaps in knowledge. It has been determined that Inuit youth have incredible ability to adapt but are limited by social and environmental conditions. This requires the development of programs and policies that reduce social and economic disparities and promote cultural identity within a changing society. Although this research has provided insights on the vulnerability of Arctic communities to exposures associated with change from the perspective of Inuit youth, research regarding the extent and specifics of the programs and policies required to address these risks is necessary.

The results produced from administering the focus group and *Arctic Bay Youth Survey* provided a preliminary assessment of the needs and priorities of Inuit youth in regards to changing social and environmental conditions. However, the findings should not be considered fully representative of Inuit youth across the Arctic. In order to achieve a more comprehensive understanding of the collective opinions that Inuit youth have towards change, a more in-depth and multi-faceted research project is necessary.

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APPENDICES

APPENDIX 1 – *Contact Letter*

Meghan McKenna
Department of Geography - University of Guelph
Guelph, ON Canada N1G 2W1

January 30th, 2007

To Whom It May Concern:

Hello, my name is Meghan McKenna and I am masters student in the Department of Geography at the University of Guelph, Ontario. I grew-up in Pangirtung and Iqaluit and I am excited to be able to explore research opportunities in Nunavut. I am contacting you to introduce myself and to propose a collaborative research project that would work with Inuit youth in Arctic Bay to learn how youth are experiencing and dealing with social and environmental changes and identify, with youth, what can be done to help youth cope with future changes. I will be visiting Arctic Bay with James Ford, who has worked in your community in the past, and Tristan Pearce, who works with communities in the western Arctic, from February 15th -22nd. I would like to discuss this project and the possibility of working with youth and your community during this visit.

The work aims to:

1) develop an understanding with youth how social and environmental change interact to affect the well-being of Arctic Bay, particularly youth,
2) identify youth's recommendations on what can be done to better cope with these changes,
3) establish with youth research and policy initiatives that will enhance adaptive capacity in the future, and
4) build capacity for research and transferable skills among youth.

I hope that community members might be interested in contributing to the planning, directing, field work, methods, analysis, and reporting stages of this research. There will be plenty of opportunities for you to provide input into the research design and direction throughout my time in Arctic Bay, along with any concerns or suggestions that you may have.

I have been in communication with representatives from Nunavut Arctic College, Nunavut Youth Consulting, Inuit Tapiriit Kanatami, Inuit Circumpolar Conference, and the Nunavut Research Institute.

Thank you,

APPENDIX 2 – *Community Flyer*

Youth-led Vulnerability Research and Adaptation to Change

Hello! My name is Meghan McKenna and I am from Pangnirtung and Iqaluit. Currently, I am a graduate student in the Department of Geography at the University of Guelph in Guelph, Ontario. I am here to propose a collaborative research project that would work with youth in Arctic Bay to learn how youth are experiencing and dealing with social and environmental changes. When I am not at school I'm at home with friends and family in Iqaluit. I look forward to meeting with you, hearing your opinions, and working with you.

In this leaflet I explain the research I am involved with and how you can get involved in planning and designing the research program.

PROJECT BACKGROUND

The project is concerned with how social and environmental change interact to affect youth, what the ability of youth is to manage these changes, and the strategies and policies that might help youth cope with future changes.

OBJECTIVES

1) **I want to develop an understanding with youth of how social and environmental changes interact to affect the well-being of Arctic Bay, particularly youth.**

2) **I am interested in hearing youth's recommendations on what can be done to better cope with these changes.**

3) **I would like to identify with youth research and policy initiatives that will enhance adaptive capacity in the future, and**

4) **I want to help build capacity for research and transferable skills amongst youth.**

VISITS TO ARCTIC BAY

Preliminary Visit – February 15th – 22nd 2007

I will be in Arctic Bay from February 15th – 22nd. During this visit I would like to meet and discuss the project with you, hear any comments you have, and answer questions. I hope that community members, especially youth will be interested in contributing to the planning and design of the research in terms of the methods used, the timing of the field work, the people to be interviewed, how the research will be reported, and in the identification of potential research collaborators / interpreters.

Second Visit – between April 1st and August 31st 2007

If you find the project useful than a follow up trip will be undertaken at a time you specify. This trip could last approximately three months and would involve research training, focus groups, and interviews with youth by youth.

GETTING INVOLVED

I invite those who are interested in being involved, or taking part in designing the methodology, or who have views about the project or the techniques, or who want to be research assistants, to contact me when I am in the community, or at:

Meghan McKenna
Dept. of Geography
University of Guelph
Guelph, Ontario
N1G 2W1
e-mail: mmckenna@uoguelph.ca

Thank you!

APPENDIX – 3 ***Research Guide (Focus Group and Adult Interviews)***

Youth-led Vulnerability Research and Adaptation to Change – Focus Group

Facilitated By: Nunavut Youth Consulting/Meghan McKenna
Date: June 7th 2007
Location: Nunavut Arctic College
Time: 7:00 to 9:30

7:00 – 7:15:

- Tell everyone they can grab a snack/drink and take a seat somewhere
- Have everyone sign the consent form and explain that they have to do this because everything is being recorded, filmed and photographed
- Explain what the purpose of this exercise is and why it is important (that it is contributing to the wellness plan, to a report for the Nunavut Research Institute, and to a research project that will help to create awareness about the issues youth in Arctic Bay are facing)
- Go through the agenda and ask if anyone has any questions or concerns before we start

7:15 – 8:00:

Goal: **To identify current exposures** – the current conditions or stressors (related to interacting social and environmental changes) that youth have had to deal with in their lives

Theme One: Youth Identity

- Have everyone fill out the personal information table (after the focus group is over staple this handout to their consent form

1) *What has growing up in Arctic Bay been like?*

Theme Two: Current Exposures

2) *What changes have you experienced in your life?*

Note: This would be the ideal time to conduct the dotmocracy. Ask youth to write down a change that they have experienced in their life and then tape it to the wall/chalkboard. Once everyone has posted their change, hand out stickers (dependant on the number of participants) to each youth and ask them to identify the issues they feel are the most important. The changes youth are most concerned about, as identified by the number of stickers on each change, can then become the focus of the rest of the interview/focus group.

3) *How have these changes affected your life?*

3a) *Have you always been affected by these changes?*

4) *Why have these changes affected your life but not others?*

5) *Why are _____, _____, _____, and _____ the most important changes affecting your lives?*

8:00 – 8:10:

- Break time!

8:10 – 8:40:

Goal: To assess current adaptive capacity – the ways in which youth have coped with current conditions or stressors (related to interacting social and environmental changes)

Theme Three: Current Coping Strategies

6) *How have you dealt with the changes that are affecting your life?*

6a) *Why have you dealt with the changes in these ways? Why not other ways?*

6b) *Has it been difficult/easy to manage these changes?*

7) *Has anyone/anything helped you to deal with the changes that are affecting your life?*

8) *Has anyone/anything made it harder for you to deal with the changes that are affecting your life?*

8:40 – 9:10:

Goal: To document youth's recommendations on what can be done to enhance their adaptive capacity – the ways in which the ability of youth to cope with current conditions or stressors (related to interacting social and environmental changes) could be enhanced

Theme Four: Enhancing Adaptive Capacity

9) *Do you feel that there are things that could be done to help you better deal with the changes that are affecting your life?*

9a) *If yes what could be done to help you better deal with the changes affecting your life?*

9b) *If no why don't you need any help?*

9c) *If yes who do you think should be responsible for implementing your ideas? Providing the assistance you need?*

9:10 – 9:20:

- Ask if anyone has any questions of concerns
- Ask if they liked talking about these issues or not
- Ask it they think there was anything missing from the discussion
- Ask if they think these kinds of discussions are important and useful
- Ask them if they are interested in participating in a small group discussion in the next two weeks. If yes ask them to sign up before they leave.

9:20 – 9:30:

- Thank everyone for coming and explain that what they said is important and very helpful
- Ask everyone to collect a small gift on their way out

Youth-led Vulnerability Research and Adaptation to Change – Adult Interviews

Facilitated By: Nunavut Youth Consulting/Meghan McKenna
Date: May 29th – June 25th
Location: Various
Time: Various

To begin have the individual say their name, position and number of years they have lived in Arctic Bay. Explain that the purpose of these interviews is to document the perceptions of youth held by those adults who are regularly engaged in the lives of youth.

Goal: To identify current exposures – the current conditions or stressors (related to interacting social and environmental changes) that youth have had to deal with in their lives

Theme One: Current Exposures

1) What conditions or stressors do you think youth face in their lives?

2) How do you think youth have been affected by these conditions or stressors?

3) Why do you think youth have been affected by these conditions or stressors but not others? For example: because they are timely, historical, other programs/funding/people have resolved some of the other/past issues etc.

Goal: To assess current adaptive capacity – the ways in which youth have coped with current conditions or stressors (related to interacting social and environmental changes)

Theme Three: Current Coping Strategies

4) How do you think youth have dealt with the conditions or stressors that are affecting their lives?

4a) Do you think it has been difficult/easy for youth to manage these conditions and stressors?

4b) Why do you think youth have dealt with these conditions or stressors in those ways? Why not other ways?

5) What programs/institutions/people do you think have helped youth better manage the conditions or stressors that are affecting their lives?

6) Do you think anyone/anything has made it harder for youth to deal with the conditions or stressors that are affecting their lives?

Goal: To document youth's recommendations on what can be done to enhance their adaptive capacity – the ways in which the ability of youth to cope with current conditions or stressors (related to interacting social and environmental changes) could be enhanced

Theme Four: Enhancing Adaptive Capacity

7) Do you feel that there are actions that should be taken to help youth better cope with the conditions or stressors that are affecting their lives?

7a) If yes what could be done to help youth better cope with the conditions or stressors that are affecting their lives?

7b) If no why don't you feel that youth need additional assistance coping with the conditions or stressors that are affecting their lives?

7c) If yes who do you think should be responsible for implementing these actions/strategies? Providing the assistance youth need? For example: is it the responsibility of an individual, the community, the territory, the country, etc.

APPENDIX – 4 *Pre-research Visit Summary Report*

From February 15th to 27th two researchers from the University of Guelph conducted a pre-research visit in Arctic Bay. The aim of this visit was to gain community input regarding the research project entitled *Youth-Led Vulnerability Research and Adaptation to Change*. The aim of this project is to characterize the vulnerability of youth in Arctic Bay to social and environmental changes, identify youth's recommendations on what can be done to better cope with these changes and to build capacity for research and transferable skills amongst youth.

Nunavut Arctic College (NAC) and Nunavut Youth Consulting (NYC) were contacted by researchers at the University of Guelph in 2006 and have been providing ongoing support and feedback since that time. Community partnerships are essential to the development of university projects that address the concerns and research needs of Arctic Bay. In their capacity as the community partner NAC and NYC have been integral in the design, timeline and facilitation of the pre-research visit. In particular, during the planning phase of this pre-research visit Ron Elliott instructor at NAC was involved as the principal community contact. This included dedicating a significant amount of time to organizing the structure of the visit, recommending accommodations, reviewing and discussing the research plan, providing input in the final research proposal, educating the researchers on life in Arctic Bay and potential obstacles to the project, as well as planning and attending meetings with the university researchers, community organizations and local stakeholders to ensure that the objectives of the pre-research visit were met.

The objectives of the pre-search visit were:

Objective one: ***Discuss the project with community organizations/individuals***

Throughout the week the Hamlet, Royal Canadian Mounted Police (RCMP), Inuujaq School and other interested parties were informed of the research project and potential activities that would take place during the field season. For example, presentations were conducted at Inuujaq School and NAC to provide young people with the opportunity to ask questions and gain a better understanding of the aim and objectives of the research project.

Objective two: ***Solicit feedback on the proposed research and identify concerns***

During the pre-research visit Ron Elliott, NAC students, members of NYC, Inuujaq School and interested youth, stated their concern in respect to the project. Concerns expressed have been incorporated into the final research proposal. One change, based on feedback provided by Ron Elliott and the grade eleven and twelve teachers that has been made to the project is the development of a social science research methods course. The potential curriculum, which has been designed in collaboration with these individuals, is as follows:

CTS Proposed Course: Youth-led Research

Course Description:
The purpose of this course is to teach some of the skills necessary for doing community research. It is hoped that these skills will be useful for future employment, volunteer and committee opportunities.

Course Outline:

Orientation - defining the research issue (2 hours)
- Introductions
- What we are going to do in this course?
- What is a research problem?
- What questions do you have?
- How can you answer these questions?

Purpose: Identify a research problem to investigate in this training session

Research Approach – research aims and objectives (2 hours)
- What is a research aim and objective?
- What is your research aim and objective?
- What things do you want to change as a result of your project?

Purpose: Frame your research problem with an aim and objective.

Research Approach - interview methods (2 hours)
- What are focus groups and interviews?
- How do you conduct focus groups and interviews?
- Why do you need consent forms?

Purpose: Develop your research questions for your focus group and/or interviews.

Youth-led Research – Learning by Doing (6 hours)
- How are you going to interview/who will take part in your focus group?
- What was it like conducting interviews and/or focus groups?
- What were some of the challenges?
- What were some of the benefits?

Purpose: To conduct interviews with other youth and upload the recorded data.

*Youth-led Research – Learning by Doing (*4 hours)
- How do you transcribe research interviews?
- How do you write short hand notes?

Purpose: Transcribe and take short hand notes from the interview data uploaded.

Research Approach - organizing information (4 hours)
- What conclusions can you draw from your interviews?
- How do you take all your information and create a report?
- What does a report consist of (introduction, methods, results)?

Purpose: To have the research process and results documented in a mini-report.

Research Approach - presenting information (2 hours)
- How do you make a PowerPoint presentation?

Purpose: To make a PowerPoint presentation illustrating what you did and your outcomes.

Presenting your information - Learning by Doing (2 hours)
- Show your presentation to the group

Purpose: To gain practical presentation skills.

Wrapping Up – career opportunities (1 hour)
- My research with the University of Guelph and employment opportunities for youth in Arctic Bay.

Purpose: Identify potential candidates for employment.

Objective three: Identify potential peer-researchers

Potential peer-researchers were identified by a number of community members amongst NAC students, members of NYC and high school students attending Inuujaq School. This includes students who make up more than one demographic of Artic Bay. For example, youth who are more involved with hunting and camping will participate in the project through semi-structured conversational interview conducted during day land trips. Youth who are more involved in the school or NYC will potentially take part either as peer-researchers or in focus groups. Conducting the research methodology with these two sample groups was a suggestions expressed by Ron Elliott of NAC.

Objective four: Discuss/define operating procedures that will guide the research

During a series of conversations throughout the pre-research visit the following operational procedures were established. Working with a university researcher youth who have completed the career technology studies training course and expressed interest in the research project will be hired as peer-researchers during the collection of primary data. Primary data will be conducted via youth-led focus groups and interviews. The peer-researchers will also be asked to evaluate the research process through journals and a focus group. During the focus group youth will discuss what participants liked about conducting research, what they did not like, how to effectively engage youth in research and suggest ways to improve future research involving youth in Arctic Bay. This information will be compiled in a report, listing guidelines for engaging youth in

research. This report will be hosted at the Nunavut Research Institute (NRI) so that it can be distributed to universities pursuing research opportunities in Nunavut.

As requested by the community of Arctic Bay, the results of the research will be communicated by the university and peer-researchers to: Arctic Bay, the region, and to the larger scientific and policy-making community. This may include presentations in the community in Arctic Bay, at national and international conferences and meetings, and to regional policy-makers in Iqaluit and Ottawa.

Objective five: ***Identify when is best for the main research visit to take place***

The tentative timeline for the research project was also established during the pre-research visit.

September 2006 – December 2006

- Make contact with the national and international organizations representing the Inuit of Nunavut
- Make contact with community representatives: Government of Nunavut, NAC, NRI, NYC, and Inuujaq School
- Write and present context paper

January 2007

- Apply for a University of Guelph ethics license
- Prepare an information pamphlet for the prospective community study site outlining my research interests and background
- Make follow up contact with community representatives and possible research collaborators

February 2007

- Visit the prospective community study site
- Present research interests
- Identify potential peer-researchers, collaborators, assistances, translators
- The community will deny or accept the project and decide (if necessary) when would be the best time to conduct fieldwork
- Apply for a Nunavut Research License

March 2007

- Collect and analyze relevant grey literature, community documents and other information pertinent to assessing community vulnerability, building capacity and working with youth
- Develop the career technology studies credit in social science research methods for Inuujaq School and potential peer researchers from NAC and NYC
- Prepare and test research methods and techniques

April – September 2007

- Conduct training session and fieldwork in Iqaluit and Arctic Bay

Potential timeline for activities to be carried out in Nunavut

ACTIVITY	DATE	LOCATION
• **Building partnerships** • **Pre-research training** • **Coordination**	**Mid-April to Mid-May**	**Iqaluit**
• **Informal data collection via conversational interviews**	**Third week of April to May 22nd**	**Arctic Bay**
• **CTS Training Credit**	**May 22nd – June 12th**	**Arctic Bay**
• **Primary data collection** • **Youth-led focus groups**	**June 12th – June 26th**	**Arctic Bay**
• **Evaluation of the research process** • **Evaluation focus group** • **Prepare research guidelines with peer researchers**	**June 26th – July 10th**	**Arctic Bay**
• **Dissemination of research guidelines to the Nunavut Research Institute** • **If necessary conducting key informant interviews with relevant policy makers**	**July 10th – August 1st**	**Iqaluit**

October 2007 – February 2008

- Analyze data, transcribe interviews, latent content analysis, write thesis
- Present research findings at select conferences: ArcticNet annual meeting, ACUNS annual meeting, etc.

March 2008

- Dissemination of findings to communities and decision makers

April 2008

- Defend thesis at the University of Guelph
- Prepare research findings for publication in scientific journals

YOUTH-LED PARTICIPATORY ACTION RESEARCH TRAINING MANUAL

Career Technology Studies Credit
Inuujaq School - Arctic Bay, Nunavut

Adapted from:

JGC JOHN W. GARDNER CENTER
for Youth and Their Communities

TABLE OF CONTENTS

UNIT TWO – INTERVIEWS:

5) How to do a Good Interview

Goal: To learn how to do an effective interview.
Activity: Create questions that you could use during an interview on the selected research topic.

Finalize and Practice Interviews

Goal: To revise the interview questions and identify potential interviewees.
Activity: Select at least two people to interview.

6) Conduct an Interview

Goal: To practice interviewing.
Activity: Putting what we have learned into practice.

7) Organize Interview Results

Goal: To learn how to code interviews.
Activity: Organize interviews on index cards.

8) Identify Interview Themes

Goal: To identify themes from the interviews.

UNIT THREE – FOCUS GROUPS:

9) Focus Group Introduction

Goal: To learn what a focus group is.

10) Focus Group Facilitation

Goal: To learn how to run a focus group.

UNIT FOUR – SURVEYS:

11) Survey Training

Goal: To learn how to create a survey
Activity: To create and conduct a survey for the topic selected for this action research training course.

12) Analyze Survey Results

Goal: To understand how to present data collected from a survey.
Activity: To create two graphs (a bar graph and a pie chart) of the survey results.

UNIT FIVE – WRAPPING UP:

13) Developing Presentation Skills

Goal: To develop presentations skills
Activity: To create a presentation or poster on PowerPoint.

ACKNOWLEDGEMENTS

This youth-let participatory action research training manual was created as a career technology studies credit for Inuujaq School in Arctic Bay, Nunavut. This handbook was developed with the support and guidance of various organizations and individuals including Nunavut Arctic College, the Nunavut Research Institute, Nunavut Youth Consulting and their chairperson Ron Elliott.

This training manual has been adapted from the *Action Research Projects for High School Classrooms – Training Manual for Teachers* created by the John W. Gardner Center for Youth and Their Communities (2006).[13] The original document was modified to better suit the cultural and community characteristics of Arctic Bay. For example, scenarios were replaced with those that are relevant to the lives of Inuit youth. Other considerations, including language (Inuktitut is the language of Inuit in Nunavut), time (students require 25 hours of study to receive a high school career technology studies credit), space (a small class room at Inuujaq School), and previous successful career technology studies credits (those that were practical and hands on and created for a group as opposed to individuals) were incorporated into this version of the manual.

As such, the purpose of this training course is twofold: (1) for high school students to earn a career technology studies credit in social science youth-led participatory action research methods, and (2) to prepare youth for employment opportunities with the University of Guelph on the project *Youth-led Vulnerability Research and Adaptation to Change.*

All pictures in this manual were provided by Ron Elliott and Nunavut Youth Consulting.

[13] The *Action Research Projects for High School Classrooms – Training Manual for Teachers* was adapted from the YELL curriculum for high school classrooms and was informed by the vision of Yetunde Reeves, principal of EXCEL high school at the McClymonds Education Complex. This manual was also informed by community partners in Redwood City and West Oakland, in particular Kennedy Middle School. This manual would not have been possible without the engagement of young people, school and community leaders.

INTRODCTION

Background: The *Youth-led Vulnerability Research and Adaptation to Change* research project was initiated following concern expressed by community members during past University of Guelph research projects. The aim of the research project is to characterize the vulnerability of Arctic Bay, especially from the perspective of youth, to changing conditions, including but not limited to climate change, and to build capacity among youth to deal with their changing social and environmental realities. Specifically, the project has three interrelated objectives:

1) **To identify current exposures** – the current conditions or stressors related to interacting social and environmental changes that Inuit youth have to deal with in their lives.

2) **To assess current adaptive capacity** – they ways in which Inuit youth have coped with current conditions or stressors related to social and environmental changes – **and document and asses Inuit youth's recommendations on what can be done to enhance their adaptive capacity.**

3) **To identify future potential exposures** – the likelihood of changing social and environmental conditions – **and assess future adaptive capacity** – the manner and degree to which Inuit youth will be able to adapt to the future exposures identified.

4) **To build adaptive capacity among Inuit youth** – through training and involvement in the research – to participate in research and/or deal with the social and environmental changes there are experiencing in their lives.

Working together, Nunavut Youth Consulting and the University of Guelph will undertake research following the completion of the career technology studies credit from June to August 2007. Youth who successfully complete the youth-led participatory action research methods training course and expressed interest in the *Youth-led Vulnerability Research and Adaptation to Change* research project will be hired as peer researchers during the collection of primary data. Primary data will be collected via youth-led focus groups, interviews and a survey so that youth can build on the skills gained during the research methods course.

How to use this manual: This training manual was developed to support Nunavut Youth Consulting in their efforts to gain research and transferable skills and to learn how to conduct their own action research projects.

Supporting materials for the lesson plans are included at the end of each session.

WHAT IS YOUTH-LED ACTION RESEARCH?

Youth-led action research promotes learning and community change by actively engaging youth in discovering, collecting information about, and taking action on issues that directly affect them and their communities.

In a **youth-led action research** project youth use methods to define, research and critically analyze the challenges they or their community are facing.

In a **youth-led action research** project youth learn to use surveys, interviews and focus groups to better understand their community for the purpose of addressing pressing social issues.

Through **youth-led action research** youth learn leadership and gain research and transferable skills, which may help prepare them for college and future travel, volunteer and employment opportunities.

STEPS IN A YOUTH-LED ACTION RESEARCH PROJECT

1) Pick an issue in Arctic Bay and define the research question

What is the problem or issue that you want to address? What do you want to change in Arctic Bay? What solutions to your problem or issue sound best to you? What kind of information do you need to make a good argument for these changes? How can you show that what you are saying makes sense?

2) Develop research tools and gather information

Read about the history, politics and causes of the issue you want to address. Use newspaper articles, books, government reports, journal articles and the internet. Who is impacted and involved in the problem you are addressing? Who has the decision making power? Get their ideas on how to make the change you want to see. What is the best way (interviews, surveys, focus groups) to get information from these people?

3) Analyze information

Now that you have the information, what are you finding? What are the major trends or themes that come out of what people have said? How can you turn what you've found into recommendations or actions?

4) Make products to share findings

Who should know about your findings? Invite these people to a presentation or put up flyers and/or posters. How will you share this information with these people? What about making a video? Doing a radio or newspaper interview?

5) Present idea

Present your ideas to other students and people who could use your information to make positive change in Arctic Bay.

Knowledge is Power

Goal: To understand how research can help make a better argument

Time needed: 45 minutes

Preparation:

- Chalkboard to record students' definitions of research
- Individual youth-led action research binders

Define Research (15 minutes):

- Introductions with students and the facilitator
- Review the purpose of today's workshop – to help them think about how research can help them change what they want
- Explain that before we start, we need to know what it means to do research. How do they define research? Record this on the chalkboard:
    - Example: Collecting information about a particular subject/problem
    - Example: Studying something

Identify a Research Need (30 minutes):

- With the class come up with at least three different issues, problems or topics in Arctic Bay
- For each problem or issue, come up with an idea that would help improve the problem. Ask class to explain how their solution would help improve the problem.

*** **Meghan's issue** – youth in Arctic Bay are being negatively impacted by interacting social and environmental changes

Meghan's solution – enhance the adaptive capacity of youth in Arctic Bay

Decide on a Research Question

Goal: To further define a research problem and solution
To translate this issue and solution into a research question

Time needed: 60 minutes

Preparation:

- Student identified research needs from *Knowledge is Power* workshop (issues and possible solutions)
- Chalkboard to record students' definitions of research
- Dotmocracry handout
- Stickers

Pick a Solution (20 minutes):

- Explain the goals of today's session – to create the research question that will guide this training course.
- Go over the problems and solutions from the *Knowledge is Power* workshop

Turn the Research Issue and Solution into a Research Question (20 minutes):

- Chart the following on the chalk board:
  - Problem + Solution = Research Question
- Give two examples:
  - Problem: In Artic Bay there is no where to go after school
  - Solution: A youth center
  - Research question: Would having a youth center provide a place for youth to go after school?

  - Problem: Overcrowded housing
  - Solution: More housing
  - Research question: Would having more housing end overcrowding in Arctic Bay?
- Ask if students have any questions about what has been discussed.
- Using the problems and solutions the students came up with to create several research questions.

Using a dotmocracy (20 minutes):

- Hand each student a dotmocracy work sheet and ask each student to write their research question on the handout
- Collect all the dotmocracy work sheets and tape them to the chalkboard
- Hand out stickers and explain what the dotmocracy technique is
- Explain that the research question they select will be used in the upcoming weeks.

*** **Meghan's issue** – use the dotmocracy technique to identify and rank the social and environmental conditions/ changes that youth in Arctic Bay are experiencing

Research Round Robin

Goal: To brainstorm and learn some ways to do research
To consider the pros and cons of popular research methods

Time needed: 65 minutes

Preparation:

- Student selected research question
- Chalkboard with heading "What are some ways to do research?"
- Copies of research pros and cons worksheet for all students
- Stations set up in the room for each of the three research methods
- Index cards and pencils for each research station
- At the survey station you will need enough sample surveys (this survey should be developed on the basis of the selected research question) for all participants

Brainstorm Ways to Do Research (10 minutes):

- Explain to the class that today they are going to learn how to do some of the most common types of research. Remind them of the definition of research they came up with in the first session.
- Ask the students to brainstorm different ways to do research by asking the following questions:
    - What ways of doing research do you know of?
    - How would you find out what other people in your school or community think?
    - How do politicians or businesses find out about people's opinions or interest?
- Record answers on the chalkboard

Youth-led Action Round Robin (45 minutes):

- Tell the class that now they are going to experiment with three of the most common ways to do youth-led action research.
- Note that there are other methods, like those they've just identified, but today they are going to focus on focus groups, interviews and surveys.
- Explain that everyone is going to rotate from station to station, spending time at each station trying out one way to do research and then thinking about the pros and cons.
- Give each student a pros and cons worksheet. They will fill this out at each station for the method that they just tried.
- At the end of the session explain that as a group they will answer the discussion questions.

Station one – Focus Groups (15 minutes)

- Ask everyone to write down two questions on an index card related to the selected research question

- The facilitator will lead a discussion using these questions for 5 minutes
- Let the group know that during a real focus group, the discussion would have been tape recorded and typed up. Then, as researcher they can use this information and try to identify themes or ideas that a lot of people agreed on.
- Let the students know that they will be using how to use the recorders in a later session.
- Ask the students the following questions and then give them time to fill our their worksheet:
    - What do you like about doing this kind of research?
    - What do you think would be difficult about doing this kind of research?

*** **Meghan's issue** – use this information to evaluate the success/challenges associated with a youth-led action research project, eventually to become Nunavut Research Institute report

- Have the group to hold on to their index card for the interview station.

Station two – Surveys (15 minutes)

- Take the survey. As the students take the survey ask them to add or change questions that will help them better answer the selected research question.
- Discuss the pros and cons of using a survey and then give students time to fill out their worksheet.
- Ask the students the following questions and then give them time to fill our their worksheet:
    - Did you like taking the survey? What did you like? Not like?
    - What kinds of questions are good for surveys?
    - What are the benefits of using a survey to collect information? What are the weaknesses?

*** **Meghan's issue** – use this information to evaluate the success/challenges associated with a youth-led action research project, eventually to become Nunavut Research Institute report

Station three – Interviews (15 minutes)

- The facilitator should collect the index cards with the questions from the focus group station.
- Spilt the group into pairs and give each person one card with questions and instruct them to use these questions to conduct an interview.
- After a couple minutes, ask them to switch roles, with the other person asking the questions.
- Remind them that if this were a real interview they would be using recorders, which they will be learning how to use soon.

- Ask the students the following questions and then give them time to fill our their worksheet:
    - What kind of questions got the interviewee to talk more?
    - What do you think is good about collecting information from people this way?
    - What are some possible solutions to the challenges you had interviewing each other?

*** **Meghan's issue** – use this information to evaluate the success/challenges associated with a youth-led action research project, eventually to become Nunavut Research Institute report

Debrief/Closing (10 minutes):

- After all the station activities are complete, discuss the following questions with students:
    - What research methods did you like best?
    - What challenges can you already see in doing action research?
    - What are some solutions to these challenges?

*** **Meghan's issue** – use this information to evaluate the success/challenges associated with a youth-led action research project, eventually to become Nunavut Research Institute report

- Ask the students to keep their pros and cons worksheet in their binder

Youth-led Action Research Pros and Cons Worksheet

Ways to Do Action Research	Pros? (What is good about this method?)	Cons? (What is bad about this method?)
Focus Groups		
Surveys		
Interviews		

1. **What ways of doing youth-led action research did you like better than others?**

_____
_____
_____

2. **What kind of research do you think would be good for our action research project?**

_____
_____
_____

Survey Handout for Survey Station

Sample Survey to Answer the Research Question:
"Are youth in Arctic Bay vulnerable to social and environmental change"

Instructions: Please fill out this survey with your own answers to the questions asked. *When there is a blank, you should make up a question that would help answer the research question.*

1) What is your age: _____ **2) How long have you lived in Arctic Bay: _____**

3) Please check box: Female ☐ **Male** ☐

Please circle the number that describes how true each statement is for you:

4) Are their social and environmental changes occurring in Artic Bay?	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**
5) Are you impacted by social and environmental changes occurring in Arctic Bay?	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**
6)	**1**	**2**	**3**	**4**
(Write your own question here)	**Not true**	**Somewhat**	**True**	**Very true**

For each question below, please circle yes, no or maybe:

7) Are youth in Arctic Bay coping with social and environmental changes in Arctic Bay?
Yes Maybe No

8) If yes, then how are youth coping?

_____

_____

9) Write your own question here:

_____

_____
Yes Maybe No

For the question below, please circle the answer that reflects your opinion:

10) What would best help youth in Arctic Bay cope with changing social and environmental conditions?

a) Better communication between elders and youth
b) Learning Inuit qaujimajatuqangit in school
c) More employment opportunities
d) A youth centre
e) Cheaper flights so youth can travel more often

11) ***Write your own question here:***

_____

_____

a) _____
b) _____

How to Do a Good Interview

Goal: To learn how to do an effective interview

Time needed: 80 minutes

Preparation:

- Copies of *Steps to a Good Interview Worksheet* for all students
- Copies of *Open-ended Questions Worksheet* for all students
- Copies of *Sample Interview Questions* for all students
- Copies of a *Sample Permission Handout* for all students
- Recorders for all students (if possible)

What not to do in an Interview (10 minutes):

- Explain that the goal of today's session is to teach students how to do a good interview and use the recording device.
- Brainstorm some of the bad ways of doing an interview and act out a bad interview scenario if necessary.
- Discuss the interview by asking the participants questions, such as: What was wrong with that interview?
- Some bad interview examples:
    - Won't make eye contact
    - The recorder, camera, etc. doesn't work
    - Forgets questions
    - Doesn't had a notepad to write on
    - Answers phone
    - Won't listen to what is said
    - Won't respond with appropriate follow up questions
    - Will ask leading questions instead of open ended questions
    - Will give you his or her opinion
    - Will use poor body language
- Record responses on the chalkboard

Steps to a Good Interview (10 minutes):

- Brainstorm some of the goods ways of doing an interview and act out an interview scenario if necessary. Some good interview techniques include:
    - Make eye contact
    - Look confident and well prepared
    - Show the person you are listening by repeating what they say
    - Ask follow up questions to better understand what they are saying
    - Keep you questions open ended so they say more than yes or no
    - Introduce yourself and the purpose of the interview
    - Ask for permission
- Hand out the tip sheet and ask if there are any questions.

Open-ended Questions (30 minutes):

- Explain that one of the most important characteristics of a good interviewer is their ability to be open minded and really hear what the person they are interviewing has to say. You don't want to influence their answers with your own way of thinking.
- Explain that sometimes questions are open-ended and sometimes they are leading.
- When a question is leading, that means you have to put your ideas into the question in a way that the person can't just talk about their own thoughts.
- Some good questions can lead to yes or no answers but questions should never stop there. Yes or no answers are just the beginning. You want to ask yourself when you are interviewing:
    - Does this question assume a certain opinion?
    - Does this question lead someone to a particular answer?
- If you answer yes to those questions, then the question is not open-ended.
- Do one example from the worksheet:
    - Don't you think that youth in Arctic Bay are stereotyped a lot?
        - Do you think that youth in Arctic bay are stereotyped? What kinds of stereotypes have you heard?
- Hand out the worksheet on open-ended questions. Explain that as a group we will revise each question to make it more open ended.
- Do worksheets and ask for a couple of examples.
- Tell students to keep this worksheet in their Youth-Led Action Research Project Binder.

Creating Interview Questions (15 minutes):

- Explain that as a group the students are going to create interview questions for their selected research question.
- Hand out sample interview questions
- Ask the students to look at the sample interview questions and then ask them to create at least four questions they could use for their own research project topic.

Learning How to Use the Recorders (15 minutes):

- Explain that as a group we are going to learn how to use the recorders.
- Hand out recorders and go through the steps.

Interview Handout #1 – Steps to a Good Interview

1) Make sure that you are prepared and organized

- ✓ Practice the questions you are going to say
- ✓ Make sure you have…
  - Your interview questions
  - A notepad and a pen/pencil
  - Your recorder
  - A quiet, private place to do the interview
  - Your permission slip

2) Introduce yourself and ask for permission

- ✓ Tell them your name, where you from and why you are doing the interview. *Hi my name is* _____. *I am working on a research project and I would like to talk to you about* _____ *so I can help improve life in Arctic Bay.*
- ✓ Ask them for permission to do the interview and have them sign the form. *Can I have permission to interview you and use what you say in my research project? Would like you could be anonymous?* Explain that if they would like to be anonymous anything they say will be attached to a number not their name.

3) Do the interview

- ✓ Make eye contact
- ✓ Listen to the person you are interviewing – don't interrupt them when they are speaking.
- ✓ Don't give your own opinion. Try repeating back what they said to make sure you understood their point. Ask them to speak for themselves and talk about their own opinion.
- ✓ Ask follow up questions.
- ✓ Don't accept yes/no answers. Ask them *why* or *could you explain that further*
- ✓ If they are nervous, give them some time to answer and explain that you are not in rush and that their answers are important to you.

4) End the interview

- ✓ Thank them for their time and shake their hand. *Thank you very much for being interviewed. What you have said is very helpful for us.*
- ✓ Ask them if they have any questions and provide them with your email address and/or phone number in case they think of something later own.

5) Respect confidentiality

- ✓ Tell the person you are interviewing that what they said was just between you and them.
- ✓ Do not tell anyone else what the person said. Only speak about the interview anonymously, without naming names.

Interview Handout #2 – Consent Form for Focus Group and Interview Participation

Project Title: Youth-led Vulnerability Research and Adaptation to Change

Project Description: This work aims to –

1) **To identify current exposures** – the current conditions or stressors related to interacting social and environmental changes that youth have to deal with in their lives
2) **To assess current adaptive capacity** – they ways in which youth have coped with current conditions or stressors related to social and environmental changes – **and document youth's recommendations on what can be done to enhance their adaptive capacity**
3) **To build adaptive capacity among youth** – through training and involvement in the research

Contact Address: Meghan McKenna, Dept. of Geography, University of Guelph, Guelph, Ontario, N1G 2W1, phone: (519) 824 4120, email: mmckenna@uoguleph.ca

Medium of interview: face-to-face, audio taped, photographed and videotaped (if permission granted)

Statement of informant's rights: *I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to being interviewed for the project. I understand that steps will be undertaken to ensure that this interview will remain confidential unless I consent to being identified. I also understand that if I wish to withdraw from the study, I may do so without repercussions.*

Name (please print): _____

Signature: _____

Date: _____

Signature witness: _____

_____ I desire that my identity and the information I provide be confidential

OR

_____ I desire that my identity be non confidential and that the information I provide be attributed to me

_____ I give permission for use of audiotape and videotape

Interview Handout #3 – Open Ended Questions

HOW DO YOU MAKE QUESTIONS OPEN ENDED?

Instructions: Turn the bad interview questions into open ended questions that don't:

- Lead to yes or no answers
- Show your opinion

Example:

- *Don't you think the Toronto Maple Leafs suck?*
- *What do you think of the Toronto Maple Leafs?*

1) Don't you think that youth in Arctic Bay are stereotyped a lot?

_____

_____

_____

2) It seems like other people in Arctic Bay are to blame, don't you think so?

_____

_____

_____

3) It seems like everyone always focuses on the bad stuff happening in Arctic Bay. I think if people talked about the positive things that youth do, then things would get better. Don't you think so?

_____

_____

_____

Interview Handout #4 – Sample Interview Questions

What is your name?

How old are you?

How long have you lived in Arctic Bay?

1) Do you feel that things are changing in Arctic Bay?

2) If yes, what kind of change have you experienced and how have these changes affected your life?

3) Have you dealt with changes in Arctic Bay? What could be done to help you better deal with these changes?

4) What can we do to make Arctic Bay a better place for youth so that changes will not impact them negatively?

Finalize the Interview Questions

Goal: To finalize your interview questions and practice interviewing

Time needed: 60 minutes

Preparation:

- Work from *How to Do a Good Interview* workshop (draft interview questions and handouts)
- Chalkboard to list types of people to be interviewed

Thinking About Interview Questions (10 minutes):

- Tell the students that they goal of today's workshop is to finalize the interview questions that they will use for our youth-led action research project.
- Explain that the point of doing interviews is to get information that will help answer the research question/issue and identify possible solutions
- Review the type of people that could be interviewed by asking the following questions (record answers on the chalkboard):
    - What kind of people should we interview for our research project?
    - Who is impacted by the issue or topic?
    - Who could help us better understand the facts of the issue?
- Ask the students if all these different people should be asked the same questions?
    - Should certain interviews be tailored to the person you are interviewing? Ask for an example.
    - Should we also use different research methods for the different types of people? (e.g. focus groups and surveys for youth, personal interviews for elders and adult community leaders)

Finalize Your Interview Questions (20 minutes):

- Ask students to come up with a list of people that we should interview for this project and record them on the chalkboard.
- Revise the interview questions they came up with based on the previous conversation and who they could interview.
- Remind students that questions must be open-ended.

Practice Interviews (20 minutes):

- Explain that they next activity will help them practice their interview skills
- Inform the students that they will be conducting their interviews with the people they identified in the previous list.
- Encourage them to practice the questions with each other and to think about what it means to be a good listener when they are conducting interviews.

Debrief (10 minutes):

- Let the class now that you will be contacting the people they would like to interview to tell them about the project and to set up an interview time.

Conduct an Interview

Goal: To interview people using the research questions established for the project

Time needed: 120 minutes

Preparation:

- Course facilitator to contact potential interviewees and arrange time, place, etc.
- Recorders
- Video camera
- Journal and pencils/pens for note taking during the interview
- Permission handout
- Student research questions
- Copies of the permission form
- Youth-led Action Research Binder with handouts from previous sessions

Put you Interview Skills into Practice (120 minutes):

- Explain that as a group they will be interviewing people for 30-60 minutes using their finalized research questions.
- Remind them to ask follow up questions and to take detailed notes in case there is a problem with the recorder or video camera.
- Make sure the equipment is working and remind students to go through *Interview Handout #1*
- Go to the interview site and conduct the interview for each person you arranged an interview with.
- Don't forget to ask for permission!

Organizing Interview Results

Goal: To identify themes from the interviews and to learn how to code the interviews

Time needed: 40 minutes

Preparation:

- Copies of interview protocols with instructions for the activity
- Index cards
- Chalkboard with enlarged examples of index cards (to be used for examples of how to code interviews)

Report Out (10 minutes):

- Ask the student to report back and discuss the experience of interviewing people. You could ask them:
  - How was it?
  - What kinds of questions do you ask to get someone to really open up?
  - What something interesting or surprising that was said?
  - Did the interview go as you expected?

*** **Meghan's issue** – use this information to evaluate the success/challenges associated with a youth-led action research project, eventually to become Nunavut Research Institute report

From Interviews to Information (30 minutes):

- Explain that after interviews are conducted, researchers must review them and sort through the information.
- Ask the group: How would you try and figure out how many people felt one way or another from all the interviews you have done? Discuss their responses.
- Explain the technique of coding, pointing out that this is a process used by professional researchers, although they often use computer to assist them.
- Pass out index cards and ask students to pick the interview they liked best and to get out their notes or recordings.
- Instruct them to write the name of the person they interviewed on the blank side of the card.
- On the lined side of the card, write down information about the person's background.
- On the next index card, write the person's name again and then write the number 1, which will represent the first question they asked.
- On the other side of the index card, write the interviewee's overall response to the first question.
- Share handout and demonstrate this technique, using the chalk board:

Name: Background:	Age: Gender:	Question #: Response:	Overall Response:

Interview Coding Exercise – Instructions and Examples

1) Review your interviews one at a time. Start with the one you liked best.

2) On the first index card, write down all the background information about the person you interviewed. On the back of the card, write the name of that person. **Example:**

Lined Side	Blank Side
Age: Years in AB: Gender:	Julie

3) Using your interview questions write down what the person's general answer to each question was on the lined side. On the other side, write the number of the question and your code name (if necessary) for the person. **Example:**

Lined Side	Blank Side
Depends on the student	#1 Julie/3075

Examples of how to come up with general ideas from long answers:

EXAMPLE ONE:
WHAT CHALLENGES DO YOUTH IN ARCTIC BAY FACE?
There is nothing to do and nowhere to go after school. Because I there nowhere to hang out sometimes kids get bored and do bad things. There is also nowhere quiet to do home work and get help. Some kids fall behind in school.

WHAT DO YOU MEAN THERE IS NOWHERE TO GO?
After the school closes I can't go to my house to do homework because there is already too many people there and it can be really noisy. Sometimes we go to the gym, arena, or Arctic College but you can't stay there for a long time and it gets to be the same old thing. I really wish there was a youth centre in town.

The general ideas could be:
OVERCROWED HOUSING, BORDEM, YOUTH CENTRE, SCHOOL PROGRAMS

Interview Themes

Goal: To identify themes from the interviews

Time needed: 40 minutes

Preparation:

- Rubber bands or paper clips

Interview Themes (25 minutes):

- Explain that today students are going to identify themes, or common ideas, that came up in their interviews.
- Explain that students should go through each interview question, and review the responses on their cards. Put answers in similar piles.
- They may use rubber bands or paper clips to keep them together. They may also color code the cards if they wish.
- Once they are done sorting out their cards, they should see which piles have the most cards. These are the major themes from the interviews.
- If you were to write a report you should refer to the most common ideas that come up in an interview, not just the comments that support your personal ideas.
- When writing a report, they can use these piles to identify numbers of people who said the same thing, or to remember where to find a good quote.

Present Back (15 minutes):

- Ask students to explain their research topic and present the major themes from their interviews. Ask them:
    - What do they think is the biggest cause of the problem identified?
    - Did people talk about the history of the issue in Arctic Bay or their personal experiences with it?
    - What ideas did they people they interviewed have about a solution to this problem?
    - Did they find anything else interesting about the results?

Focus Group Introduction

Goal: To learn what a focus group is in practice

Time needed: 65 minutes

Preparation:

- Index cards or blank pieces of paper
- Access to a chalkboard to record student brainstorm session
- Roles and definition of a facilitator written up on the chalkboard
- Copies of *Tip Sheet for Focus Groups*

Just Like a Talk Show (20 minutes)

- Explain that today the group will be conducting a focus group
- Have students fill out an index card or write on a piece of paper:
    - Their research topic
    - Two discussion questions – they can draw from the interview questions
- Next explain to the class that we need to brainstorm and identify potential participants.
    - We will need to recruit at least 5 people for an hour-long conversation.
    - What are some ideas you have for getting people to participate in your focus group?
    - Where would be a good place to conduct the focus group? What time?
- Once you have identified potential participants the training session facilitator will invite them to attend the focus group.

Focus Group Facilitation (10 minutes)

- Explain that next students will learn more about how to run a focus group so that people really talk and give them the information they are looking for.
- As a facilitator you ask questions to get people talking, keep everything in order, and control the conversation.
- This process of keeping everything in order and controlling the conversation is called "facilitating"
- To facilitate means to make things easier or less difficult, to help move forward.
- Facilitators have three main roles:
    - Make sure everyone has a chance to participate
    - Create a trusting atmosphere
    - Listen and ask questions

Focus Group Strategies and Activities (10 minutes)

- Explain to the group that as a facilitator of a focus group, their main job is to keep the meeting or discussion moving forward and to ensure that everyone is participating
- What are some activities or strategies that a facilitator could use to get people to share their ideas and opinions?

FOCUS GROUP TIP SHEET

1) SETTING UP THE FOCUS GROUP

TIME. The focus group should be at least 60 minutes and no more than 90 minutes (25% of the time should be devoted to socializing and eating)

CHOOSING WHO SHOULD PARTICIPATE. Think about your research topic and what kind of people can help you answer your research question. You need to identify people who have diverse experiences and perspectives to give you useful information.

INCENTIVES. Food during the focus group is always appreciated.

THE PLACE. It should be a place that is convenient for people to get to, comfortable for everyone, quiet. You don't want to hold a focus group in a room where people are always walking in and out of, or where there is another activity going on.

2) THE DISCUSSION

THE BEGINNING. Explain to the group the purpose of the focus group, why they were selected, and why they are important to the study. Explain the role of the facilitator. Ask permission to video and/or audiotape. Establish the ground rules: everyone should participate, all ideas are equally important or valid, there are no right or wrong answers, each person's point of view should be heard and respected. Do an icebreaker or another exercise to introduce everyone.

QUESTIONS. Have a list of questions in logical order that start broad and then become more specific. Use open-ended questions – see the worksheet from the interview workshop. Avoid responding to comments with *Why?* It can make people feel defensive. Ask instead, *Can you give me an example? Can you tell me more about what you are saying?*

OTHER TECHNIQUES FOR GOOD DISCUSSIONS.

- Brainstorming using a flipchart is useful to generate lists of ideas/thoughts/opinions on core subjects (e.g. differences, what makes something a good idea/solution).
- Mapping is useful in talking about how things are organized. People in the focus group can be given a map and asked to draw where they hang out, where they feel comfortable, etc. Relationship maps are also useful in getting information about personal relationships – they can be given a diagram with them as a circle in the middle, surrounded by circles and asked to fill out people who are in circles around them.
- Collages or drawings are useful in producing conversations about a subject. They can be asked to produce a collage about a topic and then present and discuss the meaning of it with the group.

- Guided fantasies or visualizations – e.g. imagine a classroom/community/job in which you felt respected and then ask them what that looks like.

3) **FACILITATOR ROLES AND RESPONSIBILITIES.** Keep the discussion moving and on topic, ensure that all participants feel safe, encourage people to have different ideas, make sure every participant has an opportunity to speak and to listen, it is helpful to have a co-facilitator who takes notes/checks the recorder/manages the audiotape, allow for silence before changing the topics or asking too many follow up questions, you can allow participants to write down their responses if they prefer, etc.

4) **UNDERSTANDING FOCUS GROUP RESULTS.** After you finish the focus group, you should review your audio tape, or watch the video of the discussion, listen for the most common ideas, pay attention to who says what (do boys think differently than girls?), you can use a system similar to coding interviews to organize the major ideas from the group.

FOCUS GROUP FACILITATION SCENARIOS

SCENARIO ONE – Make sure everyone has a chance to participate

The facilitator is trying to lead a discussion about an important issue. Two people won't stop talking. How can the facilitator make sure that everyone has a chance to speak?

SCENARIO TWO – Create a trusting atmosphere

The facilitator is trying to lead a discussion. Two of the students in the group are mad at each other from something that happened at school earlier. When one student starts talking the other student makes a rude comment. How should the facilitator respond to the situation to create a safe environment for everyone?

SCENARIO THREE – Listen and question

The facilitator is trying to get feedback about how to make Arctic Bay a better place for youth. Participants are giving short answers that aren't very helpful. How can the facilitator get the students to talk more about what they are thinking?

Conducting a Focus Group

Goal: To practice the focus group techniques you learned in the last session

Time needed: 110 - 140 minutes

Preparation (10 minutes):

- Focus group questions that you created in the last session
- Recorders/video cameras
- Journals and pencils/pens to record information
- Permission slips
- Dotmocracy handout if you plan to use this technique

Before the Focus Group (20 minutes):

- 20 minutes before the focus group set up food at chosen location
- Check that recorders/video camera are working

During the Focus Group (60 - 90 minutes):

- Keep in mind the *Focus Group Tip Sheet* and the *Focus Group Facilitation Scenarios* handout
- Make sure someone is taking notes, watching the recorders, video camera
- Start the session by explaining the purpose of this activity and ask everyone to introduce themselves

After the Focus Group (20 minutes):

- Hand out a small gift
- Clean up
- Make sure that all the equipment is packed up, that the information that you collected is stored in a safe and locked place
- Take some time to reflect on the focus group – what would you do differently next time?

Survey Training

Goal: To learn how to create a survey

Time needed: 50 minutes

Preparation:

- Copies of *Different Types of Survey Questions* handout for the class

What is a Survey? (10 minutes):

- Explain that today students are going to learn how to create a survey
- Ask students to raise their hands if they have ever:
    - Gotten upset with a friend or family member?
    - Wanted to buy something but couldn't afford it?
    - Voted?
- Explain that a survey is just another way to gather information using questions. When students raised their hands to answer to a question, they basically took a survey they just used their hands instead of writing their answers down on a piece of paper.

Creating Survey Questions? (40 minutes):

- Ask the group to come up with two or three general questions that they could ask someone about their research topic. They could use one that they already came up with to do the one-on-one interviews.
    - Example. Do you think after school programs help students get better grades?
    - Example. What do you youth in Arctic Bay do after they graduate from high school?
- Once the group has finished, pass out the handout on survey questions and review the different type of survey questions that exist:
    - Yes/No
    - Scale
    - Multiple choice
    - Open-ended
- Ask the students to revise their survey questions using some of the formats we have talked about on the handout.
- Once they have revised their questions, they should copy them onto at least five separate pieces of paper, creating five surveys with the same questions on each paper. (They could also type their questions up and print copies).

DIFFERENT TYPES OF SURVEY QUESTIONS HANDOUT

There are generally four different ways of asking survey questions. For example, you might want to find out how people in Arctic Bay feel about youth, or what youth are doing and want to do to improve their life in Arctic Bay.

YES/NO QUESTIONS

1) Are you dealing with challenges? Yes No

2) Are you coping with these challenges? Yes No

3) Are there things that could be done to help you cope? Yes No

SCALE

4) Do you worry about your future?	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**
5) There are limited opportunities for youth in Arctic Bay.	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**
6) There are policy changes that could me made that would help youth in Arctic Bay.	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**

MULTIPLE CHOICE AND RANK

What do you think is the solution to the challenges (if there are some) experienced by youth in Arctic Bay?

A) Teach Inuit qaujimajatuqangit in school
B) Build more public housing
C) Provide more programs at Nunavut Arctic College
D) Increase employment opportunities
E) Change policies
F) Other: _____

Rank the following solutions to the challenges experienced by youth in Arctic Bay (1 is the best, 5 is the worst):

_____ Teach Inuit qaujimajatuqangit in school
_____ Build more public housing
_____ Provide more programs at Nunavut Arctic College
_____ Increase employment opportunities
_____ Change policies
_____ Other: _____

OPEN ENDED

What do you think is causing the problems for youth in Arctic Bay?

_____
_____
_____

Conducting a Survey

Goal: To conduct a survey

Time needed: 120 minutes

Preparation:

- Copies of the surveys created in the last session
- Pencils/pens and journal to record information
- Video camera and recorder
- Copies of permission slips

Gathering Information (100 minutes):

- Using their newly created survey questions, students should find at least five different people to answer their survey.
- Remind students that just like in interviews and focus groups, you want to talk to people who can help you better understand your topic.
- Explain to students that they may want to collect background information on the people who complete the survey so they can compare how different groups of people think (age, different grades, how long someone has lived in Arctic Bay)
- Once they are done, students should put their five surveys into their Youth-led Action Research Binder

Debrief (20 minutes):

- Explain to the students that they will use the completed surveys in the next session.

Analyze Survey Results

Goal: To understand how to measure percentages and majorities from survey results

Time needed: 40 minutes

Preparation:

- Survey questions written on the chalkboard
- Copies of *Survey Math and Graph* handout for the class

Results (10 minutes):

- Ask students to pull out the surveys they completed
- On a piece of paper, have each student add up how many people answered each of the different options in their survey question
- Do an example from the last workshops handout by asking a question to the whole class and having people raise their hand for each response (e.g. How many people strongly disagree?). Write down the number of people who responded each way on the chalkboard.

5) There are limited opportunities for youth in Arctic Bay.	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**

  - Two students chose 3
  - One student chose 1
  - Four students chose 4

Creating Graphs (30 minutes):

- Explain that students are going to create graphs on the following website: http://nces.ed.gov/nceskids/graphing

Survey Math and Graphing Handout

In order to understand your survey results, you have to turn people's answers into percentages and then put them in a graph so you can visually see what people think.

For example: You surveyed 24 people and used this question:

5) There are limited opportunities for youth in Arctic Bay.	**1**	**2**	**3**	**4**
	Not true	**Somewhat**	**True**	**Very true**

- Five students chose 1
- Two students chose 2
- Eight students chose 3
- Nine students chose 4

Percentages:

- A percent is just a fraction (a part of a whole).
- In a survey the whole is the total number of people surveyed and the part is the number of people who answered the survey a certain way. So if 3 people answered yes and a total of 5 people were surveyed, then the fraction would be 3/5.
- You turn a fraction to a decimal using division
  - 3 divided by 5 = .60
  - You change a decimal to a percent by moving the decimal place two place values to the right
  - .60 = 60%

Using the example above:

- Five students chose 1 = 5/24 = .20 = 20%
- Two students chose 2 = 2/24 = .08 = 8%
- Eight students chose 3 = 8/24 = .33 = 33%
- Nine students chose 4 = 9/24 = .37 = 37%

***Sometimes the numbers don't add up to 100% because of rounding

Majorities:

- You want to pay special attention to the answers that most people chose
- In this example, four or strongly agree was the majority with 70% (33% + 37%) and disagree was the minority with 28% (20% + 8%)

Graphs:

- There are two popular types of graphs:
  - Bar Graphs
    - The X axis (horizontal) represents the different types of answers people could give.
    - The Y axis (vertical) represents the number of people who chose that types of answer.
  - Circle Graphs
    - In a pie graph, each slice of the pie represents the number of people who selected a particular survey response
    - There are 360 degrees in a circle, therefore, you can multiply percents to find the number of degrees in each section of the circle graph then use a compass to draw it.
- Don't forget to check out this website online to make graphs http://nces.ed.gov/NCESKIDS/Graphing

Developing Presentation Skills

Goal: To develop public speaking skills

Time needed: 40 minutes

Preparation:

- Hand out *Presentation Tip Sheet* to students
- Write on a chalkboard "what not to do in a presentation"

What not to do in a presentation:

- Introduce the goal of today's session – to plan and prepare for a presentation
- Start with some examples to show what not to do in a presentation
- Give a bad presentation example:
    - The presenter…
        - Never looks at the audience
        - Speaks in a very quiet tone of voice so that no one can hear them
        - Covers their mouth once or twice while talking
        - Says "um" or "well" or "uh" in between sentences
        - Fidgets with a piece of paper, with their hair, clothes or keeps looking at the screen or chalkboard
        - Talks to fast
        - Does not give an introduction
        - Does not thank the audience or ask for questions
    - Brainstorm with the class – what was wrong with this presentation? Record this on the chalkboard.

Tips for a good presentation:

- Handout *Tips for a Good Presentation*
- Ask students to review the list – is there anything missing?

Components of a good presentation:

- Explain to students that their presentation should cover the following:
    - Introduction
    - Your research question
    - The cause of your research question problem in Arctic Bay (the history of your research problem)
    - The research methods you used to gather information (focus groups, surveys, interviews)
    - Present the solution that you identified in the information you gathered
    - Answer any questions that people may have

***You may wish to go over PowerPoint and hold an additional workshop to teach students how to create a presentation using this software. If time permits students can then practice their presentation skills to a larger group. The individuals they conducted surveys, interviews and/or focus groups with would be a good audience.

Developing Presentation Skills Handout

TEN TIPS FOR A GOOD PRESENTATION

1) **Plan and practice!**
   - Have your thoughts organized beforehand and in an order that makes sense. If you don't do this, your presentation will appear thrown together and your audience will think you don't care about what you are talking about or them.

2) **In the very beginning of your presentation introduce yourself and what you are going to talk about**

3) **Stand straight and look at the audience when you are talking and make eye contact**

4) **Try not to read directly from the paper but it's okay to look at it sometimes**
   - Write some ideas in the order you want to say them and try just flowing from there (it takes practice for this to come off in an organized way).

5) **Speak slowly, clearly, loudly and use professional language**

6) **Use visuals to demonstrate what you are talking about**

7) **Don't worry and don't apologize for mistakes everyone in the room is there to support you**

8) **Thank the audience when you are done**

9) **Ask for questions afterwards**

10) **Be yourself!**

APPENDIX 6 – *Letter Regarding the Social Science Research Methods CTS Credit*

Meghan McKenna - M.A Candidate
Department of Geography, University of Guelph
Guelph, Ontario

June 26th, 2007

Inuujaq School
P.O Box 90
Arctic Bay, Nunavut
X0A 0H0

To Whom It May Concern:

I am writing to inform you that Don Oyukuluk, Mason Pauloosie, Bruce Pauloosie and Melissa Reid have completed a Career and Technology Studies Credit in Social Science Research Methods. This course took place between May 18th and June 26th 2007 under the supervision of Meghan McKenna an M.A candidate from the University of Guelph.

This Career and Technology Studies Credit was created following a pre-research visit to Arctic Bay in February 2007. During this visit Inuujaq School and Ron Elliott of Nunavut Youth Consulting requested that research training be provided to youth for the duration of the University of Guelph research project entitled *Youth-led Vulnerability Research and Adaptation to Change*. In response to this request the Social Science Research Methods training course was developed at the University of Guelph from February to April 2007. The training course includes workshops on project planning, note taking, advertising, selecting and recruiting participants, survey development and distribution, gathering and analyzing results, report writing, and meeting and conference planning and etiquette.

To gain these skills and satisfy the requirements of a Career and Technology Studies Credit course these students completed approximately twenty-five hours of study on the theory of research and six weeks of practical training as a research assistant. Attached to this letter please find a skills transcript, which lists the skills they have acquired.

If you have any questions or concerns please contact me at the above address and phone number.

Sincerely,

Career and Technology Studies Credit – Social Science Research Methods
Skills Transcript

UNIT ONE – UNDERSTANDING SOCIAL SCIENCE RESEARCH

- Understands the definition and concept of social science research
- Knows the steps of a social science research project
- Understands how research can be used to solve a problem or to make a better argument
- Understands how to translate issues and solutions into research questions
- Has brainstormed and discussed some ways to do research and considered the pros and cons of these research methods

UNIT TWO – ORGANIZING AND CONDUCTING A RESEARCH PROJECT

- Has the ability to advertise research activities (in English and Inuktitut)
- Has the ability to recruit and register participants
- Has developed an understanding of some of the effective methods of organizing a research project including time management, punctuality, flexibility etc.

UNIT THREE – LEADING AN INTERVIEW AND/OR FOCUS GROUP

- Has learned how to develop appropriate and effective interview questions
- Can schedule and manage volunteers
- Can run a focus group (getting participants to speak, feel comfortable, to positively and respectfully contribute to a group discussion)
- Has learned basic filming and note taking methods

UNIT FOUR – CREATING AND DISTRIBUTING A SURVEY

- Can create and distribute a survey online through www.surveymonkey.com
- Can identify key concerns and themes from survey data
- Understands how to present (oral and written) data collected from a survey

UNIT FIVE – ORGANIZING DATA AND ATTENDING CONFERENCES/MEETINGS

- Has contributed to a report on how to engage Nunavut youth in research projects
- Has communicated with other researchers and the media about the research project
- Has been invited to attend two conferences in December 2007
- Is working towards obtaining a passport and travelling outside of Canada

APPENDIX 7 - *Participant Consent Form*

Project Title: Youth-led Research: Assessing the Vulnerability of Inuit Youth in Arctic Bay to Social and Environmental Change

Project Description: This work aims to –

1) develop an understanding with youth how social and climate change interact to affect the well-being of Arctic Bay, particularly youth,
2) identify youth's recommendations on what can be done to better cope with these changes,
3) establish with youth research and policy initiatives that will enhance adaptive capacity in the future, and
4) build capacity for research and transferable skills among youth.

Contact Address: Meghan McKenna, Dept. of Geography, University of Guelph, Guelph, Ontario, N1G 2W1, phone: (519) 824 4120, email: mmckenna@uoguleph.ca

Medium of interview: face to face, audio taped (if permission granted),

Conditions for release of recorded information:

Statement of informants rights: *I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to being interviewed for the project. I understand that steps will be undertaken to ensure that this interview will remain confidential unless I consent to being identified. I also understand that if I wish to withdraw from the study, I may do so without repercussions.*

Name (please print): _____

Signature: _____

Date: _____

Signature witness: _____

_____ I desire that my identity and the information I provide be confidential

OR

_____ I desire that my identity be non confidential and that the information I provide be attributed to me

_____ I give permission for use of audio tape