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**A Critical Examination of Sustainability Considerations in Yukon
Environmental Assessment – Past and Present**

By

Louisa M. Clementino

Bachelor of Arts, Wilfrid Laurier University, 2005

THESIS

**Submitted to the Department of Geography and Environmental Studies
in partial fulfillment of the requirements
for the Master of Environmental Studies degree
Wilfrid Laurier University**

2008©

Louisa M. Clementino 2008

ABSTRACT

The Northern regions of Canada, as a result of landscape characteristics and political and cultural dynamics, present unique challenges and opportunities for meeting sustainability goals through environmental assessment (EA) processes. In order to understand the significance of the EA process in the North and its applicability to fulfilling sustainability goals, the past and present EA regimes of the Yukon are evaluated adopting a sustainability-focused framework. Unique changes to the Yukon EA process, as a result of land claim agreements and devolution have created innovative structures and processes, reflective of the environmental, socio-economic, cultural and political circumstances of the region. The evaluative framework was derived from EA and sustainability literature and supplemented by northern environmental management and sustainability considerations. Data collection methods included document reviews and 21 semi-structured interviews with informants familiar with past and present EA regimes of the Yukon. The findings highlight improvements to the Yukon's EA regime over time, in terms of increased levels of accountability, greater consideration of northern socio-cultural and ecological values, improved opportunities for participation and access to information and a greater recognition of First Nations values and role as decision makers. Yet weaknesses remain, such as the level of transparency at the decision making stage, the duplication of effort and lack of integration with other processes, and the failure to incorporate socio-economic mitigation measures. Considering that the Yukon's EA system is one of the most recent EA processes in the country as well as in the north, its evaluation provides valuable insights into the initiatives and processes required for achieving sustainability within Northern EA regimes.

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LIST OF ACRONYMS

BEARP	Beaufort Sea Environmental Assessment and Review Process
CEAA	Canadian Environmental Assessment Act
CYI	Council of Yukon Indians
CYFN	Council of Yukon First Nations
DAP	Development Assessment Process
DB	Decision Body
DIAND	Department of Indian Affairs and Northern Development
DO	Designated Office
EA	Environmental Assessment
EARP	Environmental Assessment Review Process
EARPGO	Environmental Assessment Review Process Guidelines Order
EC	Executive Committee of the Yukon Environmental and Socio-economic Assessment Board
EIS	Environmental Impact Statement
EISC	Environmental Impact Screening Committee (under the Inuvialuit Final Agreement)
EIRB	Environmental Impact Review Board (under the Inuvialuit Final Agreement)
FEARO	Federal Environmental Assessment Review Office
IEE	Initial Environmental Evaluation
IFA	Inuvialuit Final Agreement
ISR	Inuvialuit Settlement Region
MVRMA	Mackenzie Valley Resource Management Act
NAFTA	North American Free Trade Agreement
NEPA	National Environmental Policy Act
NGO	Non-governmental organization
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claim Agreement
NWT	Northwest Territories
PPP	Policies, plans and programs
RA	Responsible Authority
RB	Regulating Bodies
RERC	Regional Environmental Review Committee
RRC	Renewable Resource Councils
SEA	Strategic Environmental Assessment
TK	Traditional Knowledge
UFA	Umbrella Final Agreement
WCED	World Commission on Environment and Development
YEAA	Yukon Environmental Assessment Act
YOR	Yukon Online Registry
YTG	Yukon Territorial Government
YESAA	Yukon Environmental and Socio-economic Assessment Act
YESAB	Yukon Environmental and Socio-economic Assessment Board

1 INTRODUCTION

1.1 *Context of Study*

The well-being of society and the economy is dependent on the well-being of the natural environment. Consequently, management and planning of the environment and its resources are required in order to maintain and enhance the viability of both the natural and human systems. Environmental Assessment (EA) has emerged as an important environmental management tool for addressing the complex and conflicting relationship between development and the state of the natural environment as well as the well-being of society and communities. As elsewhere, EA has become an important tool in Canada's Northern regions. EA has become an optimistic means of balancing the needs and priorities of First Nations as well as Northern communities with large-scale development projects that are common to the Northern regions. The viability and integrity of Northern natural and human systems are often destabilized by 'unsustainable' development and decision-making practices; a reflection of the region's vulnerability. Consequently, EA can be used as a means of addressing this vulnerability and can be used to promote sustainable development in Northern regions.

Over the last 30 years there have been changes to the EA process at a worldwide scale (Noble, 2006; Sadler, 1996; Wood, 2003). Over this time EA processes have evolved to processes less focused on meeting regulatory requirements and acceptable levels of tolerance. The EA process has shifted its narrow scoping considerations to move beyond environmental and technical-based effects and include cultural, social and economic impacts of projects. Likewise, provisions have been made to provide greater

opportunities for public involvement as well as a greater sense of accountability supported by ensuring transparency.

Most of the literature surrounding the effectiveness of EA tends to focus on the procedural qualities of the process and less on the substantive merits. Yet researchers contend that the substantive means of EA are valid measures of its effectiveness. The substantive aims of EA processes stretch beyond the procedural aims to consider the effectiveness of EA as a tool for achieving sustainability. Sustainability, Sadler (1996) contends is a key aim of EA.

Sustainability literature highlights several principles that should be adopted, should sustainability be sought. These principles can also be applied to the EA process and its practice in order to effectively gear the process towards sustainability and decisions that will support sustainability initiatives for a particular context. Such principles include providing opportunities for public participation, in such a way as to capture the needs and priorities of affected people in decision making. Moreover, public participation can support visioning exercises for present and future scenarios at the local and regional level. In addition, EA processes can employ a holistic approach that considers the inherent linkages between different components that make up the socio-ecological system of a particular region and that will ensure that the essential relationships and processes are not impaired. Likewise, EA can integrate different scales of scoping – both spatial and temporal. In this way, the needs and priorities of current and future generations will not be jeopardized by development-related decisions as cumulative impacts can be considered and taken into account beyond the project-level.

Consequently, EA regimes have the potential to integrate elements and provisions that support sustainability and its principles.

Yet, the sustainability aims and objectives of EA will be dependent on the context for which it is applied. The implications of such are evident when one considers Northern contexts, which differ substantially from southern contexts in cultural make-up, ecological characteristics and dynamics, political structures and processes as well as socio-economic characteristics. These factors illustrate the need for EA processes to be tailored to northern contexts and notions of sustainability.

There have been various changes to environmental management and planning in the north as a result of land claim agreements, the role of co-management boards and the process of devolution. The changes that have taken place have been influenced by the realities of the north, which include the dominance of non-renewable resource industries, the inverse relationship of benefits and impacts between southerners and northerners, as well as a lack of local control and decision-making authority regarding developments. The Berger Inquiry of 1977 highlighted the inadequacies of the former EA processes at properly and effectively addressing the needs and concerns of northern people, particularly First Nations peoples. As a result of such changes and influences EA processes in the North incorporate various provisions that resonate well with the sustainability discourse. These provisions include an increased role of First Nations in the process, as participants and decision makers, as well as the inclusion of the values of northern people. In this way, northern EA processes are better at incorporating and acknowledging the intrinsic relationship between northerners and their landscape.

1.2 *Rationale and Objectives*

Canada's northern regions present special challenges and opportunities for meeting sustainability goals through EA processes as a result of unique ecologies, economies, political structures, and socio-cultural dynamics. Considering Canada's Northern EA regimes within the scope of meeting sustainability as a substantive objective provides valuable insight into EA research. Many of the EA regimes have undergone changes that reflect the unique cultural make-up, political circumstances, and environmental characteristics of the region, which are major criteria for EA promotion of sustainability. As Shearman (1990) contends, sustainability initiatives should be specific to the context for which they are applied, and tailored to the particular needs and capacities of the setting.

The Yukon presents an interesting case to study as various political changes have taken place paralleling other Northern regions. The evolution of the Yukon EA system over the years, largely the result of land claim agreements and devolution, has brought about an innovative regime, reflective of the Yukon context. The Yukon Environmental and Socio-economic Assessment Act (YESAA) is the territory's most recent and current EA process. It is a unique EA regime tailored to reflect its citizens' values and priorities, both Aboriginal and non-Aboriginal, as well as enhance and secure First Nations participation. Consequently, the examination of such a northern EA regime that shares typical dynamics and social structures provides an excellent opportunity to understand and explore the notion of sustainability as a goal of the EA process within a Northern Canadian context. In addition, since YESAA is still in the initial stages of implementation, such consideration and study provides valuable insights into the various

initiatives that exemplify and reinforce notions of sustainability within the EA regimes of Northern regions. Accordingly, using the Yukon as a case study for the purpose of this research will contribute to literature linking sustainability and EA within a northern Canadian context.

Therefore, this project intends to document and evaluate the evolution and current state of EA processes in Yukon to the answer the question of how effective these processes have been, and are, at reflecting and fostering principles of sustainability. In this regard, the research's main objectives are:

- To formulate a sustainability-focused framework tailored to reflect Northern circumstances that can be used to evaluate the success of Northern EA regimes at adopting sustainability aims through EA
- To evaluate the evolution and current state of Yukon EA at promoting sustainability in relation to the sustainability-focused framework
- To identify gaps and opportunities in the Yukon EA process from a sustainability perspective
- To link such research findings to pertinent literature on other Northern EA regimes in Canada.

1.3 *Research Design*

In order to achieve the desired objectives and aims of this research project, the research design was based on a case study approach. An extensive analysis of the Yukon's EA regime was conducted in such a way as to consider elements and provisions of sustainability necessary in Northern EA regimes.

The research project was undertaken in three phases: (1) a literature review (2) collection of pertinent data pertaining to the case study (3) analysis of the data collected in the second phase pursuant to the information collected in the first phase.

1.3.1 Framework

A literature review was carried out in order to develop the evaluative framework and criteria that would be tailored to a northern context. The literature review focused on (1) sustainability and EA (2) Northern EA processes and (3) the significance of sustainability to and within a Northern Canadian context. The literature review assisted in identifying themes that are pertinent to sustainability-focused EA, as well as highlight the significance of such themes to northern settings and EA processes.

To address the research objectives in this study, the evaluative framework was based predominately on Gibson et al. (2005) and incorporated principal elements outlined in the International Institute for Sustainable Development's report *The Bellagio Principles for Assessment* (Hardi and Zdan, 1997). The key components from the works were deduced to be conducive to a northern Canadian context. Literature pertaining to historic and potential future developments in the North, in conjunction with a study of northern EA practices and processes, assisted in identifying key features that are more significant in northern regions and northern EA processes.

The literature review identified seven key components that make up the evaluative framework. The seven components were explored further to identify the significance of each to a northern EA regime and northern context.

1.3.2 Case Study

The Yukon and its EA regimes served as the case study for the purposes of this research. The Yukon has had 5 different EA regimes in effect over the last four decades. The shifts in the regimes mirror changes of the federal EA regimes, due to extensive federal control and authority over land and resources in the past. Consequently, the Environmental Assessment Review Process (EARP) and the subsequent Environmental Assessment Review Process Guidelines Order (EARPGO) were the earliest EA regimes in the Yukon. The EARPGO process was replaced in 1995 by the *Canadian Environmental Assessment Act* (CEAA), which legally stipulated and required EA to be carried out by the federal government. The major changes in the Yukon to EA processes have come about from the land claim agreement ratified in the Umbrella Final Agreement (UFA), as well as the devolution process, introducing the *Yukon Environmental Assessment Act* (YEAA), and the *Yukon Environmental and Socio-economic Assessment Act* (YESAA). The latter EA regime, YESAA, which is currently in effect in the Territory, was drafted from the UFA and includes provisions that address the failings of past EA regimes, such as providing First Nations with a greater decision making powers and participation in the EA process. The past and present EA regimes of the Yukon were evaluated under the sustainability-focused framework.

1.3.3 Data Collection

The data collected included a review of literature and documentation including government documents such as EA policy and legislative instruments relevant to past Yukon EA regimes as well as the current regime. This was further supplemented with

interviews with people familiar with the past and present Yukon EA regimes. Twenty-one semi-structured interviews were carried out with key informants during the months of May and June 2007 during fieldwork placement in Whitehorse, Yukon. In order to capture a broad array of interests and opinions concerning the Yukon EA system and sustainability, interviewees were selected from different sectors and held varying positions related to EA practices in the Yukon. In this way, the interviewee pool included representatives from federal and territorial government agencies and regulatory bodies as well as associated resource management agencies, consulting firms, industry, First Nations, non-governmental organizations (NGO's) and EA practitioners. Interviewees were asked a series of questions which reflected the components set up in the framework. In this way, informants offered insight and perceptions to each of the components of sustainability, highlighting the integration, or lack of it, of each of the components in the Yukon's EA process.

1.3.4 Data Analysis

The data collected through the interviews and the review of documentation and literature were organized into various groupings. The first grouping was according to interviewees and their represented parties. The second grouping of data involved excerpting data relevant to each of the various regimes of the Yukon. And lastly, the data was excerpted according to each of the components in the framework. From these groupings, the data was analyzed and interpreted to generalize findings of the Yukon EA system case study from a sustainability perspective. It also allowed gaps and opportunities in the process for fulfilling sustainability goals to be identified. The

findings from the Yukon case study were then broadened and linked to other northern EA regimes.

1.4 Thesis Outline

This thesis is organized into 5 chapters. Chapter 2 provides a review of the literature pertaining to sustainability and environmental assessment and the connection between the two. It also provides a summary of literature pertaining to sustainability in Canada's north and northern EA regimes. Subsequently, the chapter describes the conceptual framework from which the evaluative sustainability-focused framework is developed. Chapter 3 describes the research design, the rationale behind the research methods employed and the logistics used to carry out this research project. Chapter 4 provides an in-depth description of the case study for this research. The chapter also highlights significant political, social and institutional changes that have occurred and have influenced the environmental and resource management regime in the Territory, including EA. The findings of the research project are highlighted in chapter 5. Lastly, chapter 6 summarizes the principle findings of the project and proposes recommendations. It also highlights the project's contributions to the literature and provides suggestions for further inquiry.

Appendices include the following; a list of the interview questions and the consent form used in this study, outlining the purpose of the project and how the information will be used, as well as a synopsis of the information collected from the interviews.

2 ENVIRONMENTAL ASSESSMENT AND SUSTAINABILITY

This chapter provides in-depth review of literature pertaining to the theory and practice of environmental assessment (EA). The chapter considers the various definitions associated with the term and their implications. The objectives of EA are also considered, along with a summary of the evolution of EA, particularly within Canada and its application in the north. The chapter then reviews the literature pertaining to sustainability, considering the history of the term and its application from a variety of perspectives. Themes associated with sustainability are summarized. The relationship between sustainability and EA is investigated. Lastly, the chapter provides an examination of sustainability components pertinent to northern Canadian context and northern EA regimes.

2.1 *Environmental Assessment*

EA has become the most influential tool for the implementation of environmental regulation and policy in North America (Hanna, 2005). In addition, EA is the most widely practiced environmental management tool in the world (Noble, 2006) and over 100 countries have developed their own EA system (Petts, 1999).

2.1.1 Definitions

There is no single generally accepted definition for EA. Table 2.1 summarizes the variance in definitions of EA from both academic literature and EA-associated government bodies and organizations.

Table 2.1 Comparison of Environmental Assessment Definitions

Definition*	Source	Anticipatory	Social Component	Mitigation
...an activity designed to identify and predict the impact on the environment and on man's health and well-being of legislative proposals, policies, programs, projects, and operational procedures, and how to interpret and communicate information about the impacts	Munn (1979)	No	Yes	No
... a process , a systematic process that examines the environmental consequences of development actions, in advance	Glasson et al. (2005)	Yes	No	No
...process (i) identifies, analyses, evaluates environmental ¹ effects of proposed projects (ii) integrates environmental considerations and public concern into decision making (iii) helps decision makers achieve sustainable development	Noble (2006)	Yes	Yes	Yes
a process which (i) identifies possible environmental effects, (ii) proposes measures to mitigate adverse effects, and (iii) predicts whether there will be significant adverse environmental effects, even after the mitigation is implemented	Canadian Environmental Assessment Agency (2005)	Yes	No	Yes

* Author's emphasis in bold

¹ Environment in Noble's definition includes the biophysical environment (air, water, land, flora and fauna) as well as the human environment (culture, health, community sustainability, employment, financial benefits)

There are some parallels in the definitions; most notably the emphasis on identifying environmental impacts of development. Noble (2006) contends that other definitions of EA as a tool, a methodology and in some cases a regulatory requirement are all inappropriate. He argues that indeed it is a process and should be recognized as such. Yet discrepancies in EA definitions remain and are apparent in the literature. These include not clearly defining EA as an anticipatory process, carried out prior to development taking place. The consideration of impacts on the human environment as a consequence of development projects is also lacking in several EA definitions. Likewise, some definitions do not explicitly define EA as a tool for proposing alternatives and mitigation measures in the assessment of projects.

For the purposes of this paper, the definition of EA that will be used identifies important aspects of the process which correlate well within a Northern Canadian context and reconcile much of the discrepancy that permeates EA definitions. Noble (2006, p.3) defines EA as:

- a comprehensive and systematic process designed to identify, analyze, and evaluate the environmental effects of proposed projects;
- a process that allows for the effective integration of environmental considerations and public concerns into decision-making processes;
- and a powerful tool to help decision makers achieve the goal of sustainable development.

In Noble's (2006, p. 3) definition, environmental effects include those on the biophysical environment composed of air, water, land, flora and fauna and the human environment made up of culture, health, community sustainability, employment and financial benefits.

2.1.2 Purpose of Environmental Assessment

Glasson et al. (2005, p.8) state there are three fundamental purposes of the EA process: “an aid to decision-making, an aid to the formulation of the development actions, and an instrument for sustainable development.” There is recognition that EA should serve as an aid in the decision-making process (e.g. Doyle and Sadler, 1996; Gibson, 2002a; Hanna, 2005; Maclaren and Whitney, 1985), as it promotes informed decision making concerning development projects with full knowledge of the anticipated trade-offs and environmental consequences (Glasson et al., 2005; Hanna, 2005). EA also prompts developers and other stakeholders to consider the environment in the planning stage (Hanna, 2005). Thus the environment is taken into account and is included in cost-benefit and other analyses. EA has also become an effective tool for promoting sustainable development (Gibson et al., 2005; Glasson et al., 2005; Sadler, 1996). Sadler (1996) argues this is the key aim of EA, which ensures that environmentally sound and socially accepted development can take place.

An analysis of EA literature indicates there are two dominant EA objectives; procedural and substantive. Most EA literature focuses on the effectiveness of EA meeting procedural objectives (Ensminger and McLean, 1993; Frost, 1997; Petts, 1999). Procedural objectives such as output objectives are immediate and short-term in scope and include the assurance that environmental factors are adequately addressed in decision-making, the design of the project is improved, adverse effects on the human and natural environments are mitigated, anticipated and avoided, and lastly, informed decision making occurs (Noble, 2006, p.3). In contrast, substantive EA outcomes are broader in scope, with a long-term perspective employed, and an overreaching

contribution to environmental and resource management policy and discourse.

Substantive objectives of EA include the facilitation of public involvement in development decision-making, the maintenance of natural and human systems' integrity, as well as the promotion of sustainable development (Noble, 2006). Section 2.3 will concentrate on sustainability as a substantive goal of EA.

2.1.3 Generic Stages in the Environmental Assessment Process

EA processes vary from nation to nation and from jurisdiction to jurisdiction; yet most EA processes follow six general stages (Table 2.2). As Hanna (2005) explains, it is important to note that stages outlined in Table 2.2 are idealistic and variances are prevalent between different EA regimes. The variance between EA processes results largely from regulatory and legislative requirements in the associated jurisdictions which establish the role and level of public participation. Legislation and regulatory requirements also determine what components are to be considered in the assessment; whether it is to focus predominately on impacts to biophysical features and elements or to include and assess impacts to social, economic and cultural spheres.

Hanna (2005) contends that the decision-making stage (Stage 5 in Table 2.2.) in practice is complex and is dependent on the jurisdiction. In some instances, the decision can be considered more of a recommendation, with the Minister responsible for EA making the final decision, which may include overturning the EA-responsible agency's decision or, for want of a better word, "recommendation". The extent or forum for decision making also is dictated by jurisdiction. Small-scale projects with less public

Table 2.2 Generic Stages of the Environmental Assessment Process

Stage 1 <i>Proposal</i>	<ul style="list-style-type: none"> • Provides description of the proposed project (e.g. the nature and temporal and spatial extent of the project) • Alternatives may be considered and identified • Provides details for the assessment
Stage 2 <i>Screening</i>	<ul style="list-style-type: none"> • Determines if an EA is required subject to legal and regulatory requirements • If required, determines the level and type of assessment required (e.g. panel review, small scale assessment by an assessment agency)
Stage 3 <i>Scoping</i>	<ul style="list-style-type: none"> • Establishes what EA is to address in terms of impact-types (e.g. social or biophysical features or both) • Potential impacts and key issues are identified • Focuses attention of the assessment • Consider available baseline data • Can include stakeholder consultation
Stage 4 <i>Assessment of Proposal</i>	<ul style="list-style-type: none"> • Collection of data subsequent to requirements established in stage 3 • Data Collection should include <ul style="list-style-type: none"> ○ Baseline data as well as supplementary new data ○ Impact prediction of likely impacts as well as the determinance of impact significance • Mitigation plan and strategy is established in order to eliminate and reduce impacts • A monitoring and compliance program may be outlined
Stage 5 <i>Submission, Review and Decision</i>	<ul style="list-style-type: none"> • EIA Report is compiled subject to requirements established by the assessment agency • Assessment findings from stage 4 are presented in the EIA Report, which is submitted to the responsible decision making assessment agency • The role of the decision making process is dependent on the jurisdiction • The information presented in the EIA report should assist in informed decision making • Determines whether the proposed project should proceed and under what conditions
Stage 6 <i>Implementation and Monitoring</i>	<ul style="list-style-type: none"> • A fairly recent stage • Extent of monitoring is dependent on the jurisdiction • Monitoring can include <ul style="list-style-type: none"> ○ Compliance with conditions set up in approval, license, etc. ○ The effectiveness of mitigation strategies ○ The accuracy of impact predictions

Adapted from Hanna, 2005; Noble, 2006.

concern may undergo internal decision-making within an administrative agency, whereas large-scale projects and those with greater public concern may involve public hearings in order to capture public perceptions and opinions and include such information in the decision-making process.

The monitoring stage, (Stage 6 in Table 2.2) in recent years has emerged as a new stage in the EA process. Nonetheless, it has not been successfully incorporated into many EA regimes and the level of integration of this stage varies between jurisdictions. Some jurisdictions have weak linkages established between agencies that establish the approval conditions and those which monitor compliance. Overlooking such linkages erodes the potential benefits that monitoring can contribute to an EA regime. Such contributions include enhancing EA efficiency and baseline data (Hanna, 2005). Monitoring can contribute to EA efficiency by adopting principles of adaptive management whereby information retrieved from monitoring programs feeds back into the system in order that is able to re-adjust itself and work more effectively, allowing for better impact predictions to be made and reducing costs. Monitoring and its contributions to baseline data can be beneficial, as baseline data is the foundation of assessments and prediction (Hanna, 2005). This contribution is particularly beneficial in jurisdictions where there is a lack of baseline data.

2.1.4 The Evolution of Environmental Assessment

There have been considerable changes to the EA process worldwide over the three decades since its inception, in the United States in 1970, with the *National Environmental Policy Act* (NEPA, Noble, 2006; Sadler, 1996; Wood, 2003).

The NEPA of 1970 first outlined EA as a mandatory procedure under law, requiring proponents to describe the proposed project, the potential impacts on the environment and proposed actions to manage or monitor such impacts (NEPA, 1970). The NEPA, thereby, established EA as a planning tool, guiding development-related

decision-making. Canada followed suit in 1973, introducing the Federal Environmental Assessment Review Process (EARP). However, it was not entrenched into Canadian law until 1995 through the *Canadian Environmental Assessment Act* (CEAA).

Prior to the inception of EA in NEPA and EARP, development projects in the 1950s through to the 1960s were assessed on the grounds of technical feasibility and cost-benefit analysis. Development occurred with little regulation and little concern for impacts on the environment or communities (Gibson, 2002a) particularly, with respect to First Nations communities and traditional ways of life (Bone, 2003; Wismer, 1996). These traditional assessment measures were not equipped to properly assess impacts to the natural and social environment because they were based solely on economics and environmental and social concerns were not considered (Noble, 2006).

EA systems have become more advanced over the years in order to surpass their primary shortcomings and improve their efficiency in environmental management and planning. EA has provided an excellent forum to engage the public in development decisions (Hanna, 2005; Gibson, 2002a; Sinclair and Diduck, 2001). It has also prompted broader changes in environmental policies and programs (Hanna, 2005) including applying EA to individual resource sectors such as forestry and waste management and treatment as well as cumulative effects assessment within specific areas, which considers the effects of new projects in conjunction with pre-existing projects, considered on the basis of a sector, or in combination with other sectors (Gibson et al., 2005). EA has also been applied at a broader level with less focus on a project and specifics, and more on government policy, plans and programs. Such applications of EA, referred to as Strategic Environmental Assessment (SEA), have been quite practical in application in countries

with limited administrative capacity such as Malawi (Wood, 2003) and Mozambique (Duffy, 1992). Although there have been successful attempts to promote EA application beyond its conventional context, some scholars, like Noble (2006), argue that EA predominantly and primarily still remains a tool for minimizing and preventing environmental effects.

2.1.5 Environmental Assessment in Canada

Consistent with many of the changes to EA worldwide, Canada's EA system has undergone some substantial changes during the course of its application and practice over the last three decades. Canada followed the United States' lead in 1973, introducing its own EA process, the Federal Environmental Assessment Review Process (EARP). EARP remained a relatively administrative procedure; with the discretion for compliance falling on the proponent and the responsible government department in terms of following procedures and implementing recommendations (Fenge and Smith, 1986). EARP was carried out by federal departments for projects funded by the federal government and/or projects taking place on public Crown land. Prior to the establishment of EARP, projects initiated by the federal government and/or that fell under its jurisdiction were screened for potential pollution effects (Gibson, 2002a). The EARP process was a phased approach. The first phase involved the screening for potential environmental effects and the proposal of relevant mitigation measures. The effort in screening varied according to the significance of the potential impacts (McCallum, 1987). The second phase of EARP was reserved for projects with the potential for significant environmental effects and involved a formal public review process (McCallum, 1987). The federal department

responsible for initiating the EARP process was also responsible for ensuring that the proposed recommendations were addressed during all stages of the project; from construction, to operation to abandonment.

By the late 1970s, the process was being ignored by many government agencies and it was considered inefficient (Smith, 1993). An external review of EARP by consultants reported an uneven implementation of the process and a lack of interest, along with a disregard for policy obligations by federal departments including the Department of Environment (Lavalin Econosult, 1982, cited by Gibson, 2002a). These issues arose from having EARP operate on a self-assessment principle and not having a legislative basis. The self-assessment principle required that federal departments responsible for proposed projects would also be responsible for assessing the environmental impacts associated with the project, and as a result have the ability and power to determine the amount of concern to be attributed to environmental issues (McCallum, 1987). Moreover, an evaluation by Beanlands and Duinker (1983) highlighted the lack of attention to ecological relationships as a result of the narrowly-focused investigative design employed by assessors. Public participation also remained a concern, particularly with the lack of public participation in the first phase of the EA. Likewise public participation, at the public review phase, was only available later on in the process; at the review and hearing stages and once the proponents had already submitted a proposal (Gibson, 2002a).

In 1984, by Order in Council under the *Government Organization Act* (1979), the Environmental Assessment Review Process Guidelines Order (EARPGO) was issued. The EARPGO established a formal description of the procedures and the process (e.g.

Government of Canada, 1987) and compliance by the federal government's departments began to improve (Gibson, 2002a). Yet EARPGO remained a self-assessment process, and not having a legislative basis government departments continued to ineffectively and unevenly apply the process (Gibson, 2002a). Major court cases, such as the Rafferty-Alameda Dam in southern Saskatchewan (1989) and the Oldman River Dam in Alberta (1992), influenced the push for and establishment of a legislated EA process.

In 1992, EA became entrenched into Canadian law through the *Canadian Environmental Assessment Act* (CEAA) and came into force, along with an associated group of regulations, in 1995. CEAA is applicable when a federal authority is the proponent of a project, funds a project, administers and disposes federal lands for the project and/or issues a permit or license for the project (CEAA, s.5). With the introduction of CEAA, the definition of environmental effects was broadened to include related impacts to traditional use of lands and resources and areas of archaeological significance. Moreover, the legislation outlines intervener funding opportunities available for the interested public, as well as the inclusion of considerations of malfunctions, accidents, and cumulative effects in the screening phase of the assessment process. The scope of EAs continued to focus solely on socio-economic impacts directly related to environmental impacts. Likewise, follow-up and monitoring, as in the previous EA regimes, is weak, as it is not obligatory and can be suggested as a recommendation (Gibson, 2002a).

In Canada, both federal and provincial levels of government as well as a number of First Nation governments possess their own EA systems; most follow the same basic

ideas yet can differ in terms of application and procedure (Hanna, 2005; Noble, 2006; Wood, 2003).

In 1998, Ministers of the Environment from all provinces and territories (except Quebec) signed the Canada-Wide Accord on Environmental Harmonization and the Sub-agreement on Environmental Assessment (Canadian Council of Ministers of Environment, 1998). The harmonization agreements permit EA processes to be coordinated between the two levels of governments for projects requiring assessments under both federal and provincial EA regimes. As a result, the application of CEAA is restricted to projects on federal or First Nations lands and the federal government's departments and agencies have more of a supporting role in the environmental assessment (Hazell, 1998, cited by Herring, 2005). CEAA is also applied to the assessment of international projects (Herring, 2005)

Gibson (2002a) catalogues the evolutionary changes to the EA process in four stages (Table 2.3) and the changes to Canada's EA system coincide with these stages. For instance, the system has shifted from focusing on regulations and mitigating biophysical effects, towards a more inclusive process, with increased opportunities for stakeholder participation and the consideration of socio-economic effects apart from biophysical effects.

These changes in conjunction with landmark assessments, such as the Mackenzie Valley Pipeline Inquiry (1974 -1977), the James Bay Hydroelectric Project (1975) and Voisey's Bay Mine-Mill Project (1997), have prompted Canada's EA system to adopt some principles of sustainability in assessment processes. Yet Gibson (2002a) argues Canada's EA process has not reached stage 4 of the trajectory, which exemplifies EA as a

Table 2.3 Evolutionary Stages of Environmental Assessment

Stage 1	<ul style="list-style-type: none"> • Reactive • Pollution control (air, water soil) • Closed-door negotiation between government officials and developers 	EARP
Stage 2	<ul style="list-style-type: none"> • Proactive • Impact identification and mitigation • Use of approvals and licenses • Focus on biophysical • Little public involvement 	EARP EARPGO
Stage 3	<ul style="list-style-type: none"> • Broader environmental considerations (socio-economic and biophysical effects) • Consideration of alternatives • Public reviews 	CEAA
Stage 4	<ul style="list-style-type: none"> • Integrated planning and decision-making for sustainability • PPPs • Cumulative effects • Greater public involvement • Recognition of uncertainty • Favouring precautionary approach and adaptability 	YESAA

Adapted from Gibson, 2002a.

specific instrument in achieving sustainability. Therefore, significant gaps and inefficiencies remain, when examined from a sustainability perspective (Gibson and Hanna, 2005; Noble, 2006). The failure of Canada's EA system to attain status in stage 4 is due to its lack of consideration of interrelated effects between environmental, social, economic, cultural and ecological components, along with weak provisions for enforcing compliance and failing to make the considerations of alternatives obligatory (Gibson and Hanna, 2005).

2.1.6 Environmental Assessment in Canada's North

The Northern regions of Canada differ substantially from the rest of the country with respect to landscape, political structure, and cultural dynamics, presenting special challenges and opportunities for the EA process. In order to understand the significance of the EA process in the North and its applicability to fulfilling sustainability goals, it is paramount to consider the history of the EA process within a Northern Canadian context. One must look at changes to the level of participation and legal power of Aboriginal people, the political history of resource and environmental management, as well as past, present and future development in Canada's Northern regions. As Lawrence (1997, p. 31) outlines,

sustainability potential will be influenced by the area's resource base, social-cultural organization, institutional development, and economy...what is practical and appropriate will also be affected by historical experiences, political will, and the general state of technological development and knowledge accumulation.

Mulvilhill et al. (2001) also reiterate the importance of considering the history of northern regions to address sustainability and promote appropriate development in northern regions. They contend that the study of history "needs to be integrative, addressing economic, social and ecological issues, and concerned fundamentally with the interrelation of nature and culture, or more precisely, people and resources" (2001, p. 612).

Canada's territories (Yukon, Northwest Territories and Nunavut) occupy 40% of Canada's total land area of 9 million km². The combined population of the territories which totals 101,310 falls below the population of Canada's smallest province, Prince

Edward Island (Statistics Canada, 2006a, 2006b, 2006c). However, the northern territories have the largest percentage of Aboriginal people.

The history of Canada's Northern areas has been largely shaped and influenced by the exploration of the area's abundance of both renewable and non-renewable resources, which began with the early European fur trade and the Klondike Gold Rush of the 1890s. However, during this time impacts were often limited and localized, and ignored.

Nassichuk (1987) provides a very detailed chronological summary of non-renewable resource extraction in Northern Canada. During World War II, there was major emphasis on the exploration of strategic minerals, with a shift away from precious metals. After the war, there was resurgence in precious metal exploration which was heavily influenced by technological advancements, such as aerial photography, improved helicopters, and the accumulation of new information, including new topographic maps and geological sources (Nassichuk, 1987). Greater incentive for exploration in the North, particularly hydrocarbons, came in the late 1960s following the discovery of oil around Prudhoe Bay and the Beaufort Sea (Nassichuk, 1987). The dominance of a single extractive resource industry has initialized boom-bust cycles that has been, and continues to be, endemic to the North.

Much of the development in the North has taken place as a consequence of the traditional view of the North as vast and limitless, with much needed resources for Southern markets. White (2001) claims this phenomenon is a reflection of the perception of the Northern territories as "internal colonies" of Canada. An example of this was in 1958, when Canada's then Prime Minister, John Diefenbaker, introduced the "Roads to Resources" program which actively promoted resource extraction in Canada's north.

More recently, globalization and liberalization of trade have reinforced the role of the North as a hinterland; influencing its vulnerability to world demand and prices (Robertson, 1985). For instance, NAFTA has prompted resource development in the North to be continually linked to American markets (Bone, 1992, 2003).

This influence will only be intensified in the future with increased pressures from outside markets to exploit oil and gas reserves of the North, particularly, with increased exploratory activity in the Liard Valley and Mackenzie Valley of the NWT, Eagle Plains in the Yukon, and Prudhoe Bay in Alaska (CARC, 2001). The largest proved oil and gas reserves in the world are located in the Arctic region and as such; oil and gas exploration may become intensified as a result of climate change effects, which will make the exploration of oil and gas reserves more economical with the melting of polar ice (Chapin et al., 2004). Increased interest in diamond mining in Canada's north, has surfaced (Mulvilhill et al., 2001). Consequently, the Northern regions of Canada have been and continue to be the focus of large-scale development projects which can have significant environmental and social impacts (NRTEE, 2001). As a result of Northern Canada's abundance in both renewable and non-renewable resources and the continued interest in development and exploitation, the EA process will be a significant tool for future decision-making processes concerning the economy, livelihoods and state of the natural environment of Northern regions.

Historically, Northern EA was carried out under the Federal EARP. The EA process, along with other related environmental and resource management policy, was carried out from a national perspective, thereby ignoring local issues and concerns. First Nations groups were often excluded from decision-making processes, having few opportunities

for participation, despite their significant reliance on the natural environment for their cultural and social well-being (Fenge and Rees, 1987). In many instances, development projects were often approved subject to mitigation that alleviated local environmental and socio-economic impacts to an acceptable level (Bone, 1996). In addition, large scale developments, endemic to the north, were often rushed in all phases of the EA process; environmental review, approval and implementation (Mulvihill et al., 2001). This is evident when one considers the unanticipated and overlooked impacts associated with the James Bay project, resulting in mercury contamination (Mulvihill et al., 2001).

Environmental concern and awareness in the North surfaced in the 1970s with the increased environmental movement originating in the South as well as an increase in public scrutiny of southern-based development proposals brought to the forefront with major projects such as the Mackenzie Valley pipeline, James Bay and the Beaufort Sea (Mulvihill et al., 2001).

However, over the last 30 years of EA application in Canada, Canada's northern regions have experienced considerable transformations in EA application due to changes to institutional and regulatory structures and processes, most notably through comprehensive land claim agreements, the establishment of co-management boards and devolution.

Land claim agreements and co-management boards have influenced the Northern EA process by prompting greater participation of First Nations groups as well as the inclusion of traditional knowledge (TK). Land claim agreements have been negotiated since 1973 and stipulate the formal recognition of the rights and the full ownership of land and resources at the both the surface and subsurface levels to the First Nations

people. Land claims may also delegate responsibility to First Nation communities to administer social services to their communities (Dacks, 2004; Usher, 2003). Consequently, under land claim agreements, First Nations have significant power over economic and environmental matters. It is important to note that not all land claim agreements are finalized and Southern based development still continues (Mulvilhill et al., 2001).

At present, EA in Canada's North includes to the CEAA, except in the Yukon, which established its own EA system in 2003 under the *Yukon Environmental and Socio-economic Assessment Act* (YESAA), along with other lands covered by land claim agreements. Other northern EA processes, which have been established as a result of land claims include the *Mackenzie Valley Resource Management Act* (MVRMA), the Inuvialuit Final Agreement (IFA) and the Nunavut Land Claim Agreement (NLCA). These northern EA processes have harmonization agreements and/or memorandums of understanding with the federal government in regards to the application of both CEAA and the land claims-based EA process, in order to avoid the duplication of efforts.

Prior to such agreements, development occurred with little consideration or participation of First Nations in decision-making processes, despite experiencing the immediate environmental, cultural and social costs associated with development (Reed, 1990; Rees, 1987). Consequently, land claim agreements have become a new framework from which EA is carried out. Such a framework, as Reed (1990) contends, recognizes First Nations property ownership rights and management of resources, thereby controlling the pace and scale of development as well as the assurance of economic and social benefits. Reed (1990) contends further that First Nations involvement in EA

processes is a major avenue to exercise First Nations rights as established through land claim agreements.

In addition, co-management boards established under comprehensive land claim agreements bridge public government and First Nations self-government regimes in the domain of land and resource management. Co-management boards are political entities, usually made up of equal representation of governments, both federal and territorial, along with First Nations governments (White, 2001). Responsibilities of such boards include establishing quotas, carrying out environmental impact assessments for development proposals, and issuing permits (White, 2001). Examples of such boards include local Renewable Resource Councils, the Yukon Land Use Planning Council, Yukon Salmon Council, and the Yukon Fish and Wildlife Management Board.

Co-management boards play an important role in policy development and decision-making. Although the boards have no legal power to reject proposals, the decisions and recommendations made by the boards are rarely disregarded (Usher, 2003). Together, co-management boards and land claim agreements have initiated the inclusion of First Nations values, priorities and cultural knowledge into decision-making processes, particularly with regard to EA (e.g. Berkes et al., 2007; Manseau et al., 2005; Usher, 2003).

Furthermore, the devolution process, with beginnings in the 1970s, has slowly shifted responsibility and power from a 'distant' federal government to the territorial governments, allowing for greater control over previous Crown land and natural resources at both the surface and subsurface level (Robertson, 1985; White, 2001). These

changes have prompted a shift in the focus of impacts to be more specific to local and regional environments and communities.

In conjunction with such institutional and legislative changes, landmark EA cases in Canada's Northern regions have made significant contributions to Canada's entire EA system, as well as exemplifying the uniqueness of EA processes in the Northern Canadian context. These landmark cases also present fundamental constituents and features that correlate well with sustainability objectives of the EA process.

2.1.6.1 Landmark Environmental Assessments

The Berger Report of 1977 concerning the proposed Mackenzie Valley Pipeline Project (1974-1977), sparked major changes to the management of Northern resources, as well as shattering traditional views of Canada's Northern regions. As Bone (1992, p. 169) states, "this inquiry changed the course of northern development". The oil crisis of the 1970s sparked interest in the construction of a natural gas pipeline from Prudhoe Bay through the Mackenzie Valley to southern markets in the United States. Yet, the growth in the environmental movement and the emergence of First Nations political power in the 1960s ultimately affected the rejection of the proposal (Bone, 1996).

The Berger Inquiry, led by Mr. Justice Thomas Berger, became a benchmark assessment in a cross-cultural setting and has been highly influential in resource and environmental management in Canada's North (Bone, 1996; Gamble, 1978; Gibson, 2002a). It was the first major frontier project review that initiated major public participation and used 3 hearing formats; preliminary hearings, formal hearings and community hearings (Nassichuk, 1987). Although it was conducted prior to the formal inception of Canada's EA process, it formulated innovative and comprehensive measures

that have yet to be carried out again in the Canadian EA process (Mulvihill and Baker, 2001). The inquiry incited the federal government to carefully scrutinize future proposals in Northern regions, prompted greater public involvement in assessments, brought awareness to development impacts on First Nations traditional way of life, and provided greater decision-making powers to First Nations people, and ultimately fostered the inclusion of economic, socio-cultural and environmental concerns into the EA decision-making process (Armitage, 2005b ; Bone, 1992; Mulvihill and Baker, 2001). The inquiry also provided funds for local First Nations, social and environmental groups to participate (Smith, 1993). The Berger Inquiry was successful in attaining a 10 year moratorium on hydrocarbon development in the region; however, there has been a recent surge in interest in development projects in the Mackenzie Valley in response to energy demands further south (CARC, 2001).

Accordingly, the lessons learned from the Mackenzie Valley Pipeline Inquiry, coupled with changes to political structures, such as the settlement of land claim agreements in the Mackenzie Valley and an increased pressure for resource development, have influenced the design and mainstay principles of the *Mackenzie Valley Resource Management Act* (MVRMA), which outlines the EA regime for the region (Armitage, 2005b).

The Beaufort Sea project, off Yukon's North Slope, has along with the Berger Inquiry been recognized as an influential EA carried out in Northern Canada (Mulvihill and Baker, 2001). The Beaufort Sea Environmental Assessment and Review Process (BEARP) was carried out between 1980 and 1984 and considered the large-scale exploration of hydrocarbons and its associated impacts in the region. The regional

development scheme for the entire Beaufort Sea region posed considerable ecological and socio-cultural impacts that would implicate a larger extent of Canada's northern region through the development of associated transportation and infrastructure (Reed, 1990; Rees, 1983). The BEARP was the earliest attempt at integrating EA processes with general regional planning; considering impacts beyond a single specific project (Mulvihill and Baker, 2001; Rees, 1983). The panel's final report, released in 1984, is considered to be the result of one of the lengthiest and most comprehensive public reviews carried out under the EARP by the federal government in the north (Mulvihill and Baker, 2001; Smith, 1993). The review, following the earlier initiatives of the Berger Inquiry included participation and consultation with several public interest groups and local communities (Rees, 1980).

Yet the BEARP fell short of its associated aspirations and mandate as a result of circumstances, particularly changing world oil prices (Smith, 1993), as well as its conventional procedural approach, which failed to address fundamental issues of managing future development proposals for the region (Rees, 1984). It did however highlight problems with EARP, such as the inadequacy of the Environmental Impact Statement (EIS) based approach at addressing potential project designs, technologies and mitigation measures with a lack of project specifics (Smith, 1993). The EIS-based approach also limited the consideration of future policy and management initiatives for development proposals and projects in the area (Smith, 1993). Contentious debates over resource extraction activities and the viability of traditional livelihoods remained (Staples, 1987) until the signing of the Inuvialuit Final Agreement (IFA).

2.2 Sustainability

It is important to note that the terms sustainability and sustainable development, although associated, have different connotations and histories attached to them. Sustainable development became the initial, popular term with the publication of *Our Common Future* by the WCED. It is often favoured by governments and businesses as it suggests a managerial and incremental approach (Robinson, 2004). Yet the word 'development' is often considered synonymous with continued economic growth and connotes the application of a narrow range of instruments to achieve sustainability, placing emphasis on projects, technologies and activities (Lawrence, 1997). Consequently the term sustainability became more favoured by academics, NGO's and environmentalists, placing an emphasis on humans' ability to live within the constraints of their environments (Robinson, 2004) as well as the flexibility associated with the term from which it can be shaped to taken on many forms (Lawrence, 1997).

2.2.1 Definition

There is a myriad of definitions and interpretations of what sustainability and sustainable development are. However, the most popular definition of the term sustainable development originates from the 1987, landmark document *Our Common Future* issued by the World Commission on Environment and Development (WCED). The WCED defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987, p. 43). The publication established the vital element of time associated with the concept and thereby influenced the current debate (Mebratu, 1998). Key concepts were

emphasized such as addressing the needs of the world's poor as a priority and recognizing the inherent limits of social organization and technology on the environment in such a way as to not depreciate its ability to support the needs of present and future generations (Mebratu, 1998). These concepts echo the United Nation's concerns of the day over the environment and poverty. The concept of sustainable development sought to alleviate poverty, promote social equality and improve the environment through sustainable economic growth (Mebratu, 1998). The concept of "limits of growth" was considered earlier by Thomas Malthus (1766-1834), whose theory considered the relationship between population growth and food supply, in which the rate of population growth will always exceed the ability of the earth to generate food. These ideas resurfaced later in the 1970s (e.g. Meadows et al., 1972).

The popularization of the term sustainable development as a result of the WCED made its way into national and international policy development including Canada's CEAA. Yet despite such efforts, scholars contend that it has become nothing but a catchphrase (Schmidheiny, 1992) and somewhat of a cliché (Daly, 1996). Debate still resonates over the definition of the term and what it really entails. Some have concluded that sustainable development is too ambiguous and contradictory and lacks a common foundation (e.g. Daly, 1996; Tryzna, 1995), while others support the vagueness of the term which allows for the engagement of amiable discussion between different groups (Robinson, 2004).

Mebratu (1998) provides an overview of the different attempts to define the term sustainable development. Mebratu delineates three categories of definition for sustainable development: institutional, ideological and academic. Institutional definitions, such as the

one established by the WCED, focus on maximizing goals across systems of the environment, economy and society with the evaluation of trade-offs between the various components. Ideological definitions are rooted in philosophical schools, such as ecofeminism, ecosocialism and ecotheology. Academic definitions include ecological economics, which promotes assigning monetary value to underappreciated natural capital, often considered externalities in a capitalist economy, and to include such values in cost-benefit equations and development-related decision-making (e.g. Costanza, 1991). Deep ecology also falls under the academic definition of sustainable development. In this case, the basic philosophical and underlying societal structures and processes are challenged. In conclusion, which definition is chosen is often reflective of the views and ideas of its associated party, which once again reinforces the debate regarding the vagueness of the term.

Various models and ideas associated with sustainability and sustainable development have evolved subsequent to the WCED's report. Such concepts include the conceptual application of pillar systems, dualistic and spectrum-based ideas of sustainability and other ideas such as criteria and indicators (e.g. Gibson, 2002b; Natcher and Hickey, 2002).

Dualistic and spectrum-based notions of sustainability usually stretch across two categories; technocratic or weak sustainability and ecocentric or strong sustainability. Weak sustainability favours a reliance on technology, science and market-oriented policies to approach sustainability. In this case the relationship between man and nature remains overlooked and a "business as usual" approach persists. Wise use and conservation principles permeate in this spectrum. On the opposite end of the spectrum

lies strong sustainability, this involves a re-evaluation of humans' relationship with nature as well as a spiritual connection to nature and concern with the rights of other species. Strong sustainability resonates with many of the ideas associated with deep ecology (e.g. Pearce and Turner, 1990).

The three-pillar system has become a popular concept that communicates and highlights some of the common ideas associated with the notion of sustainability. These pillars traditionally have been conceptualized as ecology, society and economy but can be further partitioned into ecology, economy, culture, polity and society (Gibson et al., 2005). Gibson et al. (2005) argue emphasis should be on the interdependencies and interconnections between and among such pillars, as categorizing and segregating the pillars from one another obscures the fundamental basis of sustainability. Such linkages and connections reinforce the idea of the interdependency between the pillars and the possibility for multiple supportive gains and benefits, and conversely the lost opportunity for such gains and benefits (Gibson et al., 2005). This idea is echoed by Mebratu (1998) who concludes that the failure to recognize such is one of the epistemological flaws associated with defining the term sustainable development. When considering the concept of sustainable development one should include both a reductionist view as well as a holistic view. This idea reinforces the notion that sustainability should take on a comprehensive approach in its applicability as well as in its theoretical understanding.

2.2.2 Sustainability Themes

From the sustainability literature one can extract resonating themes, such as equity, tradeoffs, complexity, uncertainty, public participation and involvement.

Equity, one of the primary themes to emerge from the sustainable development discourse, has its roots in the report *Our Common Future*. Intergenerational and intragenerational equity emphasize that the needs of the various present and future generations are met or will be met. The active participation of various stakeholders is central to ensuring equitable decision-making and planning is carried out reflecting the values and preferences of the present generation and affected communities, as well as to some degree the anticipated needs and values of future generations.

Tradeoffs are another theme associated with sustainability. In order to achieve maximum benefits across the varying systems, tradeoffs need to be evaluated. Choices must be made between natural and human-made capital, as well as between the varying dimensions of environmental sustainability, economic sustainability, and social sustainability (Adams, 2001). Both environmental and socio-economic, short-term and long term, goals are considered in the evaluation and consideration of trade-offs. Spatial and temporal (e.g. intergenerational versus intragenerational equity) tradeoffs also need to be considered and evaluated.

Complexity is another theme that permeates sustainability literature. The idea of complexity has ties to systems theory and related discourse. In the sustainability literature, the theme complexity refers to a hierarchy of various systems (e.g. economic, environmental and social) working at several different scales simultaneously, across both spatial and temporal scales (Adams, 2001). It is imperative to recognize the multi-scale characteristics of such systems, for instance the recognition of both ecological and jurisdictions-based boundaries (Lawrence, 1997). The synergistic effects which occur as a result of the processes and interactions that occur between and within these various

systems, as a result of triggers and environmental change, need to be considered and recognized. Holling (2001, p. 391) states that sustainability involves “a small set of critical self-organizing variables and the transformations that can occur in them” during the process of societal development. Thus systems should be flexible and open in order to adapt to surprises and changes in the systems. Key components and processes that make up the systems as well as the interactions between them should be identified in order to work towards sustainability (Lawrence, 1997). Attention should also be given to triggers that inhibit or accelerate undesired feedback loops in order to avoid irreversible changes (Lawrence, 1997).

Uncertainty is often considered alongside complexity in the sustainability debate. Uncertainty refers to the inability to fully and confidently predict changes in the various socio-economic and environmental systems. The unknown variables of changes may include future technologies, the availability of future resources, feedback patterns and the needs and values of future generations (Adams, 2001). The inability to fully scope out future scenarios promotes the application and adoption of the precautionary approach, whereby caution is favoured in order that serious and irreversible threats to the environment or other systems are avoided.

Public participation stems from environmental populism discourse, which promotes the decentralization of bureaucracy and its top-down nature for a bottom-up approach at the local level. This notion evolved from the idea that those affected by development should participate in decision making (Adams, 2001). Public participation and involvement also promote the self-sufficiency and self-reliance of local systems as well as the inclusion of indigenous cultures and knowledge (Gibson et al., 2005). Public

participation and involvement in development decision-making is meant to reflect and promote values. Values and differences thus should be identified and considered in the decision-making process (Lawrence, 1997), as values determine the best means to achieve the desired ends. Sustainability is a value-laden term and its application needs to be recognized as such. Some have promoted visioning exercises to endorse the expression and understanding of citizen's values in their expression of sustainability (e.g. Hardi and Zdan, 1997). As sustainability is not a static state, neither are values, they are subject to change in response to people's present and future priorities, accordingly sustainability applications such as EA should be able to incorporate such value-based changes and priorities.

It is important to note that the list of themes highlighted here is not an exhaustive list, as such themes along with others may need to be more pronounced depending on the setting for which sustainability is sought. The question of what is sustainability and how it can be pursued is context-dependent. Shearman (1990) contends that sustainability initiatives should be specific to contexts and be tailored to the particular needs and capacities of each setting.

2.3 *Environmental Assessment and Sustainability*

EA has the potential of being a fundamental tool that addresses the implications of development projects with respect to the pillars of sustainability because it ensures that environmental and social impacts are given attention relative to the economy. It therefore serves as an important instrument for incorporating principles of sustainability and meeting goals of sustainability.

Various levels of government as well as organizations have officially incorporated the notion of sustainability in their policy, plans and programs (PPP). This is also prevalent in EA-related policies, and is included in the preamble to the CEAA (1992, c. 37) which states:

Whereas the Government of Canada **seeks to achieve sustainable development*** by conserving and enhancing environmental quality and by encouraging and promoting economic development that conserves and enhances environmental quality; WHEREAS environmental assessment provides an effective means of integrating environmental factors into planning and decision-making processes in a manner that **promotes sustainable development.**

Despite the governments' goal to include sustainability as an overarching aim of EA, very few EA's have applied sustainability as a principle aim. The adoption and usage of the term may be more of a catchphrase than anything else (Cashmore et al., 2004; Schmidheiny, 1992).

Moreover, much of the EA research has focused on the effectiveness of EA from a procedural standpoint and basis (Ensminger and McLean, 1993; Frost, 1997; Petts, 1999). Less than adequate research has been conducted to determine the validity of the EA process at meeting its goals of sustainability (Cashmore et al., 2004), in spite of the argument that the substantive objectives of EA are as valid, if not more important than the procedural objectives of EA (e.g. Gibson et al., 2005; Glasson et al., 2005; Sadler, 1996).

This lack of research may be associated with traditional views of EA, which view EA primarily as a tool for preventing and minimizing environmental problems; with little

* emphasis added

advancement beyond this conventional phase (Gibson et al., 2005; Noble, 2006).

Additionally, this lack of research may be equated with the general ambiguity of the term, sustainable development, itself and the difficulty associated with its definition (e.g. Daly, 1996; Tryzna, 1995). Yet, Cashmore et al., (2004) do not discount the validity of such a study, which seeks to explore the promotion of sustainability through EA, but rather support continued research. The underestimated linkage between EA and achieving sustainability goals, Cashmore et al., (2004) conclude is due in part to the little exploration of the relationship of EA and sustainability, a predominant focus on EA procedural principles, and the undertaking of a reductionist approach to such studies.

Doyle and Sadler (1996) contend that evaluating substantive purposes, such as sustainability, is a superior means of assessing EA effectiveness. Thus, sustainability becomes an important criterion to evaluate the effectiveness of EA on substantive grounds, as it is considered, in a broader sense, the underlying and principle goal of EA (Sadler 1996).

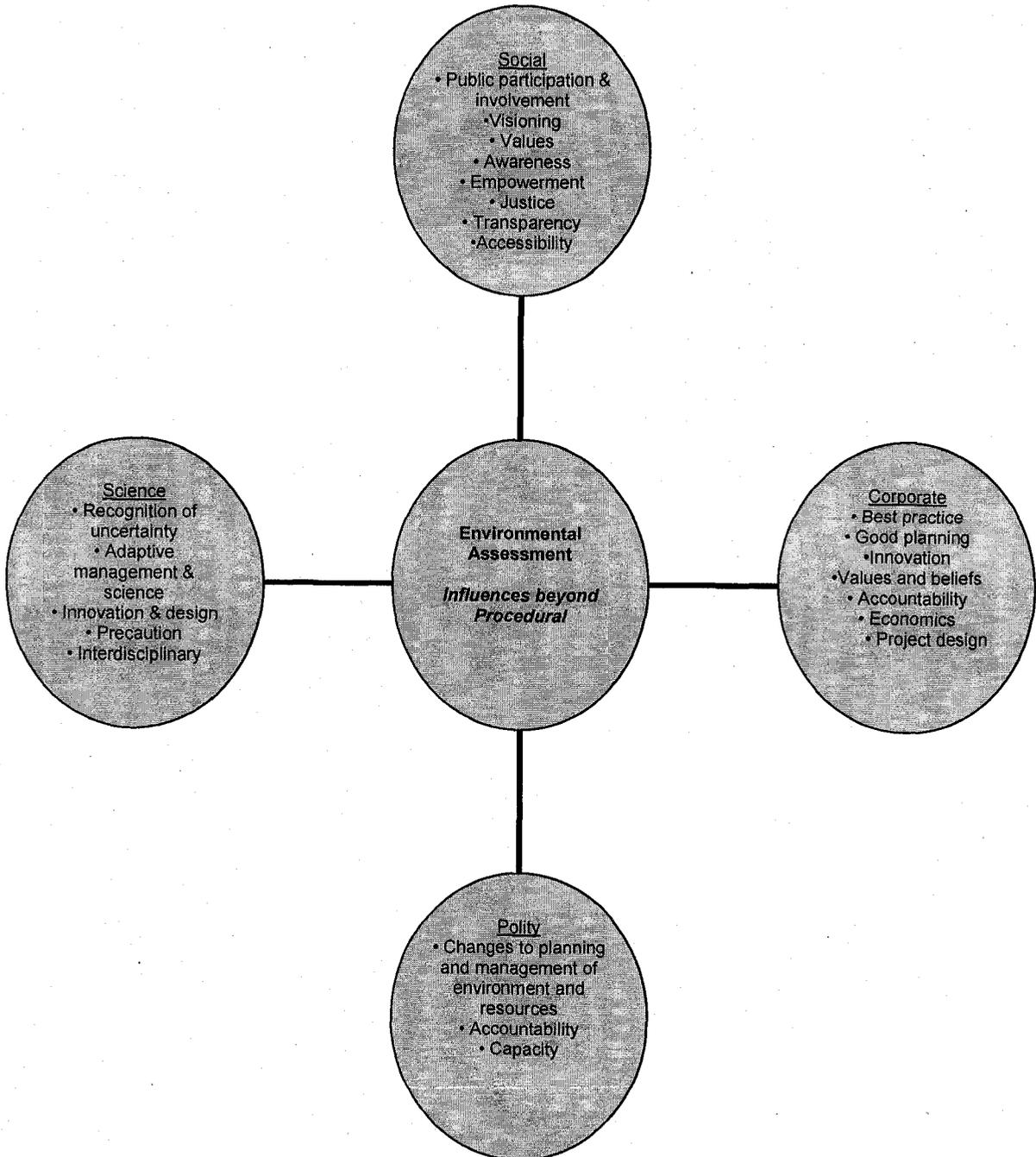
Such evaluation is of great value as EA has the potential of having extensive influence beyond the project-level and beyond its procedural and prescriptive boundaries. Multifarious ways, from which sustainability aims can be promoted through EA, can include institutional, organizational, philosophical and scientific arenas (Cashmore et al., 2004). For instance, EA can be an influential tool in environmental and resource management and planning, as well as making contributions to political and public arenas, and within the environmental sciences. EA can also empower the public through participation in decision-making, promote a precautionary approach, recognize uncertainties, consider and incorporate global and cumulative effects (Gibson, 2002b) as

well as cater to the needs and priorities of citizens involved (Figure 2.1). Wilkins (2003, p. 413) elaborates further, “the legitimacy of the process is not in its assessment results, but in its abilities to promote public participation, transparency, discourse and sustainable development”.

2.3.1 Theory and practice of integrating Sustainability and Environmental Assessment

Pope et al. (2004) compared various sustainability assessment approaches: EA, SEA and assessment for sustainability, and in a subsequent paper applied each to the Gorgon gas development project in Australia to highlight the strengths and weaknesses of each approach (Pope et al., 2005). They concluded that traditional EA is reactive and focuses primarily on minimizing negative impacts that go beyond “acceptable” levels. Other issues include the difficulty in integrating environmental considerations with socio-economic considerations and the common inverse relationship of socioeconomic and environmental tradeoffs. SEA is more proactive, whereby projects and PPP are considered in terms of social, environmental and economic objectives defined by governments. However the application of SEA is often limited and such objectives may not be fully defined or lacking. The assessment for sustainability model evaluates new proposals and existing projects subject to society’s defined sustainability criteria, which are reflective of societal views. The difficulty with such a model is deciding on a clear definition of what sustainability within the context under review is, and what are to be the standard sustainability criteria.

Figure 2.1 Environmental Assessment Capabilities – Beyond the Procedural



Adapted from Cashmore et al., 2004.

Lawrence (1997) puts forth a 3-level framework that promotes the integration of sustainability and EA. At the first level, there needs to be a conceptual understanding of what sustainability is within a context. Secondly, regulatory regimes need to be modified to include a re-definition of project intentions and scopes of EA reflective of the conceptual understanding developed. And lastly, sustainability initiatives should be integrated into each step of the EA planning process.

The evaluation of the degree of integration of sustainability initiatives in an EA process can be considered in terms of its means (instruments, procedures and processes) and ends (current and future needs, aspirations and principles) (Lawrence, 1997). As previously noted much of the research has focused on the effectiveness of EA processes from a procedural standpoint. This standpoint can be expanded further to consider procedural elements that can be used as criteria to investigate the degree to which sustainability initiatives are integrated. Such procedural criteria include the participation of multiple stakeholders, transparency and openness of the decision making process, along with the dissemination of information between differing groups and institutional cooperation (Lawrence, 1997). Criteria used to attest to the ends of an EA process include the maintenance and enhancement of quality of life, economic activity and the natural environment (Lawrence, 1997). In order to assess the integration of sustainability into EA, focus should be on both means and ends.

There are, however, notable factors inhibiting the integration of EA and sustainability, these include narrow mandates of institutions and the fragmentation of disciplines, which move away from a holistic understanding (Lawrence, 1997). Cultural and geographical barriers can also inhibit integration. George (2001) contends the focus

should be on key procedures, while Pope et al. (2005) advocate emphasis on the outcomes, yet they contend that the consideration of procedures can be useful. Lawrence (1997) promotes the consideration of both but stresses that the degree of integration of sustainability in the consideration of the means and ends will depend on the context.

2.3.2 Principles of Sustainability in Environmental Assessment

There has been some effort to integrate the concept of sustainability into EA. Some of this literature expands on key elements and principles from sustainability discourse, some of which has been integrated and linked to EA theory and practice. For instance, some promote the use of the traditional three-pillar model of sustainability in EA application; focusing on ecological, social and economic imperatives (e.g. Guijt et al., 2001; Lawrence, 1997). Other studies offer more insight and are less divisive in terms of the categorization of impacts, thereby displaying the significant complexity in the interactions between the three pillars. Following the Canadian Environmental Assessment Research Council's Roundtable on EA and sustainability in 1987, it was noted that a new generation of EA was needed; one which highlighted the interdependencies between economic, social and environmental imperatives in order to incorporate sustainability measures in EA (Jacobs and Sadler, 1988).

The Bellagio Principles for Assessment developed by the International Institute for Sustainable Development (Hardi and Zdan, 1997) provide a set of guiding principles used in assessments of progress towards sustainability. The report outlines principles which can be used in the evaluation of EA as a tool towards sustainability. Gibson et al. (2005) has also introduced requirements for sustainability-based decision-making in EA

processes, which can serve as a template that can be tailored to reflect a specific context. Gibson's et al. (2005) findings are based on sustainability-centred literature and experiences, and are comprehensive; yet provide a template from which criteria can be tailored to reflect a specific context.

The subsequent topics relate to EA and sustainability and follow the works of Gibson et al. (2005) together with the Bellagio Principles for Assessment (Hardi and Zdan, 1997). There are important points that can be inferred from the examination of these two frameworks. Both insist on a holistic approach, in which systems ideas are adapted into EA practice. A holistic approach calls for the application of a systems perspective in the understanding of impacts and effects as a result of projects and PPP. This requires understanding social, ecological and economic systems as subsystems within a larger functioning complex system and recognizing that interactions occur between the various parts within and between the subsystems. Incorporating complex systems understandings into the EA process ensures that the integrity of social-ecological systems is maintained; that is the maintenance of irreplaceable life support functions required for human wellbeing over time, in light of anticipated and unanticipated changes (Gibson et al., 2005). This approach goes in contrast to historical EA approaches in which environmental, social, economic and technical considerations were considered in separate analyses with little consideration for the interactions that occur between the differing subsystems. Beanlands and Duinker (1984) concluded that such an approach resulted in the neglect of ecological-system impacts and consequently poor EA. A holistic perspective also promotes the consideration of both positive and negative impacts of development, which differ from traditional EA processes that focus primarily on

attention to adverse impacts. This sustainability-based approach draws attention to enhancing significant positive project impacts (Noble, 2006). The holistic approach requires one to consider the range of impacts across space, from the local to global level, and across time, in accordance with human and ecological measures.

A sustainable approach is best served through an EA regime that exhibits and promotes a holistic approach in what is assessed, how the assessment is carried out and managed, as well as how the EA process integrates with other environmental and social management plans across various scales. These considerations need to be assessed in the prediction of possible system implications as a result of new activities and their implications together with pre-existing projects. Consequently, the assessment of cumulative effects is an important element to adopt in sustainability-aimed EA process. Cumulative effects assessment illustrates holistic-type assessment (Gibson et al., 2005).

Similarly, linking environmental assessment with other policy implications also promotes a holistic approach. This is particularly evident when linking the EA process with land use planning. Land use planning is a particular means of ascribing significant values of the community onto the landscape, in terms of future desires and priorities. The integration of such processes allows for a more comprehensive assessment approach that is more holistic in its approach and less divisive than considering projects in isolation.

Moreover, both frameworks suggest intergenerational as well as intragenerational equity, two principles that have their roots in the WCED report which coined the term sustainable development (e.g. George, 1999; WCED, 1987).

Furthermore, open participation and democratic governance are promoted in both frameworks. These principles echo the need for local communities to actively participate

in decision making that will ultimately affect them, to have access to information, and to involve open participation of all stakeholders, including the underrepresented. Public participation has the potential to influence governments to make choices based on community-derived sustainability aims. Along with this, openness, transparency and access to information are important tenets. This allows for the communication of values and preferences. Public participation also allows for social learning, both in institutional and public capacities, whereby it allows critical reflection of embedded values and assumptions in the EA process and allows for innovation and engagement (Sinclair and Diduck, 2001).

Efficiency is another tenet in both frameworks, although not as explicitly stated as in the Bellagio Principles, but inferences can be made to indicate its presence. Efficiency in the EA process is needed in order to move towards a sustainability-based approach. Improving efficiency measures in the EA process does not simply refer to a more streamlined process but rather maximizes the process in that it attains its mandate at best (Gibson et al., 2005). Gibson et al. (2005) state that rapid authoritative decision-making can result in quick approvals, often sacrificing long-term benefits in preference for short-term benefits. Often decisions made as a consequence of this fast process exclude context-specific particularities (Gibson et al., 2005). Consequently, efficiency measures need to address the level of public participation, the quality and quantity of information requirements, the length of the assessment and the monitoring and enforcement plans, as well as, the extent of the role and responsibilities of all involved in the EA process; from the proponents, public, government officials and reviewers and technological experts (Wood, 2003).

In addition, the precautionary principle and adaptive capacity are also stated as important features in sustainability-driven EA processes. A sustainability-driven EA process is more humble in that it recognizes uncertainty and incorporates that into decision-making, so that major decisions are better informed and respectful of limitations that may be present.

Adaptive capacity is an important feature, suggested by both works, as it allows for flexibility in the EA process to adapt to new information and adjust accordingly. This requires monitoring and the introduction of indicators, as suggested in the Bellagio Principles. Such indicators will allow for tracking progress toward or away from a desired vision of sustainability. Gibson et al. (2005) conclude that two key questions need to be considered in monitoring; 1) are assessment commitments and approval conditions met in implementation? and 2) how do the actual effects compare with what was predicted? These key questions can promote collective learning and feedback in the decision-making process, in turn instilling an adaptive capacity; being able to respond to changes and surprises at both the project and the process-level (Gibson et al., 2005). Holling (1978) contends similar principles for EA, as he claims they provide a basis from which precautionary and adaptive approaches can be carried out, allowing for the recognition of uncertainties associated with development through the application of a systems perspective which includes building system resilience. However, there are challenges associated with monitoring that inhibit its collective contribution to the effectiveness of an EA system, that is that approval statements are often vague and there is little enforceability or penalties of non-compliance with approvals and licenses, as well as the costs associated with initializing a monitoring system (Gibson et al., 2005).

2.3.2.1 Principles of Sustainability in Northern Environmental Assessment

A review of literature pertaining to historic and potential future developments in the North, in conjunction with a study of northern EA practices and processes, identifies key features that are more significant in northern EA processes. These features coincide with EA-sustainability principles and can be more pronounced and hold greater importance in northern regions.

Table 2.4 provides the evaluative framework used for this study. The Table also highlights the importance of each of the sustainability principles to the northern context, in respect of past EA processes and northern circumstances. The remainder of the section discusses each principle further.

Mulvihill et al. (2001) provide a thorough account of northern realities that need to be considered in environmental planning and management decision making. These features can be extended in application to EA. The research highlights the importance attributed to historical context of the north in terms of the characteristics of northern ecosystems, the changes to the socio-economic fabric over time, the past and current role of First Nations and internal as well as external influences on the socio-economic and political systems. Everitt et al. (1988) contend further that effective EA in the North needs to deal with northern issues including social equity, control and decision making powers over land and resources, and over the economic future of the region.

Table 2.4 Sustainability-focused Evaluative Framework for Northern Environmental Assessment Processes

Sustainability Principles/Elements	Procedural (means)	Evaluative Considerations Substantive (ends)	Particulars and Significance to the North
<i>Accountability</i>	<ul style="list-style-type: none"> - assessment process entrenched in law (Gibson et al., 2005) - consistent - transparent through all stages of the process (Sadler, 1996) 	<ul style="list-style-type: none"> - maintains and secures accountability and assurance of the parties involved and the process as a whole (Wood, 2003) 	<ul style="list-style-type: none"> - issues in the past of accountability in regards to federal government's role and the EA process, (e.g. government as both assessors and decision makers of projects, government as proponents, process often secretive and non-transparent) - a neutral process can effectively ensure that northern concerns are considered and recognized (Everitt et al., 1988)
<i>Holistic Approach</i>	<ul style="list-style-type: none"> - application of systems thinking and perspectives, whereby social, ecological and economic components are assessed interactively over space and time (Gibson et al., 2005; Hardi and Zdan, 1997) - consideration of both positive and negative effects (Gibson et al., 2005; Hardi and Zdan, 1997) - incorporation of cumulative effects, as well as global effects (space) (e.g. project lifespan) (Gibson et al., 2005) - Trade-off evaluation of benefits and implications, both long term and short term (time) (Gibson et al., 2005) - harmonizes and is integrated with other resource and environmental management tools (i.e. land use plans) (Gibson et al., 2005; Hardi and Zdan, 1997) 	<ul style="list-style-type: none"> - the maintenance and enhancement of key linkages and functions within the socio-ecological system; (quality of life, economic activity and natural environment) (Gibson et al., 2005) - move beyond minimizing effects to acceptable levels, broad-based objectives achieved - better understanding and acceptance of all potential implications from a project (social, env, and economic) over space and time - results in better environmental and future planning due to integrative approach with other tools 	<ul style="list-style-type: none"> - the consideration of potential effects to the socio-ecological systems of the north; in respect of the historical and current implications and recognizing the intricate linkages particular to northern environments between social, economic and ecological system components - considerate of the characteristics of northern socio-ecological systems, such as strong linkages between the socio-cultural components with the environment (e.g. northern lifestyles – non-monetary, traditional lifestyles and economics) (Mulvihill et al., 2001) - the consideration of 'real' benefits versus 'perceived' benefits (local benefits and gains versus southern-directed benefits and gains) (Mulvihill et al., 2001) - the failure of past federal EA processes at capturing impacts on small local communities (Dacks, 2004; Oppen et al., 1981); therefore capturing what is important at the local scale - inclusions and consideration for cumulative effects for which historically EAs done on project-by-project basis (Mulvihill and Baker, 2001)

<p><i>Public and First Nations Participation</i></p>	<ul style="list-style-type: none"> - participation of multiple stakeholders (Gibson et al., 2005) - open to all stakeholders - transparent participation and decision making process - the dissemination of and access to information (Hardi and Zdan, 1997) - early notification of projects and assessments 	<ul style="list-style-type: none"> - transparent process and secures public trust in the EA process and related decision-making as well as increases accountability of decision makers and assessors - dialogue of what is acceptable and what is not - a mode to express values and preferences that reflect sustainability aims of the area and articulates the level of significance of potential effects (Gibson et al., 2005) - decision-making process guided by the public participation process, resulting in decisions that reflect societal values and preferences - promotion of social learning (Sinclair and Diduck, 2001) 	<ul style="list-style-type: none"> - As affected individuals, of project impacts, Northerners should have the opportunity to participate in the process - the inclusion of First Nations as active stakeholders and decision makers have been outlined and stipulated under land claim agreements (Duerden, 1992) - the inclusion of First Nations values and opinions ensures that impacts to their lands, traditional lifestyles and communities are taken into account and that their socio-ecological systems are protected and/or enhanced - EA history indicates a lack of public participation opportunity for both public and First Nations in the north as well as lack of access to information and inadequate notification of projects and developments (e.g. Fenge and Rees, 1987; Bone, 2003) - a mode to capture and articulate Northern peoples' value system and preferences, this is particularly important given the lack of land use plans for northern regions (e.g. Staples, 1987) - beneficial to the absence of appropriate and meaningful social data for the north - Northern values, lifestyles and realities are different from Southern-based proponents and governments (Mulvihill et al., 2001)
<p><i>Local and Traditional Knowledge</i></p>	<ul style="list-style-type: none"> - inclusion and integration of local knowledge - fair and equal consideration given to local and TK (Gibson et al., 2005) - attempt to include and integrate TK given limitations in interpretations, collection and cataloguing 	<ul style="list-style-type: none"> - cultural bridging between two cultural groups and worldviews - more cooperative - initiate interest to address the associated limitations associated with TK - promote social learning (Sinclair and Diduck, 2001) 	<ul style="list-style-type: none"> - of great significance to the First Nations - exemplifies the shared decision making power of the First Nations with other levels of government (Reed, 1990) - incorporation is stipulated in land claim agreements - Northerners may possess significant knowledge relevant to the land, given strong linkage with environment - can provide valuable knowledge, beneficial to the northern assessment process, in which there may be a lack of data and data gaps (Mulvihill et al., 2001)

<p><i>Efficiency</i></p>	<ul style="list-style-type: none"> - streamlined process that does not sacrifice adequate assessment of impacts, but yields the maximum benefits (Gibson et al., 2005) - clear guidelines and timelines - provide timelines for all parties involved - stipulates responsibilities and roles of each party in the process and stipulates requirements and procedures for all parties (Hardi and Zdan, 1997) - avoids duplication of efforts - well coordinated between parties - well integrated with other environmental management regimes (ex. authority granting agencies) (Gibson et al., 2005) - flexibility options to ensure thorough assessments (Gibson et al., 2005) 	<ul style="list-style-type: none"> - instils cooperation between parties involved, between the assessors and proponents, the public, and between institutions / government bodies (less stove piping) (Lawrence, 1997) - more effective communication between the assessors, the proponents, the public, the government agencies, etc. (e.g. Mitchell, 2005; Armitage, 2005a) - manages to maintain and maximizes the mandate of EA, from a sustainability perspective (Gibson et al., 2005) 	<ul style="list-style-type: none"> - issues of inefficiency in the past with northern EA processes, in particular with timeframes leaving proponents uncertain (Everitt et al., 1988) - historically, assessments were rushed in all phases of the EA process resulting in inadequate assessments (Mulvihill and Baker, 2001) - timelines important in northern development given the short summer season (Everitt et al., 1988) - a flexible process that is able to focus attention and efforts on significant economic or environmental impacts, also in regards to timeframes for public input - built-in streamlining processes for small projects, or industries - therefore there needs to be a balance that meets the needs of all parties involved but does not sacrifice the quality of EA in the north and the assessment of all potential impacts
<p><i>Uncertainty and Precaution</i></p>	<ul style="list-style-type: none"> - consider uncertainty in terms of unknown technology, implications to system components' behaviour, interactions and feedback as a result of impacts (Gibson et al., 2005; Hardi and Zdan, 1997) - considerate and be attentive to drivers of change - built in adaptive capacity to address uncertainty (Gibson et al., 2005; Hardi and Zdan, 1997) 	<ul style="list-style-type: none"> - precaution and ensuring needs of current and future generations (Gibson et al., 2005; Hardi and Zdan, 1997) - good planning and proactive decision making - attentive to surprise and better adept to adopt and react (Hardi and Zdan, 1997) - responding to limitations in the assessment process 	<ul style="list-style-type: none"> - uncertainty in the north, with a lack of baseline data and lack of understanding of northern socio-ecological system dynamics (in comparison to the south) - lack of site-specific data - a pristine environment therefore increasing the difficulty in making predictions - considerate of Northern ecological system characteristics - uncertainty is enhanced further with climate change implications in the north and the implications it poses on impact prediction as well as unknown implications of southern-based technologies in northern environments

<p><i>Monitoring and Adaptive Management</i></p>	<p>- monitoring: 1) are assessment commitments and approval conditions being met? 2) how actual effects measure against predicted effects? (Gibson et al., 2005) - adaptive monitoring applied to projects as well as the EA process (Gibson et al., 2005; Hardi and Zdan, 1997) - instill adaptive capacity that is flexible and open to modification to respond to changes and surprises, new information, etc. (Gibson et al., 2005; Hardi and Zdan, 1997)</p>	<p>- promote collective learning (Hardi and Zdan, 1997) - evaluation of the EA process through feedback mechanisms, thereby increasing efficiency and other matters that improve the process - able to adjust to changes and surprises therefore more flexible (Gibson et al., 2005; Hardi and Zdan, 1997)</p>	<p>- monitoring can be beneficial to the North to maintain and enhance northern socio-ecological system resilience (Chapin et al., 2004) - adaptive monitoring can be beneficial to northern EA regimes as there is capacity issue of northern institutions (in terms of time, money, etc) (Berkes et al., 2005) - beneficial for data collection in the north - should be built in and be continuous for compliance and the monitoring of effects (particularly given the increase in uncertainty)</p>
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Accountability

As a result of past EA regimes that have been secretive and non-transparent, Northern EA processes should be carried out in such a way that parties are responsible and accountable for their actions and decisions. Moreover, issues and concerns in the past surfaced in regard to the federal government's role in the EA process as both the assessors and decision makers of projects. This diluted and decreased the level of trust and confidence in the EA system as well as in development-related decisions.

Historical implications of an unaccountable and secretive EA system have highlighted and emphasized the need for a neutral EA process, which can ensure and secure the inclusion and recognition of northern concerns in the assessment process (Everitt et al., 1988). Gibson et al. (2005) also state that the administrative capacity of an EA regime should be impartial and operate at arms length from decision makers, in order to ensure conformity to procedures and practices by all parties involved and guarantee consistent application.

Holistic Approach

EA in the north should be carried out from a holistic approach in which the process is comprehensive in its scope and application. EA regimes should be applicable to all projects and activities which may affect the socio-economic and ecological systems and its components, in such a way that it manages to capture all impact types, including both adverse and favourable impacts as well as economic, social and cultural impacts alongside environmental impacts (Gibson et al., 2005). EA should be carried out in such a way that essential ecological and socio-economic processes are maintained and/or

enhanced (Gibson et al., 2005), such as maintaining wildlife populations and health. EA should also seek out benefits to the socio-economic systems of the north including the consideration of tradeoffs, such as benefit transfer agreements, which can promote self-sufficiency and business opportunities for northern communities (Everitt et al., 1988).

Northern social and environmental systems are vulnerable and fragile, whereby relatively benign human activity can have disruptive wide-spread ramifications on ecosystems; implicating changes through all the components of the socio-ecological system (e.g. Chapin et al., 2004). Consequently it is important to understand the characteristics of socio-ecological systems in northern regions.

Northern species, such as mosses, lichens and algae are quite sensitive to changes and environmental disturbances (Chapin et al., 2004). Northern environments also exhibit low species diversity, which can encourage changes to all components of the socio-ecological system should there be changes in species population (Chapin et al., 2004). Moreover, Northern environments, in general, exhibit slow recovery time from catastrophe in terms of succession and replacement, which contrasts with Southern environments which can be rehabilitated more quickly (Mulvihill et al., 2001).

In order to best ensure the wellbeing of Northern socio-ecological systems and retain essential ecological services, system resilience should be maintained and/or enhanced (e.g. Chapin et al., 2004; Berkes et al., 2005). Resilience refers to the measure of a system's ability to absorb changes and retain essential relationships that support and ensure system viability. Chapin et al. (2004) endorse the promotion of building system resilience, as opposed to focusing on specific components of the system, such as specific species. This view is also echoed by Berkes et al. (2005) but in a socio-institutional

context, which is also important to consider within a Northern context. In order to build socio-ecological systems resilience, coping, adaptations and reorganization are needed (Chapin et al., 2004).

Social aspects of the system need to be fully integrated and considered in relation to environmental aspects but also on their own grounds. In many cases in EA, social aspects are not fully integrated (Smith, 1993). And in northern environments, where major projects cause both social and ecological changes, it is imperative that holistic planning and assessment take place. Interdisciplinarity in EA assessment should be promoted with a holistic approach. In this case, varying government agencies should be collaborating and communicating information as opposed to the stove-piping behaviour common with government agencies (Zussman and Jabes, 1989).

Within the spectrum of systems thinking it is imperative to consider the historical influences on the system and its functions as well as those that will influence the structures and processes of the system in the future. An examination of the history of resource extraction in the North quickly identifies and highlights a persistent north-south dominating relationship, whereby northern developments emanate from southern markets and influence and reflect southern interests. Conversely, the impacts are acutely experienced at the local level, impacting northern environments and communities, yet benefiting the southern population (Mulvihill et al., 2001). Furthermore, boom-bust cyclical patterns persist in the history of the system; largely influenced by world markets and demands (Chapin et al., 2004). The north has also experienced, and will continue to experience, the presence of megaprojects across the landscape, from which the impacts more often than not do not correlate well with sustainability. The historical study of the

system also highlights the inadequate and overlooked assessment of ecological, economic and social impacts of resource extraction and other major developments (Chapin et al., 2004), which have left permanent legacies on the landscape. Understanding the strong drivers of change in the North will permit good planning and proactive responses to surprises (Chapin et al., 2004).

Public and First Nation Participation

Public participation in the North is imperative, as one considers the history of the North. Historically, Northerners have been left out of the decision-making process, despite being directly impacted by Southern-derived development projects, often benefiting people elsewhere through meeting urban-based energy and mineral demands. Historically, decisions were not made in a transparent manner; likewise the justifications and rationales behind decisions were not made explicit to the public (Gibson et al., 2005). Consequently, the public should be involved in deciding on appropriate development. Public participation allows for better informed decision making; reflective of the values and priorities of local communities, as the community possesses and exhibits a better understanding of the context (Gibson et al., 2005). Gibson et al. (2005) contend that values should shape decision making as opposed to technical analyses or expert rulings. The integration of values and priorities of Northern people in the EA process is of particular importance given that there are differing values and opinions about how the land and its resources should be used, (among the various groups in the North) (e.g. Staples, 1987).

Over the last few years strides have been made to increase and secure First Nation participation and involvement in land-use decision-making processes, as the result of land claim and self-government agreements and co-management processes. First Nations participation allows for values, opinions and information (e.g. TK) to be included in resource and environmental management processes. First Nation participation allows for the traditional lifestyles and relationship with the lands and resources to be protected, maintained and enhanced. The participation of First Nations in such processes is a key step to working towards sustainability, particularly within a Northern context (Duerden 1992).

Local and Traditional Knowledge

Traditional knowledge (TK), Berkes (1995, 2002) contends, can provide valuable insight into the management of Northern natural resources, leading to more sustainable strategies. Similarly, the incorporation of TK into EA processes typifies participation and shared decision-making power of First Nations (Reed, 1990). Its inclusion also stimulates increased communication and understanding (Slocombe et al., 2005) as well as social learning (Sinclair and Diduck, 2001). The incorporation of TK in the EA process itself also exemplifies the application of a holistic approach (Reed, 1990). It also can contribute to the knowledge gaps associated with Northern databases (Mulvihill et al., 2001) from both historical and current perspectives.

Despite, the benefits that TK can yield, there are various challenges to the full incorporation and adoption of TK into the EA process. Mulvihill et al. (2001) argue that TK has yet to be properly integrated into the Northern EA process in a sound manner.

The main challenge stems from the difference in both value and knowledge systems. Cruickshank (1981) summarizes other inhibiting factors including cultural 'mis' understandings between Western and scientific ideologies, and challenges related to the translation of TK and differing worldviews. Consequently, there is insufficient recognition and understanding of how to interpret and synthesize TK and incorporate it into an EA process that is largely based on the principles of Western science, coupled with a tendency to favour conventional science (Gibson et al., 2005).

Efficiency

Historically, there have been concerns about inefficiencies in the EA process in the North. Most of the concerns have been in regard to lengthy reviews and assessments, and duplication. Some argue this has deterred economic development in the North. Also, northern EA processes have resulted in poor assessments, with voluminous EA reports that were poor in analytical quality, and in many cases we have seen unanticipated environmental impacts as a result of this (Mulvihill and Baker, 2001; Rees, 1988;). Consequently, improving efficiency measures in the Northern EA process is important in order to move the process towards meeting sustainability measures.

Uncertainty and Precaution

The lack of baseline data and uncertainty associated with frontier areas can pose challenges to the EA process. Predicting the nature and function of northern systems can be difficult as there is a lack of knowledge about Northern system tendencies and functions (Mulvihill and Baker, 2001) as well as inadequate databases (Smith, 1993). The

scarcity in data is related to the cost associated with conducting research in the north and collating such data, in conjunction with a short research season (Mulvilhill et al., 2001). In addition, this is further amplified with uncertainties associated with technologies. The suitability of 'southern' technologies in the north is often questionable (Smith, 1993), particularly given the particularities of the northern environment such as permafrost. The uncertain impacts on northern environments are further amplified with climate change and the ramifications its changes will bring for the socio-ecological systems and existing and future development projects.

Monitoring and Adaptive Management

Monitoring is a fundamental element of EA. Monitoring ensures that mitigation measures are carried out as prescribed in authoritative and regulatory documents and ensures the compliance of the proponent in addressing effects of concern identified in the EA process. It also allows for the evaluation of mitigation measures and whether or not such measures are/or have been successful at minimizing, or eliminating effects. Likewise, monitoring attests the validity and effectiveness of EA predictions: how do the actual effects of the project compare with those predicted in the EA process? And are the recommended mitigation measures appropriate and effective (Gibson et al., 2005)?

Monitoring can also contribute to broad-based effects monitoring, in the case of cumulative effects and, as such, monitoring of cumulative effects can contribute information for northern settings that may be lacking such data (e.g. Stevenson, 1996, considers the contribution of TK to monitoring initiatives).

Moreover, monitoring can also assist in evaluating the substantive aims of EA systems at meeting and addressing elements of sustainability through the EA process (Hardi and Zdan, 1997). Accordingly, monitoring also has the potential to highlight the inadequacies of EA systems (Noble, 2000).

Adaptive management, as an embedded management tool alongside monitoring, enables changes to be made in response to changing circumstances in such a way that best practice measures can be sought, adopted, and applied (Jones and Greig, 1985; Noble, 2000). Adaptive management involves the identification of key variables and the continued monitoring of those variables in relation to threshold levels that would instigate changes to socio-ecological system functions (Holling, 1978). Adaptive management also can become a management tool to deal with and address uncertainties and surprises that may arise, such as unforeseen climate change implications. Adaptive management can be applied and incorporated at the project level as well as at the EA process level. In this way adaptive management and monitoring can promote effective planning.

Adaptive management can be a beneficial feature in a northern environmental and resource management context. The uncertainties associated with northern environments, which include knowledge gaps and to some extent the implications of climate change and southern-based technologies, are challenges which adaptive management can address and assist within the maintenance of the socio-ecological system's resilience. Moreover, adaptive management correlates well with indigenous cultural practices and teachings, which include altering lifestyle patterns through flexibility in order to cope with system changes (Chapin et al., 2004). Given the institutional particularities of the north, with different levels of governments and co-management boards working together, adaptive

management has the potential to feed back into the system to improve efficiencies and bring about learning that can move beyond the EA process but also address other resource and environmental related policies and processes (e.g. Berkes et al., 2005).

2.3.2.2 Sustainability Principles and Other Northern EA Regimes

Northern EA regimes present interesting features that correlate well with sustainability principles and that are suited to the northern context. These features include a neutrally-based process, the consideration of socio-cultural implications as a result of environmental impacts, the inclusion of TK and First Nation participation in the process as well as other features. The following will highlight such features in two northern regimes.

The Inuvialuit Final Agreement

The Inuvialuit Final Agreement (IFA) was signed between the federal government and the Inuvialuit (Inuit of the Western Arctic) in 1984. The agreement covers approximately 1,000,000 km²; an area referred to as the Inuvialuit Settlement Region (ISR), which encompasses Yukon's North Slope (Green and Binder, 1995). This agreement was the first modern treaty to be established in the territories, and one of the earliest to dictate a lands claims-based EA process, which also acknowledges the significant inclusion of TK in the process.

The IFA outlines the creation of two EA co-management entities, the Environmental Impact Screening Committee (EISC) and the Environmental Impact Review Board (EIRB), each made up of a total of 7 representatives from the federal,

Yukon, and NWT governments as well as from Inuvialuit communities (Green and Binder, 1995). The EISC assesses all development proposals and refers them if need be to the EIRB. The EIRB then establishes a review panel, holds public meetings and obtains expert advice (Bone, 1996). The EIRB is responsible for accepting, rejecting and/or setting up recommendations for projects. The decisions made by the EIRB are then forwarded to the government authority responsible for decision-making concerning the project (Bone, 1996; Green and Binder, 1995). Section 1 of the Agreement (IFA 1984) outlines the mandate of the act, which is,

- (a) to preserve Inuvialuit cultural identity and values within a changing northern society
- (b) to enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society and lastly
- (c) to protect and preserve the arctic wildlife, environment and biological productivity.

Bone (1995, p. 175) explains that, “unlike the Ottawa-based agency, these two co-managed boards have placed much more emphasis on possible negative impacts of proposed industrial projects on the environment and wildlife...this new emphasis reflects the Inuvialuit culture and the continuing importance placed on wildlife harvesting”.

Consequently the IFA ensures First Nations participation on its boards and ensures that First Nations’ values, particularly those related to wildlife harvesting and traditional livelihoods are given considerable weight in regards to proposed developments in the ISR. Likewise, the community boards assist in facilitating the incorporation of local perspectives into decision making processes, along with local and TK (Berkes et al., 2005).

Moreover, the EISC and EIRB increase the level of accountability and assurance in the EA process, as neutral bodies in the process. The decisions and recommendations made by the EISC are binding, adding a greater level of accountability to the process. In this way, the decisions and recommendations proposed by the committee are complied with by the regulatory agencies. The recommendations proposed by the EIRB for reviews are presented to the responsible government agencies, which must provide written explanations if they do not accept the EIRB's recommendations (Terriplan Consultants Ltd. and IER Planning, Research and Management Services, 2001).

The IFA's definition of "environmental effects" includes social aspects (Terriplan Consultants Ltd. and IER Planning, Research and Management Services, 2001). This stipulation goes beyond CEEA's narrow definition of environmental effects. There are also provisions for the consideration and incorporation of wildlife compensation to Inuvialuit hunters and trappers for lost revenues and livelihoods and the restoration of wildlife and habitat (Terriplan Consultants Ltd. and IER Planning, Research and Management Services, 2001).

As is the case in other northern regions, the Inuvialuit expressed dissatisfaction with the earlier EA processes carried out in their region by the federal government (Green and Binder, 1995). The consultative process, prior to the IFA, was deemed to be inappropriate. And as a result the IFA secures more control over local development activities in the territory, including attributing a greater focus to impacts on wildlife and ensuing social and cultural ramifications (Green and Binder, 1995). The role of public participation under the IFA EA processes is limited in comparison to other northern EA regimes. The public involvement is limited to invitations from EISC to participate and

express views at the EISC meetings. Groups, such as Inuvialuit organizations, adjacent land claimants, proponents and affected government agencies can be invited to make presentations at meetings (Everitt et al., 1988). There are greater opportunities for public participation at the review level, in which case anyone interested can comment and there is also a greater level of transparency (Green and Binder, 1995). The IFA is currently developing an online registry system (as of June 2008).

CEAA applies in the Inuvialuit Settlement Region, however the IFA processes are used to carry out the responsibilities and mandates under CEAA (Terriplan Consultants Ltd. and IER Planning, Research and Management Services, 2001). A Memorandum of Understanding was signed between the federal government and the IERB in the case of an EIRB assessment being substituted for a CEAA panel review (Terriplan Consultants Ltd. and IER Planning, Research and Management Services, 2001). Concerns of efficiency with other neighbouring processes were expressed by Green and Binder (1995).

Berkes et al. (2005) contend that the IFA exhibits structures and procedures for vertical and horizontal feedback loops to take shape. Such feedback loops can be essential in northern regimes and institutions, which allow for improvements to be made. The decentralized structure of the IFA and its subsequent EA process is thus able to be more flexible and adjust to changes and surprises accordingly, and thus builds resilience. The features and institutional characteristics of IFA can be beneficial to other northern regimes and EA processes, including YESAA.

The IFA and its associated processes are one of Northern Canada's earliest attempts at initiating significant First Nations involvement in decision-making processes as well as

integrating differing value and knowledge systems into the EA process. It is also one of the earliest co-management models in Northern environmental and resource management, whereby the Inuvialuit are given control over development on their land, in such a way as to protect wildlife and their traditional way of life (Reed, 1990). Accordingly, the IFA, due to its earlier beginnings, presents valuable insight and lessons that extend to other northern and land claims-based EA processes.

The Mackenzie Valley Resource Management Act

The MVRMA of 1998 was established under the provisions of the Gwich'in and Sahtu Dene and Métis comprehensive land claims agreements, and is applicable to all lands within the Mackenzie Valley, excluding the Inuvialuit Settlement Region and Wood Buffalo National Park. The MVRMA as in the case of IFA has been adopted through a land claims process and depicts innovative features in its EA process and is suited to the characteristics of its northern context.

The MVRMA stipulates the integration of different knowledge types (e.g. TK), meaningful public consultation that is reflective of First Nations' cultural inclination for consensus and the adherence to land use plans in its EA process (Lindsay and Smith, 2001).

The MVRMA incorporates requirements from the claims-based agreements in its design, including the establishment of co-management boards. These boards include regional land use planning and land and water regulating boards for settlement areas as well as the Mackenzie Valley Environmental Review Board, which is responsible for implementing EA procedures for the entire Mackenzie Valley (Lindsay and Smith, 2001).

There are six co-management boards in the Mackenzie Valley. Each is made up of representative members of federal and territorial government and First Nation groups (Armitage, 2005a). These co-management boards are regionally distributed with defined roles and responsibilities, and possess the capacity for autonomous decision-making.

The assessment process stipulated under the MVRMA, which is carried out by the Mackenzie Valley Environmental Review Board ensures a level of accountability in the assessment process; ensuring the needs and concerns of the people of the Mackenzie Valley are protected and maintained.

The scope of assessments is not limited to physical environmental impacts, as the act defines environmental impact to include “any effect on the social and cultural environment or on heritage resources” (MVRMA, 1998, c25 s11).

The EA process in the Mackenzie Valley is a decentralized process that endorses collaboration between various stakeholders and groups (Armitage, 2005a). The decentralization of the process has increased the rate of public participation and input as a result of bringing the process closer to the community level, given the high degree of isolation and high travel costs experienced in the region (Armitage, 2005a).

The MVRMA also stipulates public participation as mandatory at all levels of assessment (Mackenzie Valley Environmental Impact Review Working Project, 1998). Through the MVRMA, as in the case of other northern EA regimes, the rights of First Nations are protected in development-related decision making. Likewise, the act provides for the integration of TK in its framework of assessment. The Mackenzie Valley Environmental Impact Review Board has developed operating policies for integrating TK with EA.

In terms of efficiency, the MVRMA stipulates provisions for coordinating and co-operating with other EA legislations and other jurisdictions (Mackenzie Valley Environmental Impact Review Working Project, 1998). The process also incorporates an adaptive capacity, which is reinforced with rules and procedures that can be altered to reflect and respond to changing institutional and organizational circumstances (Armitage, 2005a). Armitage (2005a) notes attempts have been made to improve the system, through collaboration efforts and the consideration of lessons from the past.

Of particular significance to the MVRMA and its EA process (Part 6 of the Act), is the federal government's responsibility for monitoring and auditing cumulative environmental effects at a regional level. The audits are to be carried out every 5 years, in which case data pertaining to known and potential cumulative effects on the landscape are collected (Lindsay and Smith, 2001). The audit is conducted from a regional perspective and goes beyond project levels (Lindsay and Smith, 2001). This provision differs from other EA processes, in that the federal government is mandated by the legislation to carry out such an audit. In other jurisdictions, such a responsibility is often outlined in policy directives and consequently is not frequently carried out, most often as the result of budget constraints (Lindsay and Smith, 2001). Consequently, the cumulative effects monitoring program in the Mackenzie Valley incorporates both scientific and TK, which is used in regional cumulative effects assessment (Armitage, 2005a).

Moreover, the EA process is uniquely blended within the regional land use planning process, whereby developments assessed under MVRMA only approved subject to the land use plan, which are approved in successive order by Gwich'in and Sahtu First Nations, the Territorial Minister and the Federal Minister. The link and integration

between land use plans and the EA process is an effective means of addressing cumulative effects and eliminating sources of conflict (Lindsay and Smith, 2001). In this way, as Lindsay and Smith (2001, p. 25) summarize, “the environmental sensitivity and the sustainability of the land will drive the development paradigm, not vice-versa.”

Yet, the EA process under the MVRMA also depicts challenges in its application as has been encountered with other northern EA processes. For example, groups and co-management boards, including RRC, face capacity issues. Such issues of capacity revolve around the availability of staff and resources to actively participate and engage in assessment processes (Armitage, 2005a). There have been concerns with the timelines, which can be short and thus jeopardize the opportunity to supply and submit adequate input (Armitage, 2005a).

Also, the MVRMA EA process has faced challenges in regard to levels of public participation and the submission of information, as the system is based on written documents. A dependence on oral traditions does not resonate well with such a format, and concerns have been articulated (Armitage, 2005a). Likewise, Armitage (2005a) documents a continued reliance and focus on a procedural perspective, in which the evaluations of socio-economic tradeoffs are not effectively initialized yet. Consequently, the ability of the process to be carried out from a perspective that fosters sustainability is limited.

Despite such challenges, the MVRMA illustrates various collaborative as well as innovative features of a Northern EA regime which parallel principles of sustainability in EA process. As Armitage (2005a, p. 244) contends, the creation and design of the MVRMA was the result of,

creating an integrated and collaborative framework to foster the conservation, development, and utilization of land and water resources; to protect the environment from significant adverse impacts; and to ensure the social, cultural, and economic well-being of residents and communities in the Mackenzie Valley.

Thus, the MVRMA provides valuable insights into significant features and processes that can be applied to other Northern EA systems.

Land claim agreements have prompted the development of 'northern' EA processes, which possess unique and innovative features that are reflective of the environmental, socio-economic, and cultural circumstances of the regions (e.g. Armitage, 2005a; Slocombe et al., 2005). Such features include the increased role of First Nations as active decision makers and participants in the process as well as the inclusion of significant cultural aspects such as traditional knowledge as well as the recognition of important community values and concerns which are more integrally connected and linked to the natural environment.

2.4 Chapter Summary

This chapter has provided a review of literature pertinent to EA, focusing on its history, application in Canada and the north, and its capability to address and meet sustainability aims. EA has the potential to be an effective tool for achieving sustainability, particularly given the general evolution of the process over the course of three decades. The process has become more than simply a process for mitigating adverse environmental effects but can be a valid forum from which the public can engage in development-related decision making. It also provides a basis from which it can integrate with other environmental planning processes and promote better decision making to take place.

This chapter also examined the sustainability literature in terms of resonating themes. These themes were further partitioned and highlighted as key features of sustainability within a northern context and with the application of EA. The consideration of the northern socio-ecological system and related literature highlights important sustainability features in the North, including the recognition of uncertainty, the incorporation and consideration of northern values, such as TK and the active participation and engagement of First Nations peoples as active stakeholders in the process. The chapter's literature review establishes the design and rationale behind the framework used for the purposes of this research project. The succeeding chapter discusses the methodology employed in this research project in order to examine and attest the effectiveness of EA at meeting sustainability aims within a northern context.

3 RESEARCH METHODOLOGY

This chapter provides a detailed account of how the research for this project was carried out in order to address and evaluate sustainability considerations in the Yukon's past and current environmental assessment regimes. To achieve the purposes of this research project, an evaluative framework was developed which outlines evaluative components that can be used to evaluate and consider EA regimes, particularly those in Canada's northern regions. A case study approach was applied by the researcher to test the framework and formulate conclusions and suggestions consideration and adoption of sustainability principles in northern EA regimes. The Yukon served as the case study as past and current EA assessment regimes were considered along with components of sustainability.

This chapter describes the methodology employed by the researcher in order to carry out and address the objectives of the research project. The chapter then describes the application to the Yukon as the case study used for the purposes of this project. Subsequently, the development of the evaluative framework is described. Lastly, the chapter details the means employed for the collection of data and its analysis.

3.1 *Methodology*

The research project seeks to consider the incorporation and adoption of principles of sustainability in EA, and particularly principles suited to northern contexts and EA regimes. Promoting sustainability in the North is important as northern economies and societies include unique socio-cultural, ecological and institutional processes and structures. EA can be a tool to achieve and promote sustainability.

The research is qualitative and applies a case study approach in order to evaluate the success of the Yukon EA process at adopting principles of sustainability as well as to highlight other necessary and significant features for sustainability-aimed EA processes in the north.

This research project was undertaken in three phases. The first phase involved the development of the evaluative framework through a review of pertinent literature. The evaluative framework highlights sustainability principles that can be and should be adopted into EA as well as the particulars and significance of such principles to the northern context. The framework outlines both procedural and substantive considerations when evaluating an EA regime or process.

In the second phase, the Yukon EA regime served as the case study of this research study. Data was collected through 21 semi-structured interviews in conjunction with subsequent reviews of literature and EA-related documentation, pertinent to the Yukon's past and present EA regimes. In the last phase, the data collected was analyzed in relation to the framework developed in the first phase and findings were extended to other northern EA regimes.

The application of a case study approach was deemed appropriate, as a single case study design allows in-depth analysis, in this case using the sustainability-focused framework, and allows one to generalize results based on detailed understanding. Likewise it will show the significance of EA-sustainability measures required in EA regimes of the north. It also permits a longitudinal study of the case at different points in time, allowing one to consider how conditions have changed over time, which is very much compatible with the purposes of this project. Mulvilhill et al. (2001) promote the

study of history in order to address sustainability and promote appropriate development in northern regions.

3.2 Case study and Methods

A case study, in this case the Yukon's past and present EA regimes, was used for the purposes of this research. A case study approach allows one to "investigate[s] a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003, p. 13). Similarly, Yin (2003) contends that a case study approach allows the investigator to examine contemporary events; ones which he or she has little control over. Moreover, case study research considers answers to "how" and "why" questions, which are more explanatory in nature, dealing "with operational links needing to be traced over time, as opposed to the measurement of frequencies and incidences" (Yin, 2003, p.6). Patton (1990) contends further that qualitative research, documenting development over time, is more adept at capturing dynamics over time in comparison to quantitative methodology. Consequently, a case study approach correlates well with the intended purposes and objectives of this research project, which seeks to consider aspects of sustainability that, have or have not been incorporated into the Yukon EA regime over time.

Due to this study's interest in a range of perspectives including the historical, a case study design based on a single case study with embedded units of analysis was used for the purposes of this research. Such a case study method is more suitable as it allows one to cope with many variables of interest (Yin, 2003). Moreover, a single case study design with embedded units of analysis allows for an extensive analysis of the case, by fostering insights into the single detailed case and its context (Yin, 2003).

3.2.1 Yukon as a Case Study

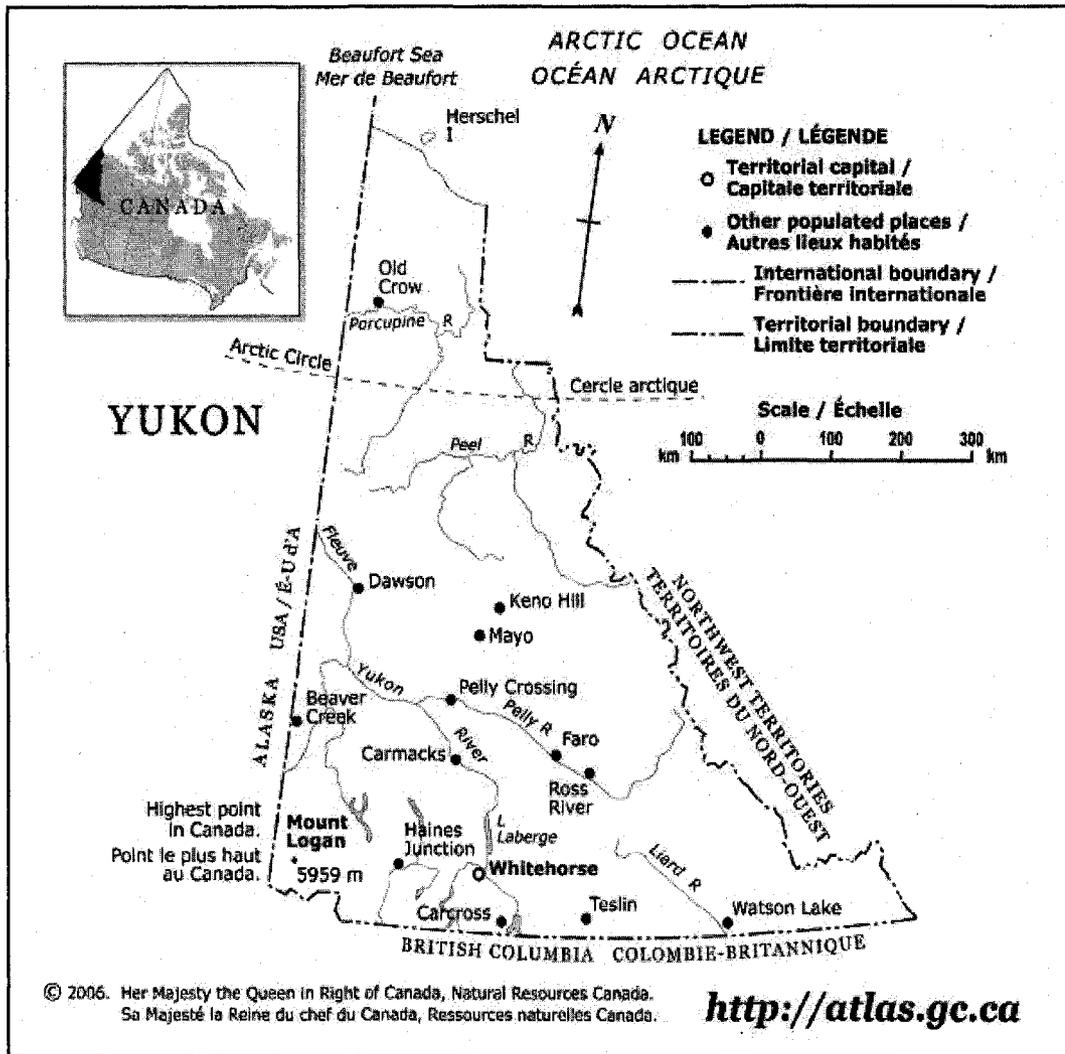
The Yukon was chosen as the case study for the purposes of this research because there have been numerous changes to the political and regulatory structure of the territory, paralleling other Northern regions of Canada, with regard to resource and environmental management (Figure 3.1). Such changes and adaptations present and reflect important features of Northern EA regimes, which can correlate well with sustainability initiatives. The units of analysis for this case study were based on the literature review, and reflect the 7 main components outlined in the sustainability-focused framework.

3.2.1.1 Study Area and Fieldwork

Fieldwork was carried out during the course of six weeks in May and June of 2007 in Whitehorse, the capital city of the Yukon Territory. As the capital of the territory, Whitehorse is home to three-quarters of the territory's population (Statistics Canada, 2006b) as well as serving as headquarters to most federal and territorial government departments and agencies in addition to environmental non-governmental organizations in the territory, several First Nations (Dakh Ka Tlingit, Kwanlin Dun and Ta'an Kwach'an), and major environmental consulting firms. Moreover, most libraries are located in Whitehorse, including Yukon Archives, Yukon College's library and the Department of Energy, Mines and Resources' library.

Consequently, conducting fieldwork in Whitehorse proved to be very appropriate as most interviewees and informants lived and worked in and around Whitehorse or made

Figure 3.1 Map of Yukon Territory



Source: Natural Resources Canada, 2006.

frequent visits into the capital. Also, most libraries and resource centres were located there.

3.3 Literature Review

In phase I, a review and synthesis of the literature was used to develop the sustainability-focused framework, as described in Chapter 2 (Section 2.3.2.1). This

framework was also used to guide inquiry and the collection of further data, along with the interview protocol used in phase II. The literature review focused on (1) EA literature, (2) sustainability literature, and (3) literature pertaining to the relationship between the two, as well as (4) Northern EA processes, and (5) the significance of sustainability within a Northern Canadian context. The majority of the literature was academic but also included government documents. The literature review assisted in developing themes that are pertinent to a sustainability-focused EA process. The literature review also highlighted sustainability and EA themes and related components that are more significant and unique to northern settings. The development of this framework guided the collection of data in the second phase as well as the analysis in the last phase.

3.3.1 The Sustainability-focused framework

To address the research questions in this study, a framework based on Gibson et al. (2005), was used as a template from which key components were deduced to be conducive to a northern Canadian context. Gibson et al. (2005) introduced findings concerning sustainability and EA processes based on sustainability-centred literature and experiences. The necessary components for sustainability-based EA proposed by Gibson et al. (2005) are comprehensive, yet provide a template from which criteria can be tailored to reflect a specific context, in this case Canada's northern region.

The evaluation of the degree of integration of sustainability initiatives in an EA process can be considered in terms of its means (instruments, procedures and processes) and ends (current and future needs, aspirations and principles) (Lawrence, 1997). In order to best address the degree to which sustainability is integrated in EA a sound

understanding of the context is needed; this understanding will identify key triggers within that context as well as areas of tension. These framework components permit the evaluation of both procedural and substantive characteristics of the Yukon EA process and its specific projects.

Gibson et al. (2005) outline considerations for ensuring sustainability-focused EA processes are context specific. These considerations include: physical, ecological, cultural, social and economic circumstances, which establish the fundamental socio-ecological system; inventory of assets as well as resource availability and prospective future expectations; deficiencies in the system whether institutional, ecological or socio-economic; stresses and resilience capacity; risks and opportunities; institutional capacity as well as public capacity and preferences; and lastly history. (Chapter 4 provides the contextual understanding of this case study).

A literature review focused on the Northern Canadian context identifies characteristics that are common and endemic to Northern Canadian regions, providing a basis for understanding the realities for northern environmental planning and management decision making including EA. The characteristics identified suggest some of the sustainability-based framework components are more significant and pronounced in northern contexts; playing a greater role than they would in southern contexts. The consideration of such characteristics is essential to the study of sustainability within Northern Canada and accordingly the application of EA processes.

The framework components used for this study include: (1) a holistic approach, (2) public and First Nation participation (3) local and traditional knowledge, (4)

accountability, (5) efficiency, (6) uncertainty and precaution, and (7) monitoring and adaptive capacity (See Table 2.4).

3.4 Data Collection

In order to evaluate the changes within the Yukon EA regime over time in relation to the sustainability-focused framework, several sources of data were sought. Review and collection of pertinent literature and documents related to past and present Yukon EA regimes were conducted. This was further enhanced with interviews with people familiar with the Yukon's EA process, who could provide a current account of the new legislation and regime in place. Key sources included:

- general information pertaining to past and present legislation and/or guidelines
- government documentation and pamphlets
- past EA-related documentation including project reports, consultants' reports and submissions
- semi-structured interviews with informants familiar with the past and/or present EA regimes of the Yukon.

The data collected for each of the Yukon's EA regimes, from the various sources, were reviewed relative to each other, and in relation to the components of the sustainability-focused framework. This provided a basis to consider the presence and/or absence of sustainability principles within the Yukon's EA system over time and within the present regime in the analysis phase.

In order to address the purpose and objectives of this research project, data collection focused on the individual EA regimes in a general sense, as well as, when possible, depending on the availability and quality of information, data on individual EA projects. A focus at the project-level was considered more appropriate than focusing on the comprehensive evaluation of PPPs. Although research contends that PPPs and SEA

are a better means of attaining and achieving sustainability (e.g. Pope et al., 2005); carrying out such an evaluation in this study would have been too large a project. Moreover SEA is not carried out as often, as noted by Gibson (2001, cited by Gibson, 2002a). SEA in Canada, under the CEAA, is not legislatively mandated. Therefore SEA is at the discretion of government departments to assess their policies, plans and programmes. Yet, the researcher acknowledges the value of such a study and application of SEA, particularly in a Northern Canadian context. The application of SEA in the Yukon context includes the screening of the *Kluane National Park Reserve and Management Plan*, in which potential environmental impacts ensuing from the plan's initiatives could be assessed and the plan could be adjusted accordingly (Parks Canada, 2006).

3.4.1 Literature and Document Review

Data surrounding both past and present Yukon EA regimes were collected and reviewed in relation to the sustainability-focused framework. Documentation included EA policy and legislative instruments relevant to past and present Yukon EA regimes, EA project reports, project proposals, newspaper articles, letters and consulting firm submissions and reports for several past projects. Data pertinent to individual EA projects were collected based on the availability of relevant data and documentation at the Whitehorse Public, Yukon College, and Energy, Mines and Resources, libraries.

3.4.2 Interviews

To further enrich insight into past EA regimes of the Yukon, as well as to gain a better understanding of the current regime, interviews were carried out with people familiar with both past and present EA regimes. Yin (2003) contends that interviews are the most important source of data for case studies.

Twenty-two semi-structured interviews were carried out with key informants during the months of May and June 2007 in Whitehorse. Of the twenty-two interviews, only twenty-one were used in this study. The researcher felt that one of the interviews offered little insight and was of little value to the study and therefore was not used. The answers provided were too brief to offer relevant data and the interviewee felt unable to answer some of the questions.

The literature review carried out in phase I of the research project assisted in formulating the list of interview questions used. The interview questions included broad-based questions regarding the interviewee's perceptions of the relationship of sustainability and EA processes and the interviewee's views concerning the changes that have taken place in the Yukon EA system over the years. These questions were followed with more specific questions organized according to different key themes of sustainability-based EA processes in northern settings. Such themes included systematic and holistic perspectives, values and preferences, public participation, traditional knowledge (TK), uncertainty and the precautionary principle, efficiency, and, lastly, monitoring and adaptive management. Included in the set of interview questions was one question which asked the interviewee to highlight key features which they feel are necessary in northern EA processes. It was anticipated that this inquiry would highlight

overlooked themes which could be further investigated and integrated into the sustainability-focused framework (See Appendix A for a list of the interview questions).

The interview protocol was developed and approved in accordance with Wilfrid Laurier University's Research Ethics Board procedures and guidelines. Likewise, in accordance with the *Yukon Scientists and Explorers Act*, a scientific research license was obtained from the Yukon Heritage Branch (License Number 07-34S&E).

In order to obtain a broad range of opinions concerning the Yukon EA system and sustainability, key informants were sought from different sectors; such as the federal and territorial governments, as well as First Nations, non-governmental organizations (NGO's), industry representatives and Renewable Resource Councils (RRC). Key informants, as Yin (2003, p. 90) explains,

are often critical to the success of a case study... (as) such persons not only provide the case study investigator with insights into a matter but also can suggest sources of corroboratory or contrary evidence – and also initiate the access to such sources.

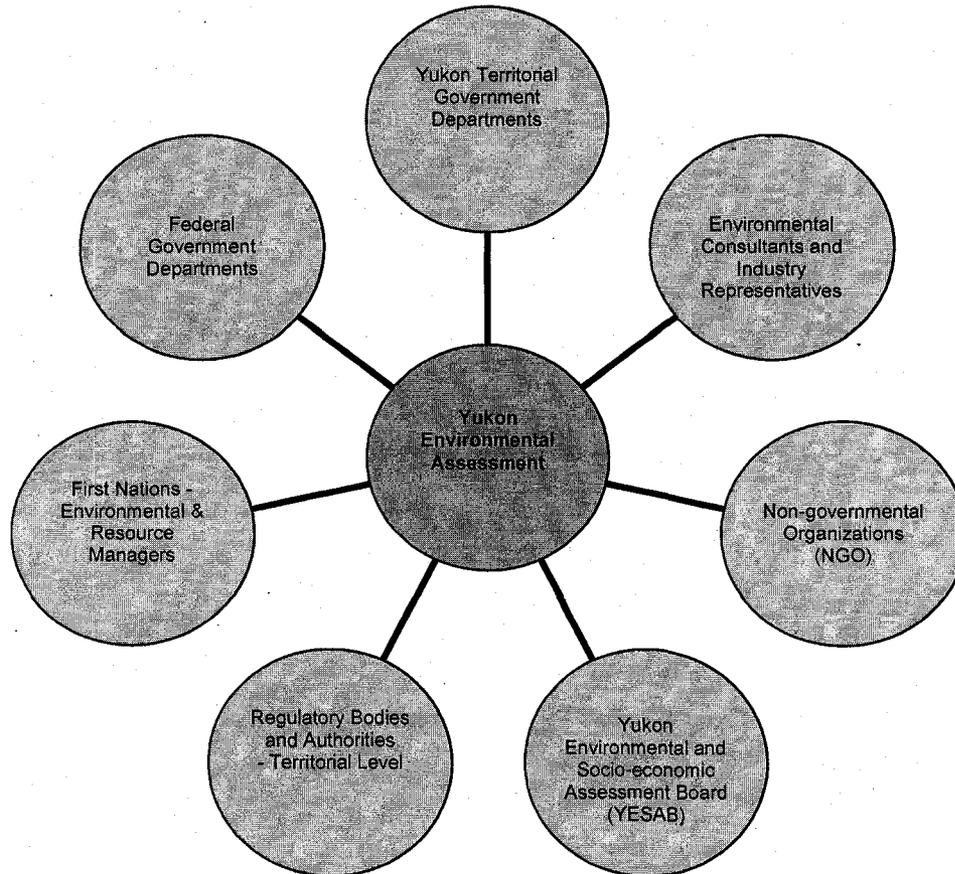
An initial list of potential interviewees was compiled by carrying out internet searches. This list was further supplemented with suggestions of potential interviewees provided by the researcher's advisor. Initial contact was made with several people on the list via email and telephone. Some interviewees also provided names of potential interviewees and suggested parties to interview that would provide valuable insight into the study. These leads were followed up.

There was a fairly good response rate to requests for interviews; however some people declined to be interviewed due to schedule constraints, lack of knowledge and

familiarity with the current EA legislation and other reasons unknown to the researcher. Several attempts were made in contacting several RRC but there was little success with responses.

As previously remarked, a broad spectrum of opinions and views concerning the Yukon's EA system and its relation to sustainability, were considered instrumental to the success of this study. Accordingly, the interviewees in this study held varying direct and indirect positions related to EA practices in the Yukon. Interviewees included two (2) representatives from federal government departments, three (3) representatives from the Yukon territorial government departments, two (2) representatives from territorial-level regulating and authorizing bodies, six (6) resource and environmental managers from First Nation governments (two interviewees were former resource and environmental managers), four (4) EA consultants, two (2) representatives of NGO's, and two (2) representatives from the current EA arms-length body, Yukon Environmental and Socio-economic Assessment Board (YESAB). Two (2) interviewees in the interview pool were involved in and worked on the drafting of the YESAA legislation (Figure 3.2).

Figure 3.2 Representation of Interview Pool



Interviews were carried out in person and ranged from less than 30 minutes to an hour. All interviewees were asked to sign an informed consent form that described the research study and its purpose and the procedural and ethical treatment of the interviewees' information, which ensures their confidentiality and privacy and consent (Appendix B – Informed Consent Form). The interviewees were asked the same set of questions, although slight modifications were made where emphasis was placed on some questions that the researcher felt that the interviewee would be best able to provide more information on, given his/her affiliation, background, and experience. Also, some

questions were occasionally excluded due to time constraints and other commitments on the part of the interviewee. The majority of the interviews were carried out in Whitehorse in the interviewees' offices or affiliated office rooms. Some interviews were carried out in local coffee shops and restaurants during interviewees' lunch breaks and in some cases out-of-town interviewees were coming into Whitehorse for their own affairs. Interviews were also carried out in Haines Junction, Yukon, a two-hour drive outside Whitehorse. All interviews were audio taped with consent from the interviewee and transcribed by the researcher at a later date.

3.5 *Data Analysis*

In the last phase, the data collected in the second phase of the project was interpreted and analyzed in light of the sustainability-focused framework and its components. The data collected regarding each of the Yukon's EA regimes, from the document and literature review and interviews were reviewed through triangulation and related to the components and criteria established under the sustainability-focused framework. This provided a basis to consider the presence and/or lack of sustainability principles within the Yukon's EA system over time.

In this way the experiences of EA in the Yukon could be explored and findings could be articulated from a sustainability perspective. The identification of gaps and opportunities in the process, required to fulfill sustainability goals, was also carried out and the research findings were broadened within the scope of other Northern EA regimes.

Transcribed interviews were coded according to the parties they represented in the study. Accordingly the groups that emerged included (1) federal government

representatives, (2) Yukon government representatives, (3) environmental consultants, (4) NGO's, (5) First Nations, (6) regulatory bodies and (7) YESAB.

The analysis of the data from the interviews and subsequent review of documentation was divided into two parts. In the first part, past EA regimes in the Yukon were evaluated from a sustainability perspective using the sustainability-focused framework. The past EA regimes of the Yukon were agglomerated into 3 separate groups. As a result, responses from the coded interview groups were categorized under the following categories (1) EARP together with EARPGO and (2) CEAA together with YEAA and (3) YESAA. Information on each of the EA regimes was considered against the sustainability-focused framework. This allowed for conclusions to be made regarding each of the EA regimes that have been in place in the Yukon.

In the second part of the data analysis, the current regime, YESAA, was considered and evaluated from a sustainability perspective. Information was drawn from each of the interview groups according to the theme-based questions, which corresponded with the sustainability principles as outlined in the framework. This allowed for investigation into the understanding of current, as well as missing, sustainability principles in the Yukon EA regime. This also permitted insight into the unique and necessary EA principles needed in Northern regimes.

The findings were extended and viewed in relation to other northern EA regimes in order to provide further insight into northern characteristics of EA regimes, in light of sustainability components outlined in the framework.

3.6 Chapter Summary

This chapter described the methods employed by the research in order to fulfill the projects' objectives. The chapter highlights the application of the case-study approach to attest and uncover EA-sustainability principles suited to northern contexts. The chapter also provides a detailed account of the methods exercised by the researcher in all stages of the project and provides a basis and rationale for the methodologies employed for the purposes of this project.

4 YUKON ENVIRONMENTAL ASSESSMENT & SUSTAINABILITY

This chapter provides an in-depth presentation of the case study with a particular focus on the history and current situation of EA in the Territory, as well as providing an historical overview of prevalent political and socio-economic conditions and key events that have and continue to influence the application of EA in the territory.

The Yukon EA process presents an interesting case to study as there have been numerous changes to the political and regulatory structure of the territory, paralleling or leading other Northern regions of Canada, with regard to resource and environmental management and the increased engagement of First Nations as active decision makers. Although many of the earlier changes to Yukon's EA process reflected changes enacted by the federal government, the major recent changes have been the result of internal political changes, such as the settlement of land claim agreements and devolution. These innovative changes include the establishment of a more inclusive, accessible, and transparent EA process that permits better reflection of its citizens' values and priorities and secures First Nations participation as decision makers and active stakeholders in the process; all of which are important features for Northern EA regimes. As Everitt et al. (1988) state, the effectiveness of EA in the North should be tailored to reflect Northern issues which have been ignored in the past such as social equity, Northerners' control over resources and land, and the opportunity to voice their opinions and concern about the Territory's economic future and development.

Moreover, as the YESAA is still in the initial stages of implementation there is potential for insight into the various initiatives that exemplify and correlate well with sustainability initiatives, which are critical to such regimes.

4.1 *An Examination of the Socio-ecological System of the Yukon – Past and Present*

The environmental and political history of the Yukon has been largely influenced and tied to patterns of resource development, a history mirrored by much of Northern Canada.

4.1.1 Early Resource Extraction and Key Historical Events

The Yukon is abundant in both renewable and non-renewable resources. The non-renewable resource deposits in the territory include copper, lead, zinc, tungsten, silver and iron ore, along with hard rock and placer gold deposits, with occurrences of asbestos, barite and coal (Yukon Economic Development, 2004). There are also eight oil and gas basins and there is diamond potential (Yukon Government Economic Development, 2004).

The earliest extraction of renewable resources, apart from traditional subsistence activities of local Aboriginal peoples, began with the European fur trade, which introduced a trading economy between the aboriginal peoples of Canada's north and Europeans (Duerden, 1992).

The earliest extraction of non-renewable resources began with the discovery of gold at Bonanza Creek (formerly Rabbit Creek) near Dawson City in 1896; spawning the famous Klondike Gold Rush, which brought an influx of 30,000 migrants into the area,

typically Americans, seeking fortunes (Bone, 2003). It was during this period that unsustainable practices and damages to the Yukon environment took place and the remnants of such are still evident today in and around Dawson City (Coates and Morrison, 2005). For example, there was widespread deforestation in the quest for fuel wood, along with the slaughter of thousands of caribou (Duerden, 1992). Likewise, streams were polluted and vegetative cover was removed prompting ripple-effect changes to the ecology of the area (Mulvihill et al., 2001; Chapin et al., 2004).

The years 1942 and 1943 saw another key event in Yukon's history with the building of the Alaska Highway. The Alaska Highway was built with little, if any, concern for environmental effects and issues associated with its construction (Mulvihill, et al., 2001). Eventually, the construction of the Alaska Highway initiated further expansions to the territory's transportation network. Consequently, the Yukon has the most developed transportation network of all of Canada's northern territories. This is further supported by the climatic conditions of the region, which permit all-season-access roads (White, 2001).

Following World War II, with increased pressure from world markets, there was a surge in resource extraction, and mining once again became a key economic activity for the region as well as for other Northern regions (e.g. Coates and Morrison, 2005; Nassichuk, 1987). Improvements in technology and information during the 1950s allowed for greater exploration of resources in the region (Nassichuk, 1987). These new developments spurred boom-bust cycles that have become endemic to the Yukon's history; originally initiated by the Gold Rush. The Faro mine is a famous example of such a mine in the Yukon, which has gone through cycles of openings and closures since its

start up in the late 1960s, as a result of market demands and financial problems (Bone, 1992). As in the case of many other mining projects in the north, the federal and territorial governments supported the Faro mine with subsidies, including subsidized electricity, as well as direct grants, in the form of loan guarantees, second mortgages, and road building and other incentives (Coates and Morrison, 2005; Mining Watch Canada, 1999).

In the early 1970s, energy and mineral development became the engine of economic growth and development for the region (Everitt et al., 1988). This push came largely through federal incentives such as subsidies. Moreover, resource extraction has been favoured to take precedence over other less invasive land uses as a result of long-standing legislation that has supported and promoted such activities, such as the *Yukon Quartz and Placer Mining Acts* and the *Yukon Placer Authorization* (Slocombe et al., 2005) and later with the *Canadian Oil and Gas Act* introduced in the early 1980s (Duerden, 1992).

Before the 1960s and 1970s, paralleling the experience of other Northern regions, extraction of resources and development occurred under little regulation and in many cases, mining activities degraded the landscape; polluting waterways and the ground from acidic leaching and tailing ponds and consequently disrupting the distribution and populations of fish and wildlife species and destroying habitat (Chapin et al., 2004). Beginning with the Klondike Gold Rush, continuing with the construction of the Alaska Highway and looming megaprojects, the interests and concerns of the Yukon First Nations were often ignored, as their lands and way of life were impacted (Hébert and Hilling, 2003). The Berger Inquiry, which sought to review the implications of the

Mackenzie Valley Gas Pipeline project, brought the plight of Canada's northern aboriginal peoples to the forefront of Canadian politics and media. Through extensive public participation exercises, the inquiry highlighted the social, economic and environmental impacts of such project in Canada's North.

It is imperative to recall, when considering resource extraction patterns from a historical perspective that development in the region has occurred for the most part with the intention and with the priority of satisfying southern markets, with little consideration of local communities including Aboriginal peoples and their traditional way of life. Similarly, for much of the Yukon's history the authority and decision-making power concerning resources was largely with the federal government, which exercised distant control, and reflected decision making factors based on national interests and broader policy mandates that took precedence over local issues (Dacks, 2004). This phenomenon left the concerns and interests of local communities, which were directly affected by the federal government's decisions, out of the decision-making equation. Moreover, this occurrence reinforces the notion that the northern reality and the impacts experienced in the Yukon are often the result of values and ideas that emanate from elsewhere (Duerden, 1992); most commonly from a distant government body and/or southern businesses and markets. Fenge and Rees (1987) contend that this approach favours the extraction of northern non-renewable resources to sustain the southern industrial economy.

4.1.2 Economy

Despite the prevalent impact of mining activity through the history of the Yukon, mining continues to be an industry that suffers fluctuations in its production and its

growth (Coates and Morrison, 2005; Yukon Bureau of Statistics, 2006). Despite the oscillating and ever declining status of the territory's resource sector, future development 'dreams' continue to surface, as was the case with the re-emergence of the Alaska Highway natural gas pipeline recently (Coates and Morrison, 2005).

The Yukon also has a viable renewable resource industry and efforts have been initiated to promote the expansion of forestry and agricultural industries (Duerden, 1992). There has been some growth in the forestry industry over the last 10 years and it has become of political significance, yet it has not contributed significantly to the Yukon economy (Slocombe et al., 2005). The Yukon has sufficient arable land for agriculture, although a viable agricultural industry is hindered by a short growing season (Duerden, 1992). The promotion of renewable resource industries over the years may be the result of economic diversification strategies to assist in alleviating the dependence on non-renewable resource extracting industries.

The tourism industry has become an increasingly significant industry for the Yukon. The industry offers employment opportunities in the high-summer season, yet the industry is seasonal, with some hotels having to close during the winter months (Coates and Morrison, 2005). The Alaska Cruise industry has become of economic benefit to the local economy also (Coates and Morrison, 2005). And this is coupled with recreational vehicle (RV) travel along the Alaska and Klondike Highways.

Employment in all the levels of governments continues to be of economic importance to the territory with nearly 21.1% of the population employed by the public administration industry (Yukon Bureau of Statistics, 2001). This value contrasts sharply

with the 3% employed in the primary sector of its economy (Yukon Bureau of Statistics, 2001).

4.1.3 Demography

The Yukon has a population of about 30,372 (Statistics Canada, 2006b), with the majority of the population residing in the capital and urban centre of the territory, the city of Whitehorse. Whitehorse is the central hub for government, services, business and transport for the territory (White, 2001) and continues to experience an in-migration of people from smaller communities (Coates and Morrison, 2005). Aboriginal peoples make up 23% of the territory's population; a lower percentage in comparison to the other territories, the NWT and Nunavut (Statistics Canada, 2006a, 2006b, 2006c). Despite the smaller percentage, Yukon's First Nations have become key players in environmental matters, as a result of increased legal rights; re-asserting control over land and resources, allowing for a greater reflection of their traditional values and priorities (Duerden, 1992).

The territory has experienced fluctuations in its population over the years, with a transient population reflective of boom bust cycles associated with mining activities. This phenomenon is evident when considering the number of towns within the Yukon that have grown and declined with boom-bust trends, such as Dawson City (Coates and Morrison, 2005). There has also been an influx of migration from outside provinces seeking employment opportunities and the northern lifestyle (Coates and Morrison, 2005).

Understanding the make-up of the territory's population is an imperative consideration. With such a small yet very diverse population, there are ranges in values

regarding to the uses of land; such as mineral extraction, agricultural uses, commercial and non-commercial wildlife harvesting or tourism related activities. Considering this provides a basis from which one is able to understand the contentious debates that can ensue in relation to EA and project development and the development of land use plans (e.g. Staples, 1987).

4.1.4 Politics

The political history of the territory has been largely tied to the federal government, which has exercised power and control in the territory since the Klondike era, with the introduction of the *Yukon Act* of 1898. Following the Klondike era there was a decline in the federal government's interest in the Yukon. Political interest resurfaced in the 1960s, with the re-assertion of federal authority and decision-making powers concerning resources exercised through the Department of Indian Affairs and Northern Development's (DIAND) Northern Affairs Program (Reed, 1990). The DIAND Northern Affairs Program became responsible for managing minerals, water, forests and most of the land in the Yukon (Slocombe et al., 2005) and accordingly, also EA. DIAND became a province-like administration, under the *Yukon Act* and other federal statutes, (Reed, 1990). The Minister of DIAND became the political leader of the North at the federal level, as outlined under the DIAND Act (Slocombe et al., 2005). Thus, the federal government, through DIAND, exercised much control over development-related decisions in the North. This was the result of Crown land and natural resources in the North, both on the surface and at subsurface levels, belonging to and being administered by the federal government and not the territorial government (Robertson, 1985).

Moreover, Yukoners could be advisors to development decisions but the federal government had an overriding rôle and decision-making powers and, in many cases, development projects were often approved without the consent of Yukoners (Smyth, 1992).

Transfer payments were introduced in the 1950s by the federal government (Ironsides, 2000) as a form of funding for territorial governments. In many instances this form of funding has acted as a support for the fragile Yukon economy (Coates and Morrison, 2005). Smyth (1992) summarizes the potential barriers that have delayed the Yukon's entry into provincehood and the devolution of federal responsibilities to the territorial government; which included having a small population base, an uncertain revenue base, unresolved internal affairs with aboriginal land claims, and the continued interest of the federal government in the North.

The legal foundation and transfer programs reinforced the notion of the northern territories as being internal colonies of Canada; hinterlands in which resources are extracted for the benefit of outsiders (White, 2001).

Of political significance to Canada's northern territories, are the *Territorial Water Board Act* of 1970 and *Northern Inland Waters Act* of 1972. The *Northern Inland Waters Act* and its associated regulations for the Yukon and the NWT establish regulations and discretion for the conservation, development and utilization of water resources in the territories (Everitt et al., 1988). Likewise the Act also stipulated the creation of two water boards, one for each of the territories, in order:

to provide for the conservation, development and utilization of the water resources of the Yukon Territory and the Northwest Territories in a manner that

will provide the optimum benefit there from for all Canadians and for the residents of the Yukon Territory and the Northwest Territories in particular (NIWA, s.10).

Board membership ranges from 4 to 9 people, with 3 people being nominated by the Government Leader, one-third of the members are nominated by the Council of Yukon First Nations (CYFN) and the remaining members are nominated by the federal government departments involved with the management of waters (Yukon Water Board, 2007). The Chairperson, along with the Vice-Chairperson, is appointed from within the board members by the Yukon government leader. Prior to 1982, board membership included federal government employees. Due to the quasi-judicial nature of the board and in order for it to exercise an arms-length approach, a federal court decision stipulated that board members not be delegates of the parties which nominate them (Yukon Water Board, 2008). Subsequent to the Act, the Yukon Water Board became an adjudicative board and acts as an impartial tribunal responsible for reviewing water licenses and setting water license terms and conditions for water usage and waste disposal in waterways for industrial, agricultural and municipal activities through a public hearing process (DIAND, 1992a). In 1993, the *Northern Inland Waters Act* was replaced by the *Yukon Waters Act* and the *Northwest Territories Waters Act*. The Water Board has played a significant role in water license applications in the Yukon over the years as the primary environmental regulator, particularly in the 1970s through to the late 1980s (Yukon Water Board, 2008).

Since the 1970s, the federal government has begun to devolve some of its powers and increase the responsibilities of the territorial governments (White, 2001). The greatest evidence of this has been through the devolution process. Another key event in

Yukon's political history was initiated with the signing of aboriginal land claim agreements.

4.1.4.1 Land Claim Agreements and the Umbrella Final Agreement

The ratification of land claim agreements has signified a shift from previous political attitudes and actions which shut Aboriginal peoples out of environmental and resource-related decision making in the past. During the 1970s, Aboriginal peoples began to take up government and other posts and became significant players in the political arena, igniting political activism and awareness of aboriginal and environmental issues (Poelzer, 2002). Land claim negotiations commenced in 1973 in the Yukon, with negotiations between DIAND and the Council for Yukon Indians (CYI), the Yukon Association of Non-Status Indians and the Yukon Native Brotherhood (which combined under the CYI and later became the CYFN) (DIAND, 2004a).

Modern treaties or land claim agreements provide for the formal recognition of rights and full ownership of the land and resources at the surface and subsurface levels (Usher, 2003). Likewise, accompanying self-government agreements establish First Nation bands as legally constituted government bodies, endowed with law-making powers concerning their citizens and their settlement lands (Dacks, 2004). In addition, land claim agreements secure economic benefits, through a one-time capital transfer payment and ongoing economic benefits associated with resource development on settled lands, which may include resource revenue sharing as well as the provision of employment for the local First Nation group (Usher, 2003).

In 1993, the Yukon Umbrella Final Agreement (UFA) was signed between the federal and territorial governments and the 14 remaining bands represented by the CYFN, which had yet to sign land claim agreements (the Inuvialuit signed in 1984 and the Gwich'in in 1992). The land claim agreement allocated 41,595 km² to the First Nations governments; a land base that makes up almost 9% of the Yukon (Natcher and Davis, 2007).

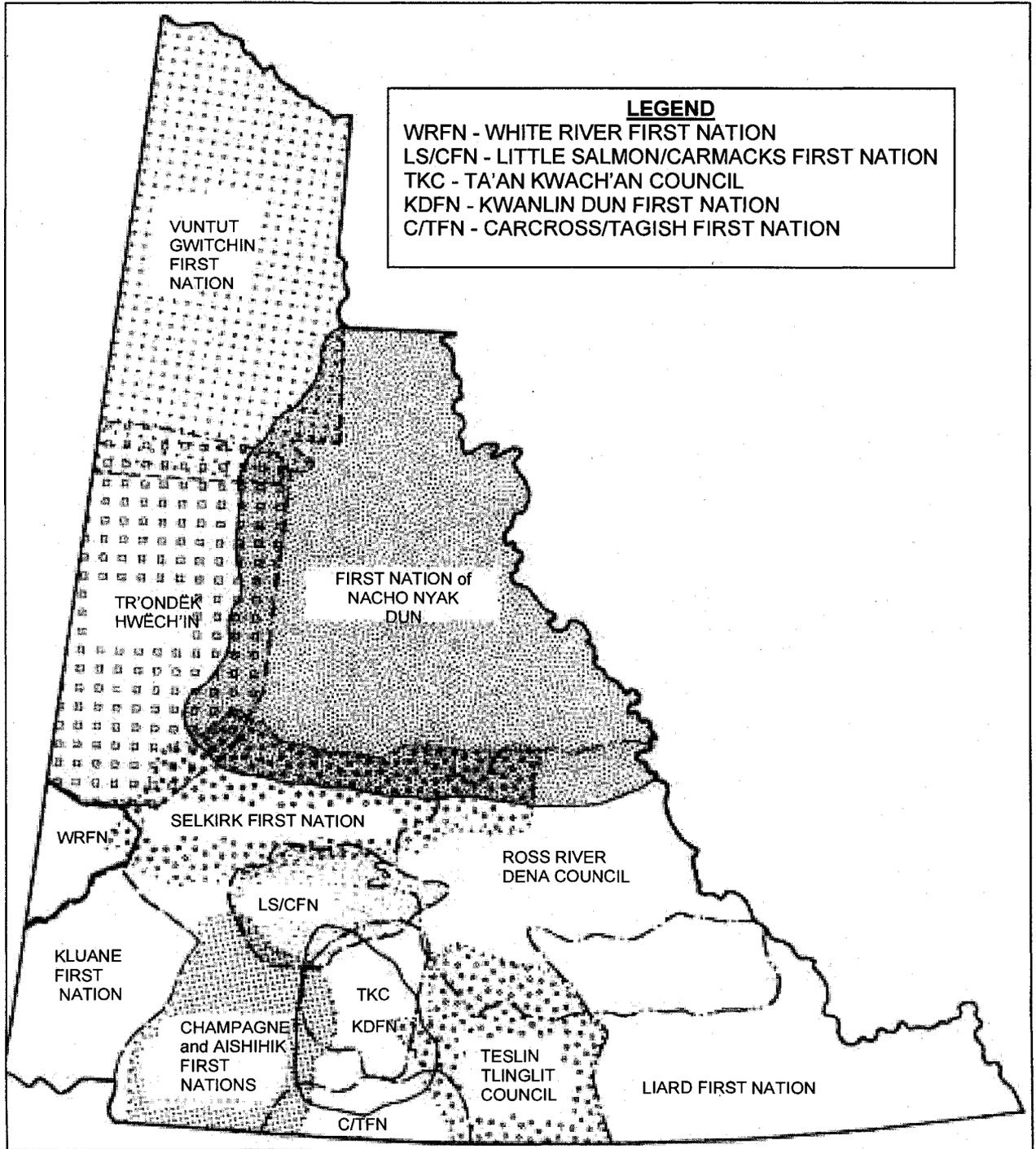
The UFA established rules for bands to negotiate local-specific comprehensive land claims with the federal government (Natcher, Davis and Hickey, 2005). Each specific agreement reflects the broader provisions of the UFA, while recognizing and respecting the authority and responsibilities of each individual First Nations group (Slocombe et al., 2005). Furthermore, stipulated under each Final agreement are Financial Transfer Agreements, which are negotiated every five years, and the Programs and Services Transfer Agreement (Dacks, 2004). Eleven of the fourteen Yukon First Nation bands have signed and finalized their final and self-government agreements (at this time the White River First Nation, the Liard First Nation and the Ross River First Nation, both of which are part of the Kaska Tribal Council, have yet to finalize their agreements) (Figure 4.1).

Land claim agreements delegate authority and responsibility to a band to administer governmental internal affairs, including the management of resources and land use planning on settlement land, along with provisions for health, social services and economic development to all their citizens regardless of where they live in the Yukon (Dacks, 2004). Additionally, the UFA provides for the establishment of Land and Resources Departments for each band. These departments became responsible for

establishing bylaws, levying fees and overseeing land use and development, and on activities such as wildlife harvesting, resource development, EA, and scientific research (Natcher and Davis, 2007). Moreover, these departments assume the role of former federal land management agencies on settlement lands following the UFA and devolution (Natcher and Davis, 2007).

The provisions of the UFA called for the creation of co-management boards. These boards included local Renewable Resource Councils, the Yukon Land Use Planning Council, Yukon Salmon Council, and the Yukon Water Board (Slocombe et al., 2005). Additionally, the UFA called for the integration and recognition of TK in environmental management and it also stipulated the detailed implementation of land use planning initiatives for the territory and the establishment of land use priorities, as outlined in Chapter 11 of the UFA. Chapter 12 outlined provisions for the creation of an EA process suited for the Yukon Territory, which will be explored in Section 4.2.5. Land claim agreements, along with co-management boards, have provided First Nations with means of expressing their interests and values, as well as legitimized their control and jurisdiction over resources, thereby increasing the role they exercise in environmental management. Land claim agreements ensure the protection of the Aboriginal peoples' way of life and culture, by allowing such groups to have political control not only of land and resources, but also concerning social programs and services as well as providing opportunities in ensuring security and benefits from economic development; thus promoting economic self-sufficiency (Saku, 2002).

Figure 4.1 Map of Yukon First Nations Traditional Territories

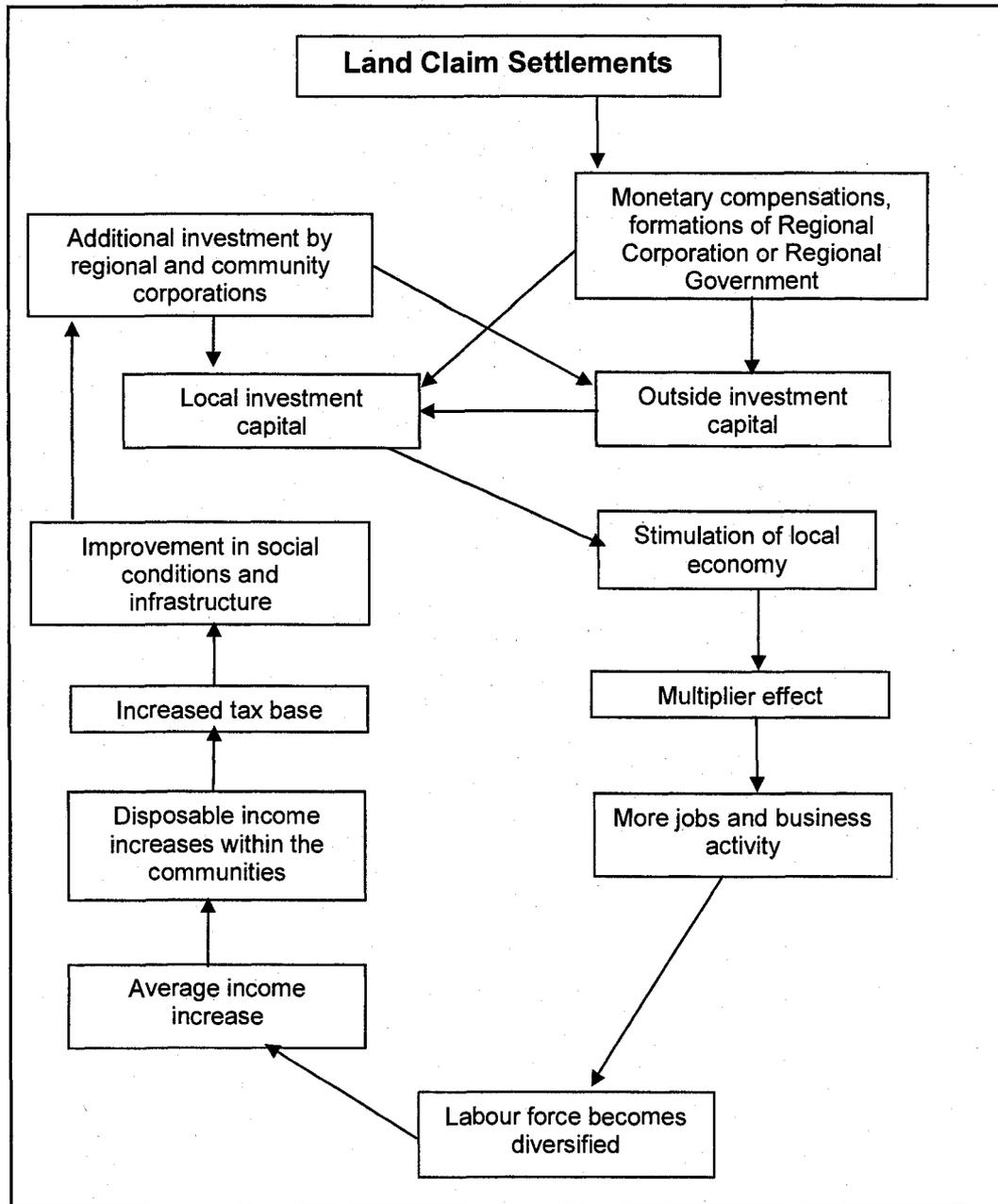


Source: DIAND, 2004b.

Moreover, land claim agreements permit the inclusion and adoption of their values and traditions into their governmental processes and structures; something contrary to the presiding federal and territorial governments' structures and processes, which have few features resembling aboriginal peoples' forms of government and management (Natcher and Davis, 2007). James C. Saku (2002) summarizes potential benefits that can ensue from land claim agreements (Figure 4.2).

The UFA has come to signify the changing power relationships in the Yukon; placing them at par with other levels of government. Yet, the Yukon First Nations governments face a number of internal and external challenges that hinder their potential to function at their full administrative capacity. This is due in part to the small population of aboriginal peoples residing in the Yukon and which are dispersed with some of their citizens residing outside of their settlement land. This can pose a financial and administrative burden on their governments (Dacks, 2004). In addition, First Nation governments are faced with issues of human capacity, as there is a need for skilled staff to carry out administrative and scientific/technical responsibilities. This challenge is amplified further by the generally low educational attainment among aboriginal peoples (Dacks, 2004). First Nation governments find themselves training people, only to have them leave to work for the federal or territorial governments or the private sector (Dacks, 2004). Similarly, First Nation governments encounter financial obstacles in their abilities to adopt new ideas and implement changes that can be more reflective of their values and traditions (Natcher and Davis, 2007). Consequently, these factors have strained these newly formed government bodies operating at their full potential.

Figure 4.2 Benefits Ensuing From Land Claim Settlements



Source: Saku, 2002, p.146.

4.1.4.2 Devolution

On April 1st 2003, the Yukon territorial government was granted autonomy over public surface and subsurface lands, water and resources from the federal government, through the re-drafting of the *Yukon Act* (DIAND, 2001c). The Act provides the Yukon government with control over the management of most lands and resources and water rights in the territory excluding some which will remain under federal jurisdiction. Provisions which will remain under federal jurisdiction and control include cases of national interest, such as in issues of national defence, the establishment of national parks and wildlife conservation areas, the welfare of First Nations as well as the negotiation and implementation of First Nations land claim and self-government agreements (DIAND, 2001c). Accordingly, 240 positions along with \$34 million dollars a year of funding was transferred from DIAND's Northern Affairs Program to the territorial government (DIAND, 2001c).

The devolution process signified greater control over resources for Yukoners, permitting greater autonomy over the future of the territory as well as resolving contention that had accumulated between the federal and territorial governments.

Despite this transfer of authority and responsibility, the Yukon government initially choose to maintain the previous legislation set up by the federal government, by enacting mirroring bills; particularly the *Placer Mining Act*, the *Quartz Mining Act*, the *Territorial Lands Act*, the *Water Act*, and the *Yukon Environmental Assessment Act* (which later would be replaced by the *Yukon Socio-economic Assessment Act*) (Natcher and Davis, 2007). This, Natcher and Davis (2007) contest, has hampered First Nation administrative capacities, as it continues to reinstate 'Western-based' and top-down

ideologies. Likewise, there were no real changes that allowed for the adoption of ideological notions that are significant to and supported by the aboriginal peoples of the Yukon (Natcher and Davis, 2007).

4.2 *The History of Environmental Assessment in the Yukon*

Subject to extensive federal control and authority over land and resources, the changes to Yukon's EA processes mirror changes to the federal EA system (e.g. Gibson, 2002a). As previously mentioned, prior to the 1960s and 1970s extraction of resources and development occurred with little regulation. In the 1960s, dealing with environmental matters occurred behind closed doors between government officials and industry representatives and revolved mostly around bottom-line pollution control measures. In many cases, the federal government's lack of commitment and attention to local and regional concerns resulted in poorly planned development projects, which often resulted in minimal benefits to Yukoners (Oppen et al., 1981).

4.2.1 The Environmental Assessment Review Process (EARP)

The Yukon's earliest EA process was the Federal Environmental Assessment Review Process (EARP) established by Cabinet in 1973 (later amended in 1977 and reviewed in 1979). The purpose of EARP was:

to ensure that the environmental consequences of all federal projects, programs and activities are assessed before final decisions are made and to incorporate the results of these assessments into planning, decision-making and implementation. (FEARO, 1983, p. 9, cited in Fenge and Smith, 1986, p. 597).

The EARP consisted primarily of two levels of assessment; 1) initial assessment and 2) a panel review. The first level, initial assessment, involved environmental screening of projects, programs or activities, carried out by the initiating federal department or agency, known as the responsible agency or department responsible for issuing authorizations (Fenge and Smith, 1986). In the case of the Yukon, the responsibility for EA was delegated to DIAND's Northern Affairs Program, leaving the Environmental Directorate as the head of the process responsible for its execution in the Yukon and in the North (Everitt et al., 1988).

The second level involved a formal public review by a panel, whose members were appointed by the Minister of the Environment (Fenge and Smith, 1986). Panel review was triggered by projects, programs or activities, which had significant effects associated with them. In the case of EARP, these types of assessments were reserved for major projects such as hydrocarbon and hydropower developments and transportation projects (Fenge and Smith, 1986). Each review panel was responsible for issuing guidelines to proponents to prepare Environmental Impact Statements (EIS). Upon receipt of the EIS, the panel was then responsible for reviewing the EIS, seeking public input, and formulating a recommendation that would be presented to the Minister of the Environment and the Minister of the initiating department in a panel report. The Ministers would make the final decision on whether or not the project should proceed (Fenge and Smith, 1986). Panel reviews were rarely carried out; only 30 were carried out between 1972 and 1986 (FEARO, 1986, cited in Fenge and Smith, 1986, p. 597). The earliest reviews included the Alaska Highway Pipeline in the Yukon, an alternative to the proposed Mackenzie Valley pipeline. As well the Beaufort Sea Environmental

Assessment Review Panel, between 1980 and 1984, assessed proposed hydrocarbon production in the Beaufort Sea region, touching on the Yukon North Slope (Mulvihill and Baker, 2001).

One of the criticisms of the process was that it was based on a 'self-assessment' approach, whereby federal departments and agencies were responsible for assessing the potential environmental effects ensuing from their own projects. Moreover, as a primarily administrative process, without any legislative basis that would make its execution a mandatory requirement, it was left to the discretion of the proponent and/or initiating department whether or not they chose to carry it out (Smith, 1993). This discretion was also exercised with the implementation of recommendations from panel reviews (Fenge and Smith, 1986). Consequently, by the late 1970s the process was being ignored by many federal agencies (Fenge and Smith, 1986; Smith, 1993). This was particularly evident in the Yukon, despite the federal governments' control and authority in the area, which resulted in the uneven and limited application of EARP in the Yukon (Slocombe et al., 2005).

The screening phase at the initial assessment level was also criticized for being secretive (Rees, 1980). Moreover, the oil and gas industry felt that the EARP process was inefficient, duplicating and repeating the actions of the National Energy Board and lacking coordination between the federal agencies, thereby prompting delays in approvals and incurring expenses (Fenge and Smith, 1986). Industry felt it was unstructured, time consuming, and unnecessary (Smith, 1993). The BEARP panel highlighted some of these inefficiencies, which spurred later reforms with the introduction of EARPGO (Rees, 1980).

4.2.2 The Environmental Assessment Review Process Guidelines Order (EARPGO)

In 1984, the EARP was clarified further, through guidelines issued by a cabinet order, known as the Environmental Assessment Review Process Guidelines Order (EARPGO). The guidelines order tightened the self-regulation and assessment process of EARP, by clarifying the roles and responsibilities of the parties involved in implementing EARP from the screening phase to the panel review phase (Fenge and Smith, 1986).

The EARPGO continued to be similar to EARP, in that it remained a self-assessment process, with initiating departments acting as decision makers; determining if an assessment was required or if it should be referred to FEARO, as well as carrying out EA screening. With the EARPGO, the screening procedures were clarified through the guidelines order, thereby ensuring consistency and addressing some of the earlier criticisms of EARP's screening phase.

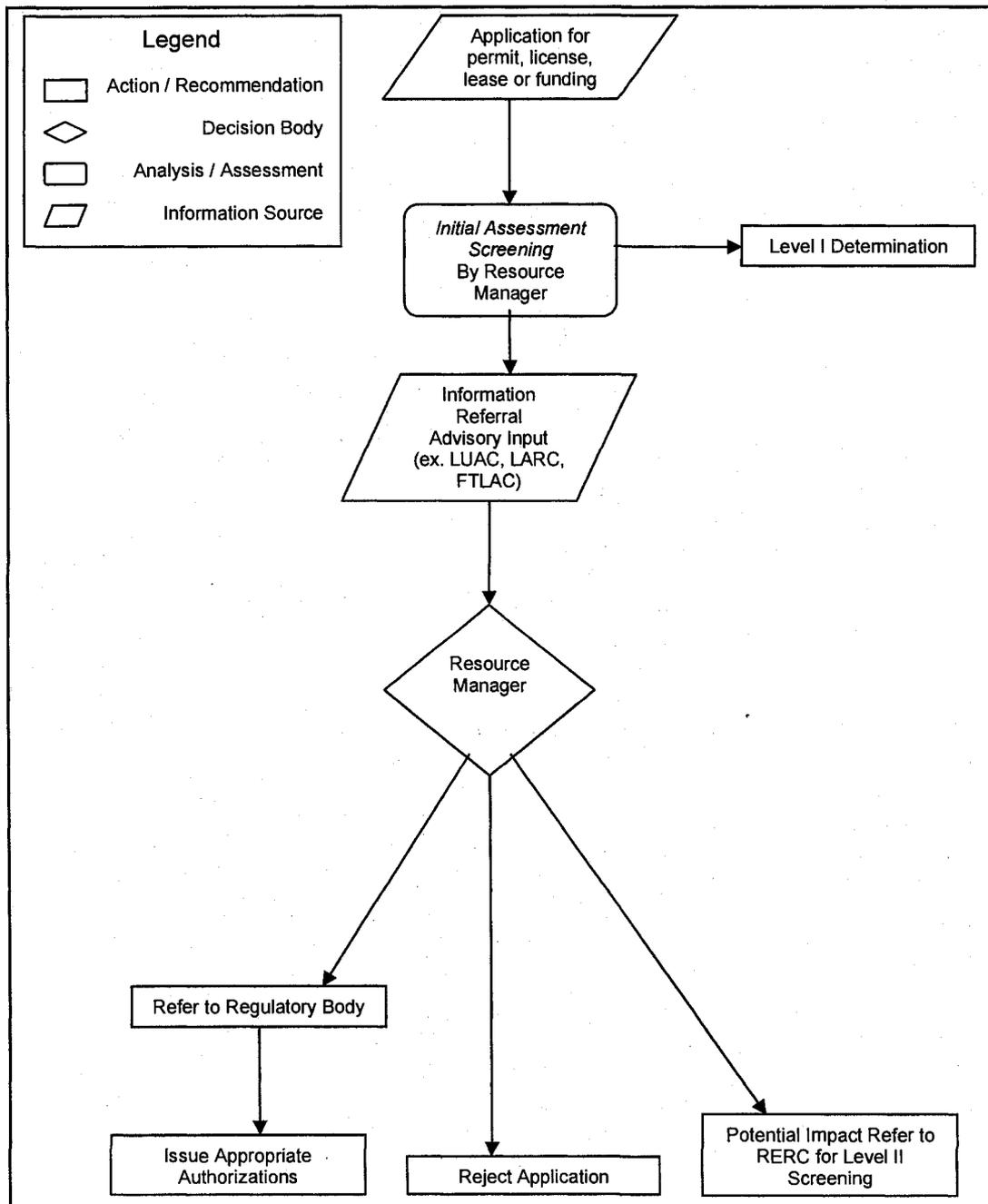
DIAND clarified the process further into a three-level system, in the 1980s, which distinguished between different types of projects, in terms of project size and appropriate assessment procedures. The three-level system divided projects into those requiring the issuing of permits, or a comprehensive screening, and/or a review panel and public hearings.

Level I assessments involved mainly the screening of simple, small-scale projects which were thought to have insignificant environmental impacts. Examples of such projects included applications for land use permits and surface leases of land and timber (DIAND, 1992a). The information used in screening assessments was the same type of information required to make regulatory decisions on applications and thus level I assessments resulted in decisions that set out conditions on leases, permits and licenses

(DIAND, 1992a). These types of assessments were mainly carried out by DIAND resource managers, who did technical reviews and gathered comments from specialists in other governmental departments as well as advisory groups (DIAND, 1992a). These advisory groups included the Land Use Advisory Committee (LUAC), the Federal-Territorial Lands Advisory Committee (FLAC), the Land Use Review Committee (LURC); (for level I-type assessments) and the Regional Environmental Review Committee (RERC; for level II-type assessments, DIAND, 1992a). Depending on the nature of the project, application information would be forwarded to the Council of Yukon First Nations (DIAND, 1992a). At the time there was no stipulation requiring this action to be taken. Final decisions were made by DIAND's resource managers and there was little opportunity for public input at this level. If the resource manager felt that the project raised public concern, it would then be recommended for assessment as a level II assessment, (Figure 4.3 - Schematic diagram of DIAND's Level I Screening Process).

Level II assessments involved projects with larger environmental impacts and raised public concern. This type of assessment involved a more detailed review of the application, with greater dialogue between advisory committees, particularly the RERC. The RERC was created in part to assist in the cross- governmental consultation involved in the assessment process (DIAND, n.d.). The RERC was chaired by the Environmental Directorate of DIAND and was made up of representatives from both the federal and territorial governments. Representatives from the Council of Yukon First Nations were invited to participate in the RERC if they were directly affected by the proposal (DIAND, 1992b).

Figure 4.3 Schematic Diagram of Level I Screenings

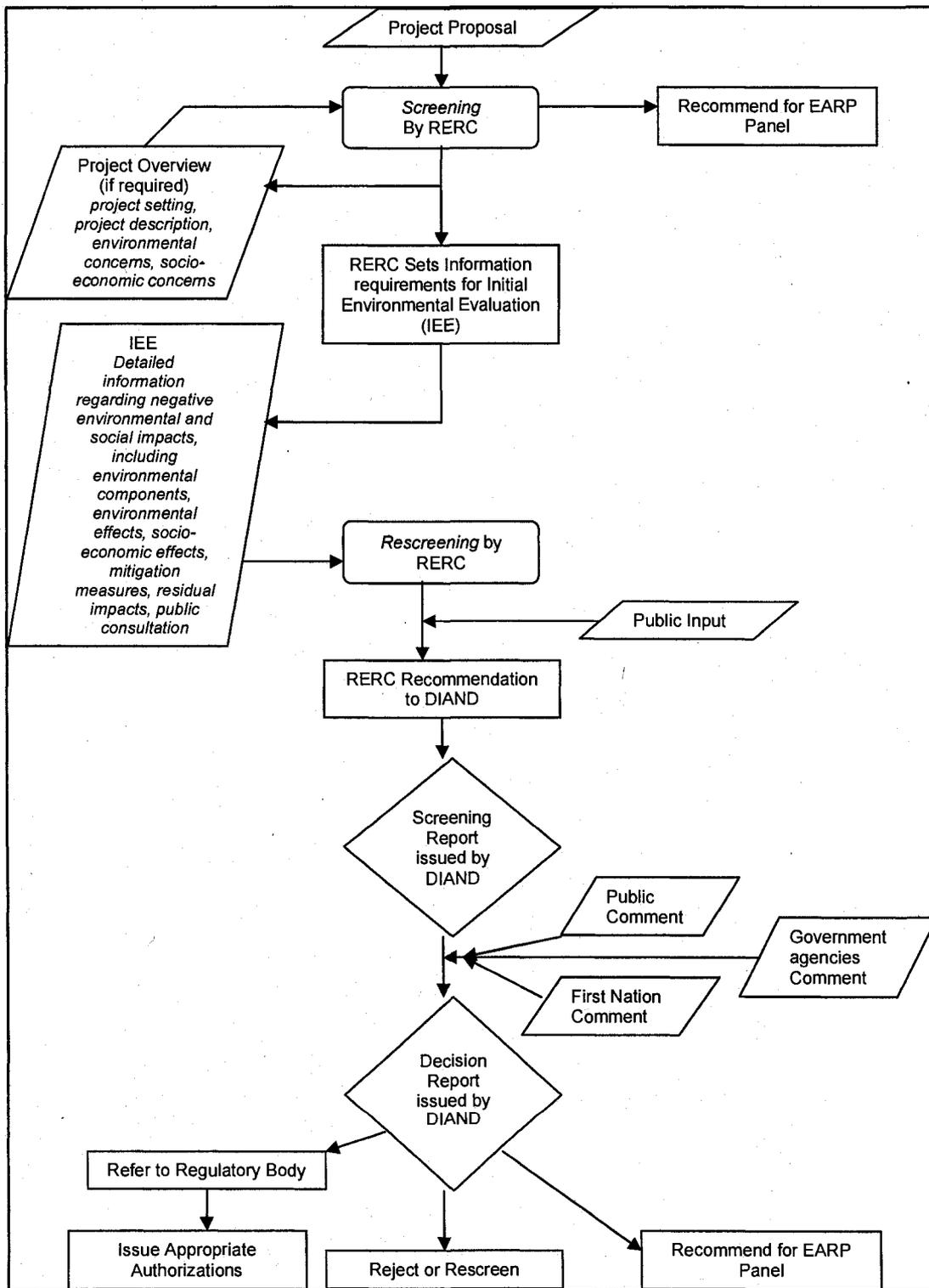


Based on Everitt et al., 1988; DIAND, 1992a.

The terms of reference for the RERC defined the committee as a multi-disciplinary inter-intra governmental advisory committee, which was “to provide specialist or expert information or knowledge to DIAND, Yukon Region to assist with the screening and comprehensive study of ‘level II’ development projects” (DIAND, n.d.). The RERC played a key role in level II assessments as it coordinated the environmental review and provided recommendations to DIAND, yet they did not have authority to make final decisions (DIAND, 1992b). Final decisions were left to DIAND’s Director of Renewable Resources who issued a decision report. Decision reports outlined the final decision, which indicated one of the following: the project was referred to a regulatory agency to issue appropriate authorizations, the project was rejected completely, the project was referred for re-screening, or lastly, the impacts associated with the project were deemed to be significant and the project was subject to a panel review assessment (DIAND, 1992b).

Level II assessments allowed greater opportunities for public comment and input to be included in the assessment, as proponents were required to demonstrate that they had carried out public consultation activities in affected communities and gathered public information. As well, proponents were required to include how public concerns related to their project were going to be addressed in the project proposal and in the Initial Environmental Evaluation (IEE) (DIAND, 1992b). The public was also given an opportunity to comment on the Screening Report prepared by DIAND, prior to a decision report being drafted (DIAND, 1992b; Figure 4.4 - Schematic diagram of DIAND’s Level II Screening Process).

Figure 4.4 Schematic Diagram of Level II Screening



Based on Everitt et al., 1988; DIAND, 1992b. Refer to Figure 4.3 for Legend.

Yet, despite public opportunity for input in the assessment process, the level of interest representation and public participation remained a concern (Pyrstupa, 1994).

Level III assessments involved panel reviews and public hearings. These projects were more complex, with increased potential harmful impacts associated with them. They also were often controversial and raised widespread public concern. Project proposals would be referred directly to this level by the initiating Minister or from a level II screening (DIAND, 1992b). The screening and coordination of this type of review was through the Ottawa-based FEARO (DIAND, 1992b).

The federal Minister of the Environment appointed members to the panel based on experience and knowledge (Everitt et al., 1988). The Minister of the Environment also established the Terms of Reference for the Panel and its assessment process; thus panel review processes varied according to each project. There was also no legislated requirement for northern or aboriginal people to be included as members in such panels (Henderson, 1992).

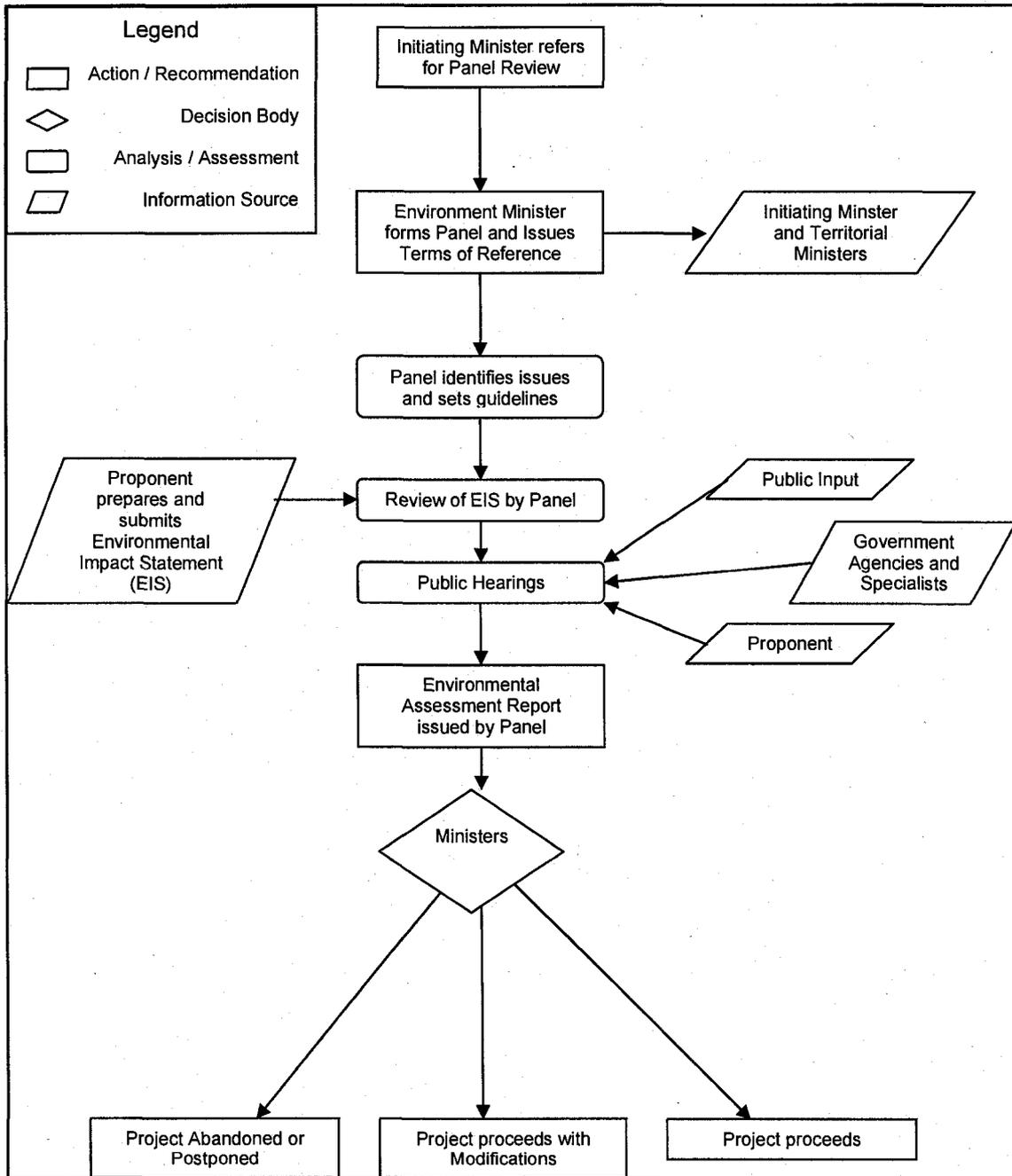
In most cases the panel review required the proponent to prepare and submit a full EIS. The Panel Review process also involved public awareness campaigns to notify affected communities regarding public hearings. There were two formats for public hearings: community hearings, which are informal with local groups and individuals invited to participate; and general hearings, which were more formal and technical and held in larger spaces (Everitt et al., 1988). The review panel became responsible for deliberating and considering the EIS, along with the public comments from the public hearings, and would make recommendations to the Minister of the Environment and the initiating department in the Panel Report. The final decision was left to the discretion of

the Ministers, although at times Cabinet would make the final decision if the project required a political decision to be made (Everitt et al., 1988). The Ministers and/or Cabinet were not bound to the recommendations in the report, yet panel reports were very influential (Everitt et al., 1988; Figure 4.5 - Schematic diagram of a Panel Review).

From a historical perspective, one can infer the limited opportunity for public input and participation in the Yukon's early EA processes, aside from panel reviews. Level I assessments, involving the screening of projects, provided very limited opportunity for public input. In most cases the public was not even made aware of applications as they were handled primarily behind closed doors by government officials (Fenge and Smith, 1986). And it is important to note that panel reviews were not carried out as frequently as level I and level II assessment types, which permitted greater public participation (Fenge and Smith, 1986). In level II assessments, the RERC as a standing third body improved the quality of the assessment and increased confidence in the system. However, Lang and Armour (1980) contend that the screening stage is the most important part in an assessment process, particularly for smaller projects; as small projects in conjunction with others, over time and space, may bring about considerable cumulative effects. The lack of public participation and input in the screening stage of EA in the Yukon is thus a limiting factor.

As mentioned previously, the panel review process provides opportunities for public input in the assessment process, yet despite such initiatives there have been concerns as to the degree to which the public's concerns were taken into account in development-related decision making by the Minister and government agencies

Figure 4.5 Schematic Diagram of Level III Panel Review



Based on Everitt et al., 1988.

(Conacher, 1988). In many cases, Yukoners have felt that their efforts and concerns were ignored and disregarded (Prystupa, 1994). This distrust was intensified further with the lack of disclosure of information pertaining to assessments, which could have provided a basis to assess the extent to which the public's submissions and concerns have been considered and addressed in the decision making process (Conacher, 1988).

As a result of pressures and reforms at the national level of federal EA processes, the Yukon EA process underwent changes. These changes were sparked by landmark court cases elsewhere in Canada, which reinforced the pressure for an EA process with a statutory basis. A statutory basis would require federal agencies to undertake and be consistent in the implementation of EA (Slocombe et al., 2005). The EARPGO was replaced by the *Canadian Environmental Assessment Act* (CEAA) in 1995.

4.2.3 The Canadian Environmental Assessment Act (CEAA)

The introduction of CEAA legally stipulated and required the Government of Canada to carry out EA on specified projects (DIAND, 2000). After CEAA's introduction, the FEARO became known as the Canadian Environmental Assessment Agency. CEAA continues to be applied to projects undertaken by the federal government, which require federal funding, the disposition of federal lands, or the issuance of federal authorizations (DIAND, 2000).

The inception of CEAA did not change the Yukon EA process a great deal in terms of procedures. It did, however, introduce new initiatives and scoping measures. For instance, the definition of environmental and socio-economic impacts was broadened to encompass impacts on traditional use of resources, and land and areas of archaeological

significance (DIAND, 2000). Similarly, CEAA introduced four types of EA: screening, class screening, comprehensive study, and mediation and review panel (DIAND, 2002). CEAA also outlined the consideration of cumulative effects and malfunctions and accidents in the screening phase of EA (DIAND, 2000). Moreover, CEAA dictated additional requirements for comprehensive study and mediation and review panels; requiring proponents to include the purpose of their project, the consideration of alternative means for the project, a commitment to implement follow-up programs and the consideration of impacts on renewable resources likely to impact current and future generations (DIAND, 2000). The new legislation also introduced four accompanying regulations: the Law list, the Inclusion list, the Comprehensive Study list, and the Exclusion list (DIAND, 2000). Furthermore, CEAA stipulated provision for public access to EA through the maintenance of a public registry (DIAND, 2000).

Despite the broadening of CEAA's definition of environmental effects, the emphasis continued to be on socio-economic impacts that were directly related to environmental impacts. Thus major socio-economic impacts associated broadly with development, such as drug and alcohol abuse and spousal abuse, were not considered within the scope of assessments (Fenge and Smith, 1986).

The CEAA process retained three levels of assessment similar to those established under EARPGO. Accordingly, level I assessments in the Yukon were reserved for small scale and routine applications, generally those involving applications for land use permits and leases, land use authorizations for mining and burning and timber permits, as well as type B water licenses, which were carried out by the Yukon Water Board (DIAND, 2000). Similarly to EARPGO, applications in level I assessments were often referred to

advisory committees made up of representatives from other federal departments and the CYFN. Examples of advisory committees to the EARPGO process include the Mining Advisory Committee and the Forestry Land Use Advisory Committee (DIAND, 2000). DIAND resource managers were responsible for completing EA screening, in which technical reviews of the project were carried out, along with the inclusion of advisory comments, and presented in a Screening Report, detailing the recommendations and final decision (DIAND, 2000). The final decision outlined whether the project was approved, what the mitigation measures were for the terms and conditions of licenses, permits or leases subsequent to regulatory requirements, or whether the project should be assessed as a level II assessment (DIAND, 2000). In CEAA level I assessments, as in EARPGO, there was little opportunity available for public input.

The Environment Directorate of DIAND coordinated level II assessments under CEAA, along with the RERC. Examples of projects subjected to level II assessment in the Yukon included hard rock mines, coal mines, major hydropower projects, and the construction of transmission lines, highways and pipelines as well as projects generally needing a type A water license (DIAND, 2000). Level II assessments consisted of either a screening or a comprehensive study. With level II screening, DIAND made the final decision on whether or not the project should proceed. DIAND also carried out public consultation in which the public would be notified through advertisements and information campaigns to participate in public meetings. Furthermore, DIAND prepared the screening report based on the information and the RERC's recommendations as well as the public input. The screening report was made available for public comment before DIAND issued the final decision.

Similarly to a level II screening, a comprehensive study report was prepared by DIAND; taking into consideration RERC's recommendations and public comment. This report was submitted to the Minister of the Environment and the Canadian Environmental Assessment Agency for review, as well as allowing another round of public input. The Minister of the Environment would decide whether the project should go back to the responsible agency or go to mediation and a panel review (DIAND, 2000). The length of level II assessments could range from 6 months to 2 years (DIAND, 2000).

Akin to level III EARPGO assessments, panel reviews and mediations were coordinated by the Canadian Environmental Assessment Agency and involved projects with the potential for major environmental impacts and which raised significant public concern (DIAND, 2000).

One stipulation of CEAA that improved on EARPGO in the Yukon context, was that it resulted in the inclusion of more information in the EA Report (formerly IEE under EARPGO), as it required the consideration of cumulative effects, through the combination of projects and activities over time and space. Also, as in the case of EARPGO, public involvement increased with the complexity of the project, but as a legislated process the opportunities for the public were protected and guaranteed.

In the past, assessments of small to medium-sized placer and hard rock mines were carried out less frequently. This phenomenon was largely the result of industry and development-favouring legislation such as the *Yukon Quartz Act* and *Placer Mining Act* and the *Yukon Placer Authorization* of 1993 (Slocombe et al., 2005). Yukon's NGO's have pushed for fuller assessments of such mining activities (e.g. Yukon Conservation Society's *Environmental Assessment Reform in the Yukon*, 2001). The inadequate

assessment of such mining activities lead to improper evaluations of associated cumulative effects of these small to midsize projects, when considered individually. The NGO's position was met with resistance from both government and industry, who felt that there were too many regulations in place from different agencies, corresponding to different acts (Slocombe et al., 2005).

In response to the mining industry's complaints about the inefficiency of the Yukon EA process, a steering committee was put together made up of representatives from the Yukon Water Board, the Yukon Chamber of Mines, the Yukon Government, and DIAND to evaluate and streamline the administration of EA process. The results were published in the *Administrative Procedures for Environmental Assessment of Major Mining Projects in the Yukon* in 2001; informally known as the Blue Book (Slocombe et al., 2005). The establishment of the Blue Book was a major change under the CEEA process in the Yukon as it provided certainty, clarity and consistency for the assessment and its requirements for proponents applying for hard rock mining operations requiring a Type "A" water use license (Environment Directorate, 2001).

Moreover, with the phase out of the Yukon Placer Authorization scheduled for 2007, a new regulatory regime for placer mining in the Yukon was established between the federal and territorial governments and CYFN. The new regime is designed to balance the objectives of promoting a sustainable Yukon placer mining industry along with ensuring the conservation and protection of fish and fish habitat, which support fisheries as prescribed in the federal government's *Fisheries Act* (Yukon Placer Secretariat, 2007). Likewise it is meant to be integrative, in that it satisfies the responsibilities and mandates of all three levels of governments and their subsequent

legislation and requirements. The regime is based on a risk management framework that incorporates the designation of Yukon's watersheds along with the evaluation of the degree of sensitivity of their aquatic habitats to human activities (Yukon Placer Secretariat, 2007). As a result, the regime provides a framework from which predetermined requirements for placer mining operations can be established for authorizations based on the affected habitat and the severity of impacts ensuing from the mining activity (Yukon Placer Secretariat, 2007).

Despite these changes to Yukon EA, mostly spurred by external and national influences, the most major and unique changes to the Yukon EA process have come about through internal changes, especially through devolution and land claim agreements.

4.2.4 The Yukon Environmental Assessment Act (YEAA)

The transfer of federal responsibilities to the territorial government meant that EA in the Yukon became the responsibility of the territorial Yukon government. Accordingly, Yukon was required to pass its own EA legislation. Initially this was the *Yukon Environmental Assessment Act* (YEAA), passed in March 2003, and applicable to all Yukon land after April 1, 2003.

YEAA served as a temporary EA process until the Development Assessment Process (DAP), which came to be YESAA, came into effect as prescribed under Chapter 12 of the UFA in November of 2004 (Yukon Government Executive Council Office DAP Branch, n.d.). YEAA mirrored the legislation of CEAA, consequently there was little change in the general procedures of EA during this interim period.

Modifications for the most part revolved around shifting responsibilities between the federal and territorial government such that DIAND staff were transferred to the territorial government, which now operated out of a separate territorial government branch, the Yukon Environmental Assessment Unit (Yukon Government Executive Council Office DAP Branch, n.d.). Moreover, the responsibility for major project assessments or level II type assessments was devolved from DIAND's Environment Directorate to the Yukon government's Executive Council Office DAP Branch. In addition, the RERC became known as the Yukon Environmental Review Committee and carried out the same roles and responsibilities as it did under CEAA (Yukon Government Executive Council Office DAP Branch, n.d.).

As a result of YEAA being applicable whenever the Yukon government was the proponent of a project, funded a project, licensed or authorized a project, or disposed land for a project, more EAs were conducted than in the previous EA regimes because there were more triggers prompting the Yukon government to carry out EA (Slocombe et al., 2005).

4.2.5 Chapter 12 of the Umbrella Final Agreement

Of particular significance to the history of EA in the Yukon, is the changes brought about through the UFA, specifically, chapter 12 of the agreement, which called for the establishment of an EA process tailored to the Yukon context. The UFA follows in the steps of other land claims which have established their own unique EA processes, including the Northeastern Quebec Agreement (1978), the Inuvialuit Final Agreement (IFA, 1984), the Gwich'in Agreement (1992), the Nunavut Land Claims Agreement

(1993) and the Sahtu Dene and Métis Agreement (1994) (Gibson, 2002a). The UFA is a recent land claim process, which has incorporated innovative elements and is applicable to the whole territory and to all levels of government (apart from the municipal).

Chapter 12 of the UFA calls for a single EA process, referred to as the Development Assessment Process or DAP (it is now commonly known as the *Yukon Environmental and Socio-economic Assessment Act* or YESAA). Chapter 12 outlines the basic tenets of the EA process for the Yukon. It stipulates that DAP be based on an arms-length assessment model and be applicable to all levels of government and all lands in Yukon; federal, territorial, First Nation, and private. It should guarantee First Nations participation and consider social, economic, environmental, and cultural impacts as well as provide and maintain public access and participation in the EA process. The DAP would also serve the purpose of harmonizing EA processes with land use and water permitting processes as well as provide consistency and clear guidelines and timelines.

In many instances, the UFA addressed the elements lacking in the previous EA regimes and therefore DAP was to reconcile some of those failings; establishing an EA process that would be inclusive, open and transparent, and ensure the role for First Nations to participate.

Following the signing of the UFA, CYFN and the territorial government, together with the Government of Canada, began drafting the legislation for this new EA regime (Hébert and Hilling, 2003). Numerous workshops and public consultations were carried out from the late 1990s to the early 2000s to contribute to the development of the DAP draft legislation as per chapter 12 of the agreement. The first draft was released in 1998 for public comment and later re-released in 2001, with the incorporation of changes and

concerns proposed from the 1998 release. These changes included clearer opportunities for public involvement, more streamlining and provision of certainty for proponents, the protection of confidential information, clarifying the enforcement of decisions, and the consideration of positive impacts in the EA process (DIAND, 2001b).

Yet, various concerns about the draft remained unaddressed from both the public and several First Nation groups, notably the White River First Nation, the Kwanlin Dun First Nation and the Liard First Nation, some of which felt that the draft fell short of the main principles of the DAP as outlined in Chapter 12 of the UFA (Hébert and Hilling, 2003). These shortcomings included an unclear interface with CEAA, duplication of assessment on the Yukon North Slope with the IFA and its related EA process, the lack of timelines, and inconsistencies between the designated offices (which later was addressed in the Act's regulations), the failure to include municipal governments at the decision making level, and the lack of effective enforcement mechanisms to ensure compliance (Hébert and Hilling, 2003).

The Act is subject to a statutory 5-year review to assess its effectiveness following its enactment. The first review is underway and was scheduled to be completed by the end of May 2008 (YESAA Review, 2007) but as of July 2008 the process was still ongoing. It will be a joint initiative between the three levels of government in the Yukon (YESAA Review, 2007).

The draft went through and was given royal assent in 2003, as the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA, 2003, c.7). The change in title, from the DAP to the YESAA, was meant to reflect better its intended purpose (Slocombe et al., 2005). YESAA came into effect on November 28, 2005 and replaced

both YEAA and CEAA. CEAA can still be applicable in three limited circumstances: for activities that are assessable under that Act but not under YESAA, for activities requiring an authorization from the National Energy Board, and for some panel reviews of projects (Canada Gazette, 2005).

4.3 Current Environmental Assessment in the Yukon – The Yukon Environmental and Socio-economic Assessment Act (YESAA)

The YESAA legislation mandates the assessment of environmental and socio-economic effects of certain activities in the Yukon and is applicable to all lands in the Yukon; federal, territorial, First Nation, municipal, and private.

4.3.1 The Administration of YESAA

The YESAA legislation called for the establishment of the Yukon Environmental and Socio-economic Assessment Board (YESAB). YESAB is based in Whitehorse and consists of a 6 member board and a support staff of roughly 30 people (YESAB, 2007). Three members of YESAB make up the Executive Committee (EC): one is nominated by CFYN, the other is nominated by the federal government in consultation with the territorial government, and the Chair of the EC is appointed by the Minister of the DIAND in consultation with the two appointed members. The other four members of the Board are nominated by the CFYN (2 nominations), the Yukon government and Minister of DIAND (DIAND, 2001a). The EC is responsible for guiding the assessment of large and complex projects (notably those listed in column 3 of the Assessable Activities, Exceptions and Executive Committee Projects Regulations). It is delegated the

responsibility to organize the collection of input and information generated from the public and technical experts.

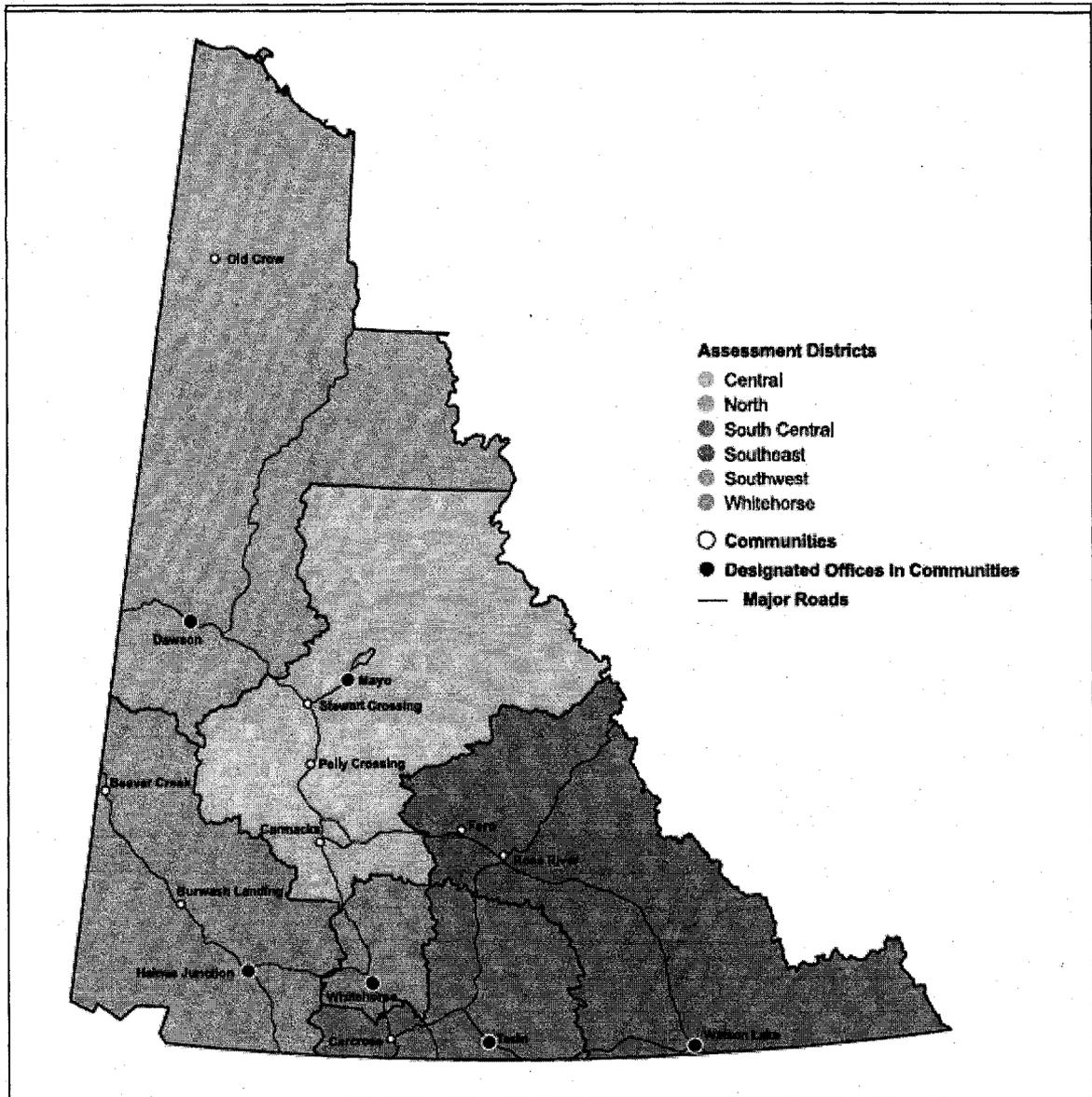
YESAB is responsible for a range of administrative functions, including the development of procedures and the maintenance of the public registry as well as producing material for the public and proponents including pamphlets, newsletters and guidebooks related to the EA process (YESAB, 2007).

The YESAA legislation also called for the establishment of Designated Offices (DO's), which serve to be accessible to the Yukon citizens. Accordingly, DO's are located throughout Yukon in six communities: Dawson City, Haines Junction, Mayo, Teslin, Watson Lake and Whitehorse (Figure 4.6). DO's are responsible for assessing the majority of small routine projects and maintaining a public registry with information pertaining to projects assessed within its district.

4.3.2 The YESAA Process

The general process of YESAA involves the proponent presenting a proposal according to information requirements established under YESAA to the relevant DO and/or the EC. During the course of the assessment a notice is issued for the submission of comments and input from the public and technical experts, after which the assessor(s), EC or DO, generate recommendations for the project and present this to the Decision Body (DB). The DB may be a federal government department, Yukon government department and/or First Nations government, depending on which is responsible for the project. A DB is required to accept, reject, or vary the recommendations submitted to them by YESAB or refer them back to YESAB for reconsideration.

Figure 4.6 Assessment Districts under YESAA and Designated Office Location



Source: YESAB, 2007.

Decisions made by the DB are set out in a decision document that is subject to the Decision Body Timelines Regulation. This document, along with all other EA-related documents and information is made available to the public via the public registry. The EC and the DO do not have decision-making authority. As the assessors, they are

responsible for concluding findings and making recommendations to a DB, which has the decision-making authority.

Once a decision document is issued, its information is passed along to Regulating Bodies (RB), responsible for issuing authorizations (permits, leases and licenses) to the proponent. The RB must conform to the terms and conditions set out in the decision document when granting authorizations (YESAB, n.d.c).

There are three types of assessments established under YESAA: DO Evaluations, EC Screening and a Panel of the Board review. The first is the DO evaluation. The majority of projects enter at this level and the screening of local environmental and socio-economic effects is carried out by the DO's assessment officer. The assessment officer is responsible for preparing the recommendation to the DB and then the DB decides whether to accept, reject or vary the recommendations.

In an EC Screening assessment, projects tend to be larger and more complex and may enter directly at this level or from the recommendation of a DO.

Panel of the Board review assessments are undertaken for projects with the potential for significant adverse impacts that raise significant public concern and/or involve untested technology. This type of assessment involves the establishment of a panel and results in detailed assessments. The exact process for a Panel of the Board review will vary depending on the nature of the project (YESAB, n.d.c). Likewise, the Panel's composition will depend on the location of the project; whether the project occurs mainly on settlement lands, non-settlement lands and other cases.

The EC is responsible for establishing the panel of the Board and selecting its members among the members of the Board, as well as designating one of the members as

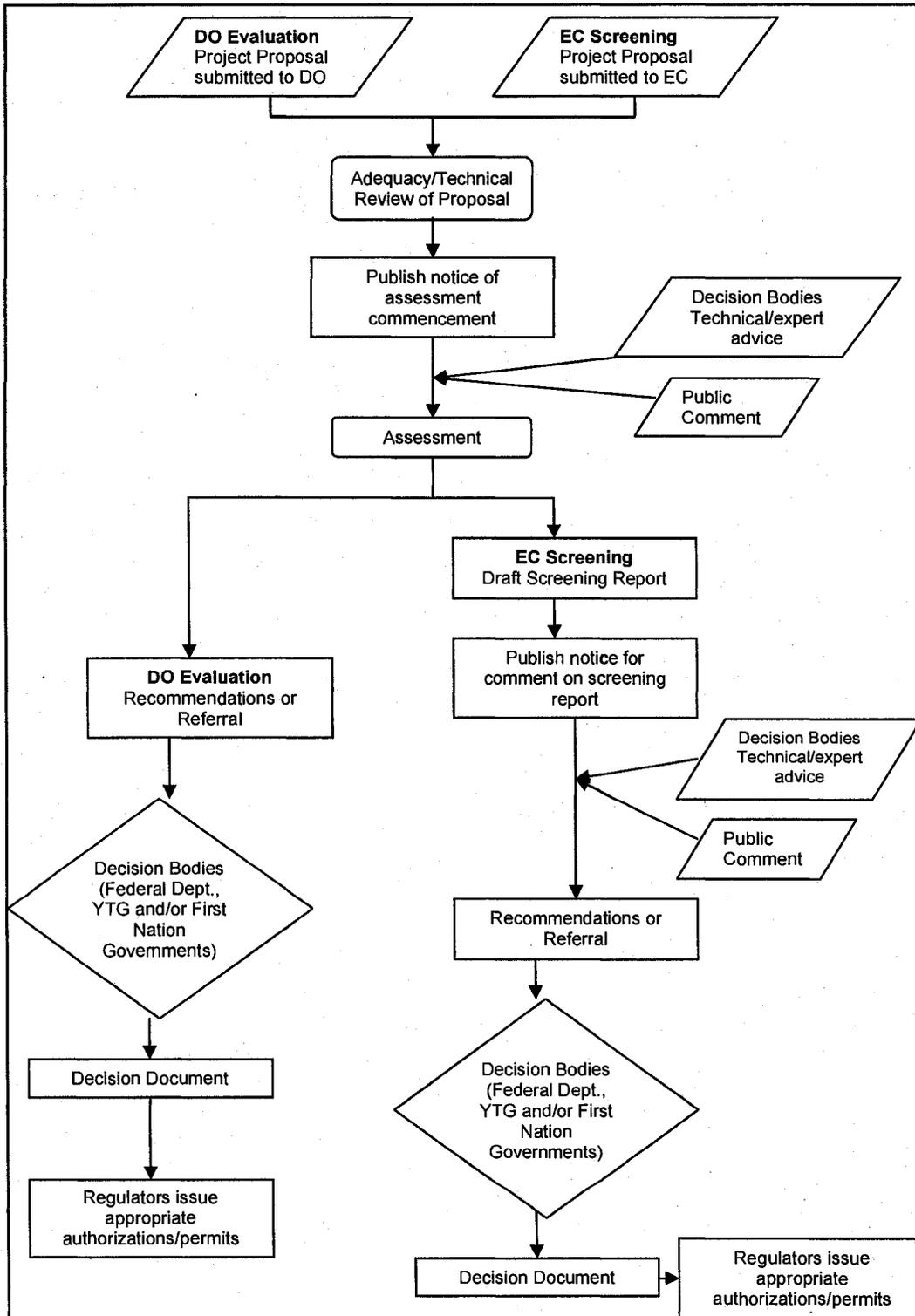
the Chairperson (YESAA Section 65). In the case that the project occurs on mainly settlement lands, two-thirds of the panel will be Board members nominated by the CYFN, with the other one-third of the members nominated by federal and territorial governments. Panels for projects likely to occur on non-settlement lands have one-third of their members nominated by the CYFN, with the remaining two-thirds nominated by the federal and territorial governments. In other cases, panels of the Board are made up with half of their members nominated by the CYFN and the other half nominated by the federal and territorial governments. In cases where the EC comes to an agreement with another authority to carry out a review of a project, a joint panel will be established. The agreement will stipulate the composition of the joint panel, the appointment of its members, and the selection of the Chairperson as well as the Terms of Reference and Rules for the panel procedures. (Figure 4.6 - Schematic diagram of the YESAA Process).

4.3.3 YESAA Highlights

YESAA brought about interesting changes in the way in which EA is executed in the territory versus the previous EA regimes. Apart from introducing a neutral third-party assessment body and instilling more certain and concrete timelines, the Act has introduced a number of innovative elements that are far-reaching in comparison to other EA regimes in the country.

YESAA is more comprehensive in that it calls for the assessment of both environment and socio-economic impacts separately. In many cases, socio-economic effects are considered only when they are the result of an environmental effect, which continues to be the case with CEAA. YESAA defines socio-economic effects as effects

Figure 4.7 The YESAA Process: DO Evaluations and EC Screenings



Based on YESAB, n.d.c.

on economies, health, culture, traditions, lifestyles and heritage resources (YESAA, 2003,

c.7). The assessment of socio-economic effects, on their own merits, enables the EA to address aspects of sustainability because it broadens the scope of the assessment. The Yukon government (YESAB, n.d.a) rationalizes the benefits of including socio-economic effects in the assessment process, as it allows one to anticipate and understand the benefits and consequences of a project on people and communities and the distribution of the 'real' benefits. Moreover, it assists in reducing uncertainties about socio-economic change and preparing people and communities to understand and anticipate such changes. It also allows for better project planning and decision-making that will benefit society.

Likewise, YESAA's broadened scope to include socio-economic effects separately is complemented by its consideration of both positive and negative environmental and socio-economic effects and their implications for key components of socio-ecological systems. This perspective resonates with systems thinking and notions associated with sustainability literature, as outlined in Section 2.2.2. This notion is stipulated in the Act's purpose:

To ensure that projects are undertaken in accordance with principles that foster beneficial socio-economic change without undermining the ecological and social systems on which communities and their residents, and societies in general, depend.

(YESAA, 2003, c.7s.5.2.e).

YESAA provides opportunities for public participation that are more open, transparent and accessible than the previous EA regimes. Public participation allows citizens to voice their concerns and express their values, and provides information to assessors in their determination of the significance of potential socio-economic effects of

projects. YESAA provides such opportunities through the YESAB Online Registry and the YESAB Document Registry.

The Online Registry is a web-based registry that maintains all documents related to the EA projects, making it easy for those with internet access to access assessment-related information and documents, including applications made, information collected throughout the assessment process, the recommendations from the assessors, decision documents and the lists of authorizations (YESAB, n.d.b). The public can also track project proposals in their area or anywhere in the Yukon. Similarly, the public can submit their comments, expressing their views electronically through the online registry. Proponents are able to submit their proposals via the registry. The Document Registry is a paper-based registry of all assessment-related documents; most often stored at DO's as well as at the YESAB head office in Whitehorse, and can be an alternative to those without internet access (YESAB, n.d.b).

Public comments can be submitted to the different levels of assessments, subject to timeframe windows. For DO evaluations, the public has 14 days to comment. The EC Screening assessment has a window of 30 days. Accordingly the opportunity for public input is greater with EC Screenings. However, with both assessment types, timeframe windows can be extended, depending on the nature of the project, its scale and the level of public concern it raises (YESAB, n.d.c).

Public participation allows for the values of local citizens to be taken into account in the decision-making process. This is particularly significant in the Yukon context and other Northern areas, where local values have been ignored and disregarded in the past and present have been provided little opportunity for input under previous EA regimes.

Moreover, the Yukon, like other northern regions of Canada, is not subject to a homogeneous general value system or vision; on the contrary it is quite diverse. Different groups can hold differing value systems and visions for the type of development that is acceptable in the Yukon.

Likewise, in an area like the Yukon where there is a lack of baseline data, personal experience and knowledge, as a result of historic ties and/or special interests, can provide a foundation to carry out assessment and can assist in understanding the environmental and social context that may be impacted by a project. By including people's values, views and personal experiences as well as scientific knowledge in the assessment process, decisions made in regards to development tend to be accepted better and understood by the general public in terms of the positive and negative implications that ensue from such decisions.

Another important element that has been introduced with YESAA is the guarantee of First Nations participation in the assessment process as well as the inclusion of aboriginal peoples' views and knowledge sets into the assessment. Through YESAA, First Nations are DB's for projects that occur on their settlement lands and are to be notified of such projects and those that may pose significant environmental and/or socio-economic effects to their community and/or settlement lands. First Nations can also request to be notified regarding any other project that they may be interested in (YESAB, n.d.d). Similarly, with EC submissions, proponents are required to consult with First Nations groups which may be impacted by their projects. Proponents must consider the need to protect the rights of Yukon First Nations and protect and when possible enhance their culture, traditions, health and lifestyles (YESAB, n.d.d). The participation of First

Nations, Reed (1990) contends, is crucial in EA, as First Nations people have a particular relationship with the landscape and this relationship is recognized and protected in their legal claims.

Notwithstanding First Nations secured participation and shared decision making authority, YESAA provides an opportunity for the inclusion and integration of traditional knowledge (TK) in the assessment process and related decision-making. This is also extended to non-aboriginal peoples of the Yukon as well as committees that possess local knowledge from experience. These knowledge sets are to be given full and fair consideration in the assessment process. There are provisions and procedures in place under YESAA that accommodate TK which may be considered confidential in a protected manner. The inclusion of TK, as stated earlier, assists in northern assessments as there are many gaps in the datasets. As well, it can assist in providing an authentic understanding of the context under consideration. TK tends to be more holistic and can improve communication and understanding between differing parties with different mind sets.

YESAA has also adopted initiatives to make the process more efficient. These initiatives include establishing and providing specifics for assessment requirements and procedures for all involved in the process, including proponents and the public. Proponents and the public now have a clearer understanding of the duration of assessments and when they can take up their role, thus improving on previous regimes which were highly complex, with a myriad of regulations and procedures, which left proponents uncertain (e.g. Everitt et al., 1988). Accordingly, assessments under YESAA average 30 days, with smaller projects being assessed faster than other types, mining

projects taking up to 10 to 20 days longer, and agricultural and land disposition projects being processed more quickly in comparison to the former EA regimes (Yukon Government Executive Council Office, 2007).

As a result, the YESAA legislation has introduced some innovative features. The process is set up to be more conducive to supporting collaboration between the differing parties: the public, First Nations, the federal and territorial government, all of which hold different views. These features exemplify innovative changes to the EA system in the Yukon that introduce principles of sustainability associated with EA.

4.4 Chapter Summary

This chapter provides an examination of the historical and current socio-ecological system of the Yukon. The Yukon, like other northern regions in Canada, has gone through dynamic changes in regards to environmental and resource management over the last few years. The Yukon's environmental history has been shaped and influenced by the extraction of resources, particularly non-renewable resources, for outside markets, leaving the impacts of developments to be borne by the local people. The recent political and environmental policy changes in the territory, have highlighted the discrepancies that were prevalent in the past, including the lack of local control and input in regards to development projects, the overriding control and decision making powers of the federal government in the north and the exclusion of First Nations peoples from actively participating in environmental and land related decision making. Both the process of devolution and the signing of the UFA have partly addressed these concerns, particularly when one considers the role of EA in the Yukon: often carried out from a national

perspective, ignoring local issues and concerns, often opaque to the public, and failing to secure First Nations participation.

Sustainability in the north is an important notion to consider, particularly in regards to environmental and resource management. An examination of the history of the northern regions, such as the Yukon, illustrates careless attention to the impacts ensuing from resource extraction and development to the local northern ecology and the socio-economic fabric of northern and traditional communities. The implications of future market demands and the increased interest in northern developments, coupled with the impacts derived at a global scale, such as climate change, will require principles of sustainability to be addressed in decision making. Consequently, EA can become an effective and viable tool that can be used to address issues of sustainability that are reflective of northern circumstances.

YESAA is one of Canada's newest EA processes and the most recent EA legislation in northern Canada. YESAA incorporates innovative features that support sustainability EA-related principles. The following chapter presents these findings and analyzes the data collected for this case study.

5 EVALUATION OF YUKON ENVIRONMENTAL ASSESSMENT REGIMES

This chapter provides an analysis of Yukon's environmental assessment regimes applying the sustainability-focused framework (Table 2.4). The evaluative framework, described in Chapter 2, highlights essential elements needed for EA processes to meet and achieve sustainability aims and emphasizes the significance of such elements to the northern context. In this way, these elements and principles should recognize and support northern issues and characteristics of northern socio-ecological systems, ensure accountability and social equity, promote active participation of all stakeholders, and provide opportunities for northern peoples' to articulate visions for the present and future state of their landscape (Everitt et al., 1988). The sustainability elements considered in the analysis include:

- (1) an accountable process that is neutral, transparent and consistent in its application,
- (2) a holistic approach that recognizes the socio-ecological characteristics, both past and present, of northern systems and the key linkages that support such systems,
- (3) active and open participation for the public and First Nations in such a way that allows the articulation of concerns and values to be identified and protected in the assessment process,
- (4) the integration of both local and traditional knowledge to the assessment process,
- (5) an efficient system that is streamlined and consistent in such a way that does not sacrifice the quality of assessments,
- (6) recognition of uncertainty and applies precaution in regards to unknown system behaviours and dynamics, lack of data and other unknowns,
- (7) integration of monitoring programs and adaptive management planning in order to contribute to collective learning and adaptation at both the project and EA-system level.

The chapter is divided into two sections: the first provides an analysis of the earlier EA regimes using the framework, while the second portion of the chapter provides an in-depth analysis of the current EA process in the Yukon. Aspects of each of the regimes are considered under each of the sustainability principles from the framework. The analysis is the result of information provided through in-depth interviews with people familiar and involved in the process, relevant documents, as well as further inquiry carried out by the researcher as deemed appropriate (See Appendix C for a Synopsis of Comments from Interviews).

5.1 An Evaluation of the Past EA Regimes in the Yukon

5.1.1 EARP (1972- 1984) and EARPGO (1984-1995)

5.1.1.1 Accountability

As the EARP process was a 'self-assessment' process, in which government departments were responsible for its application, it was often not implemented effectively, or at all. This was further complicated by the lack of a legal basis for the process that would ensure compliance of government officials to carry it out. As a result, the EARP process exhibited few measures supporting accountability.

Most often, government departments who were expected to undertake the EARP process were the proponents of development projects, and as a result the process was disregarded or decisions were often influenced by political motives. A First Nations resource manager noted distrust of this aspect of the process, as partnering between governments and proponents took place, influencing the assessment process and related decision-making.

With the introduction of the EARPGO process in 1984, government compliance in carrying out the process improved somewhat because of the introduction of formal procedures. The establishment of the RERC, under the EARPGO regime, added a measure of accountability to the process, as the committee played a neutral advisory role. However, the RERC was only involved in level II Screenings, leaving level I screenings to the discretion of government departments.

Moreover, neither processes was transparent, often involving closed door discussions, and information pertaining to the EA process was only made available at public review panels, which as noted in Chapter 4 were quite few, and through some I screening opportunities. But for the most part screening remained obscure and inaccessible.

5.1.1.2 Holistic Approach

Both processes exercised narrow and constrained scopes of assessments in their coverage. As federal processes, the processes were only applicable to projects and activities on or affecting federal land or responsibilities. This left many lands in the Yukon subject to development proposals without the application of an assessment process. EA did not apply to some mining and forestry activities (Everitt et al., 1988). Thus, both processes were inconsistent in their application in the Yukon, as well as in other northern landscapes.

The scope of the assessment of both processes concentrated predominately on environmental effects of projects. Social impacts were often only considered if directly related to an environmental effect. And most often, as a federal government representative stated, the assessment and inclusion of socio-economic effects was

reserved for large-scale projects at the panel review level. Likewise, assessments were focused on environmental and technical issues. Such a constrained scope in assessment limits the inclusion and consideration of all effects. And as a result, holistic assessments were not carried out and systems perspectives, including the recognition and consideration of implications for pertinent linkages, were not considered. This view can extend to the failure to recognize and consider cumulative effects brought on by projects and activities. Further, as a result of the government's discretion to carry out the processes, aspects of EA were often overlooked and ignored, as noted by a Yukon Territorial Government (YTG) representative.

5.1.1.3 Public and First Nations Participation

Under both processes, there was limited opportunity for public and First Nation participation. Opportunity for significant public participation was reserved to the public panel review phase. There was no opportunity available at level I screenings and limited opportunity at level II screenings. Input could occur following the RERC's re-screening of the IEE and subsequent to the release of the screening report, prior to the issuance of the decision report by DIAND. In such a case, public notice initiatives were undertaken including the generation of a distribution list of interested persons and groups for mail-outs, radio and paper advertisements, equipping local and Whitehorse libraries, and the offices of affected First Nations with screening reports for the public. Despite these initiatives, a number of interviewees commented that values and preferences of Yukoners held little importance and weight in the decision-making process. This was further influenced by the limited opportunities available for inclusion of public input in the assessment process. Moreover, both the EARP and EARPGO processes were exercised

by federal control, both in the administration of the process as well as in its fundamental basics. Consequently, it lacked local control, and consideration for input of local values and concerns.

First Nations may have been notified of project proposals depending on the nature of the project, as well as being invited to be part of the RERC, should the proposed project fall on and impact the traditional territories. But there was not a mandated requirement to secure their participation or the inclusion of their values, including TK, in either of the assessment processes. Moreover, in some instances, the consideration of First Nations values and concerns has been overlooked. For example, the Ross River First Nations claimed that there was no consideration of the impacts of the Ketzka Mine project on the First Nations' heritage resources during the assessment of the project prior to its development (Gartner Lee, 2000b).

As previously stated there was no mandated requirement to include First Nations' values and concerns in the assessment process. Accordingly, traditional knowledge was not formally integrated into EA under the EARP and EARPGO regimes. Likewise, the limited opportunity for public participation also limited the inclusion and integration of local knowledge into assessments.

5.1.1.4 Efficiency

The EARP process was vague as it lacked clear and explicit guidelines for carrying out assessments. This reduced the quality of the assessments as well as the level of efficiency. The introduction of the EARPGO brought about a formal description of procedures for the process. Yet both processes were lengthy and proponents with development proposals in the Yukon often complained about the lengthy process and lack

of timelines. In most cases, the back and forth dialogue that ensued between DIAND EA managers and/or RERC and proponents revolved around requests and re-submissions of information. Through the course of this dialogue, deadlines and timeframes were often not followed. Likewise, the length of the assessment processes was at times extended by requests for more information and study that required fieldwork; which in some cases could only take place in summer months, as noted by a First Nations resource manager. This impeded the process further. Also, as noted by both a YTG and a NGO representative, projects remained in the assessment process until changes and mitigations were suggested and accepted and the projects were made ready to proceed.

5.1.1.5 Uncertainty and Precaution

As noted in Chapters 2 and 4, there is a level of uncertainty associated with large mining projects in the North and consequently, precaution should be employed in assessments. The implications of such a degree of uncertainty revolve around not only environmental impacts but also social dynamics and impacts. For example, fluctuating world market prices of resources can influence mine closures and abandonment, leaving workers unemployed and creating 'bust' towns.

As both processes were left to the discretion of government departments to carry out, decisions were often politically based and consequently investigating the recognition of uncertainty and the adoption of a precautionary approach under such regimes, proves difficult, as most often projects were adjusted to be made able to proceed and decision-making was often clouded by the impetus for economic progress and development of resources.

5.1.1.6 Monitoring and Adaptive Management

Monitoring under both processes, as noted by several interviewees, was inadequate. This may have been the result of the lack of clear guidelines for the design and implementation of a follow-up program; securing and ensuring that monitoring activities and programs take place. During these two EA regimes, various violations took place as well as non-compliance with requirements by both the government and permitting agencies as well as proponents. There have been violations and failures to submit abandonment plans, as well as violations of carrying out and adhering to license requirements and payment of fines by proponents of past mining operations in the Yukon, including the B.Y.G. Mount Nansen mine (Gartner Lee, 2000a), United Keno Hill mine (Flather, 1989) and the Curragh Resources' Faro mine (Campbell, 1988; Padgham, 1987). Likewise, government and permitting agencies were lax in enforcing compliance and delivering penalties and in some cases amendments were made to licenses in order to address emergency situations as a result of failures of compliance, as in the case of the B.Y.G Mount Nansen Mine (Gartner Lee, 2000a).

Moreover, various mining operations were abandoned as a result of declining market prices and bankruptcy, leaving remediation undertakings to governments. The extent of such closures and abandonment can be considered in the case of the Ketzia mine, which was in operation from 1988 to 1990 when the gold mine ceased operations. Following the end of operations, the Ross River First Nation and local community voiced various concerns. These included human health and safety concerns regarding exposure and access to chemicals, geotechnical concerns over the maintenance and overflow of

tailing ponds, along with implications for surface and subsurface soil and water quality (Gartner Lee, 2000b).

5.1.2 CEAA (1995-2003) and YEAA (2003-2004)

5.1.2.1 Accountability

The introduction of CEAA established greater assurance and accountability in the EA process in the Yukon as it legislated and mandated government departments and permitting agencies to carry out EA. In this way, the inconsistent application of past EA by government authorities was addressed. Yet the assessment process still retained the 'self-assessment' quality of the previous regimes with government departments carrying out their own EA and being the final decision-makers. Likewise, the recommendations from EA were binding. In this way, the recommendations listed had to be carried out and there was no party with authority to vary recommendations.

5.1.2.2 Holistic Approach

The CEAA legislation broadened and guaranteed the scope of the assessment with the expansion of the definition of environmental effects to include social impacts directly related to the environmental impacts, including impacts to traditional use and lifestyles, and significant archaeological sites. Likewise, the consideration of cumulative effects in assessment screening was also included in the legislation. Yet as a First Nations resource manager indicated, the assessment and inclusion of cumulative effects continued to be weak. Also, despite the inclusion of impacts to traditional and heritage values, the scope of the assessment remained restricted. For instance, with the assessment of the Whitehorse Copper Development project, under the YEAA legislation, the consideration

of social and economic entities was not within the scope of the assessment of the residential subdivision development proposal. Excluded considerations included the need for social services such as schools, the implications of the development project on property values of existing homes in the vicinity of the development, and the future energy needs for residents of the new community.

With comprehensive study, mediation and review panel assessments, the scope of projects was more comprehensive, as assessments were required to consider the purpose of the project, follow-up programs, and impacts to renewable resources. This last consideration resonates well with sustainability principles, which emphasize the need to consider impacts to current as well as future generations.

The application of CEAA still applied to the federal lands, leaving other lands of the Yukon uncovered by an assessment process. With the introduction of YEAA, the interim legislation prior to YESAA, the legislation although covering all procedures and stipulations of CEAA, expanded the application of assessment to other Yukon lands, but again did not cover all settlement and non-settlement land. Despite the shifting of responsibility of EA from the federal government to the territorial government, assessments under both processes continued to ignore particulars of the northern context, as both pieces of legislation were derived from a national basis. This view was expressed by two YTG representatives and two consultants.

5.1.2.3 Public and First Nation Participation

The level of public participation under both processes increased with the degree of complexity of the project but still remained somewhat limited and non-transparent.

CEAA introduced intervener funding opportunities for parties and groups to effectively

participate in the process. Yet the process following much of the earlier procedures of EARPGO did not permit effective opportunities. A federal representative noted that there was little public participation under CEAA and believes that such hesitance may have been the result of a complicated process, in which the public did not know who the responsible authority was for a specific project to voice concerns. Moreover, CEAA's public registry system was not user-friendly and was difficult to use.

Although First Nations did not have guaranteed participation and decision-making powers under either of the processes, three First Nations resource managers expressed contentment with the degree of interaction and dialogue between First Nations and the government under the processes. They felt the processes allowed for more effective First Nation participation. Furthermore, in 2003 CEAA was amended to include TK as a noteworthy consideration in the assessment process. This secured and addressed First Nations' values.

5.1.2.4 Efficiency

A First Nation manager, two consultants and a YTG representative noted the rigorous nature of EA under CEAA and also articulated discontent with the length of the processes. As a consultant recalls, the process required 30 days for the responsible authority to be determined between the various government departments and then there was no set timeline afterwards, which could keep projects in the system for long periods of time. Issues of inefficiency in the mining industry in the Yukon were highlighted in Gartner Lee's (1999) Report to DIAND. The report, used for the Blue Book Steering Committee, noted a lack of adherence to timelines and deadlines by government, and a lack of clear guidelines and information requirements for projects entering the process,

such that the requests for more information and re-submissions could be lessened thereby increasing efficiency. Yet both the CEAA and YEAA processes were streamlined with the water licensing process of the Water Board, which ran concurrently to the EA process, thereby increasing some level of efficiency.

5.1.2.5 Uncertainty and Precaution

The recognition of uncertainty in the assessment process under CEAA often focused on untested southern technology operating in northern landscapes and the unknown implications of such. Gartner Lee's (1999) Report to DIAND highlighted several of the key technological issues associated with large mining projects that raised issues of uncertainty for government departments and the RERC. These issues included uncertainty around water balance, the delineation of permafrost, the stability of dams and waste rock piles. Again, as governments were the assessors and at times the proponent, it is difficult to attest the extent to which a precautionary approach was applied. Many projects were kept in the assessment process, as noted by both a NGO and a YTG representative, until re-adjusted with mitigation measures to make the project proceed. Likewise, governments often supported economic development and this could influence judgements and decision making that could foster a precautionary approach.

5.1.2.6 Monitoring and Adaptive Management

The stipulation for follow-up programs in the legislation, for comprehensive studies, mediation and review panels, was not a mandatory requirement for all types of assessments under the CEAA and YEAA processes. A federal government, a YTG and a NGO representative, along with two First Nations resource managers noted the

inadequate application of follow-up and monitoring initiatives. The interviewees noted several past projects that would have benefited from monitoring and follow-up programs, in such a way that environmental disasters could have been avoided, particularly with mine closures and abandonment. The interviewees voiced frustration with the two levels of governments' inadequate execution of monitoring and compliance activities.

5.2 The Yukon Environmental and Socio-economic Assessment Act (YESAA)

The introduction of YESAA in November 2004 brought about a more streamlined EA process in comparison to previous regimes. It was referred to as a one-window approach. This is particularly evident given its application to all lands in the Yukon, federal, territorial, First Nations and private, and a stipulated onus on all levels of government. Consequently, there is more harmonization between the different levels of government: federal, territorial and First Nation.

Having been guided and initiated by the UFA land claim agreement, YESAA encompasses and reconciles some of the limitations that were present in the previous regimes. One includes the lack of representation, participation and active involvement of First Nations in the process. Consequently, YESAA guarantees First Nations' involvement in the process and their role as a DB. In this way, the process allows for assessors and other DB's to become more attentive to and cognizant of First Nations' interests and concerns.

Likewise, the process provides an increase in opportunities for the general public to become more actively involved. This has been achieved through the creation of a functional online registry as well as the introduction of the DO, which allows for greater

accessibility, particularly in smaller communities. These features permit better integration and consideration of local effects and re-direct control to the local level. These features were absent in earlier regimes that were carried out under federal control and federally-based procedures, often overlooking local issues and input.

Moreover, the YESAA legislation stipulates the broadening of the assessment scope to include social, economic and cultural impacts, beyond those directly related to environmental effects; also lacking in previous regimes, and which continues to be lacking in the federal government's current EA legislation, CEAA.

Yet despite these progressive initiatives, as the result of land claim negotiations and changes to EA practice on a worldwide scale over the last 20 to 30 years, limitations are still prevalent in the Yukon's current EA process.

An interviewee familiar with the several past processes indicated that the current YESAA process was out-of-date before it was even implemented. The interviewee went on to explain that the drafting of Chapter 12 of the UFA was carried out during the EARPGO period and as a result YESAA retains many of the idiosyncrasies of EARPGO, most of which were addressed and removed in the CEAA legislation. Such idiosyncrasies revolve around the role of land managers, in the case of EARP and EARPGO and assessors under YESAA, who are delegated with the authority to determine if there are significant effects. With the introduction of CEAA, this delegation of authority was removed and projects determined to have significant effects involved a political decision, in which case the project was referred to a panel review. Moreover, another interviewee claimed that YESAA is nothing more than a process which everyone can accept rather than a process that seeks to achieve the maximum results.

5.2.1 Accountability

A significant improvement with YESAA is the establishment of the third party, YESAB, which is independent and arms-length from governments and former DB under the previous regimes. The establishment of YESAB increases confidence in the system, in how it functions and performs its mandate. YESAB also ensures the compliance of all parties with procedures, requirements and responsibilities in such an order that EA is executed properly. The YESAA process differs in comparison to the previous regimes which prescribed government officials to carry out a 'self-assessment process', in which case the onus fell on the responsible regulating authority (RA), which was also the DB.

Likewise, YESAA is more consistent in that it applies to all Yukon lands and to all levels of government. Moreover, with the establishment of YESAB, there is one consistent body to which concerns and opinions and answers to EA-related questions can be sent.

One hindrance of the YESAA process, which decreases the degree of confidence in the system, is the provision under the legislation that allows the DB to vary the recommendations proposed by YESAB and its DO's. Interviewees, notably two NGO's representatives and two First Nation resource managers, along with one federal government representative and a consultant, voiced dissatisfaction with this and asserted that the recommendations are not binding and can be overturned at the discretion of the DB. A First Nation resource manager went on to note that the absence of an appeal process makes things more frustrating, particularly in cases when YESAB and its DO's have recommended that a project not proceed. This depreciates the assessor's mandated

responsibility to make appropriate recommendations taking all necessary information into account, when such recommendations are varied by the DB.

5.2.2 Holistic Approach

The YESAA legislation is more consistent as it applies to all Yukon lands; federal, territorial, First Nations and private. Likewise, YESAA stipulates a broader scope for considerations in assessments, with the consideration of both environmental and socio-economic impacts. This is particularly significant as a holistic feature, as socio-economic effects under YESAA are considered on their own merits and in all types of assessment (e.g. DO evaluation, EC screening and panel of the board review). This stipulation differs from other legislation such as CEAA, which considers socio-economic impacts solely related to environmental effects. CEAA, in particular, tends to focus on socio-economic effects at the panel review level, as indicated by a federal government official. This comprehensive feature permits YESAA to be more adept at capturing the social and cultural realities of the North. It correlates with First Nations' worldviews which see the inherent connections between social, ecological and economic components in socio-ecological systems. Moreover, the YESAA legislation permits the consideration of both positive and negative effects, which highlights the contributions developments and other activities can have and allows communities to weigh the costs and benefits of projects on a more substantive platform.

Most interviewees, 13 out of 21, agree that the broadening of assessment considerations is beneficial and an improvement, especially in the northern context in contrast to past EA regimes and other regimes in the country. As a result, YESAA

displays the capacity to integrate innovative environmental mechanisms, as a federal government representative noted, such as ecological economics in which monetary values are assigned to ecological services. This could prove to be a beneficial tool particularly in the consideration of socio-economic effects.

The legislation is set up to be comprehensive, permitting the consideration of a wide array of aspects that were overlooked in the past. Yet concern still resonates regarding the full consideration and integration of all types of effects in the assessment.

Two First Nations resource managers, a federal government representative and two NGO's representatives stated concern over the full integration and inclusion of socio-economic effects in the assessment process. One interviewee stated that socio-economic assessments are not carried out in a way that adequately weighs the 'real' benefits of projects to local communities and Yukoners. This view relates back to the view that development in the north tends to direct benefits away from communities. Concern was also raised in regard to how socio-economic impacts are prioritized and weighed in relation to other effects.

As well, a YTG representative noted a general complexity associated with socio-economic assessment, in which a different type of question needs to be posed, one that questions the direction in which a development takes a community; whether that direction moves them away from or towards their community vision. Such a question differs from the standard questions posed in mitigation-focused EA, which focus on the types of changes the project will impose on the present environment. Likewise, a representative from a regulatory agency pointed out that more work is needed to fully understand and integrate socio-economic mitigations, as uncertainties and questions remain in terms of

how to carry out socio-economic assessment in general; what are socio-economic impacts and how they should be managed and how to integrate those mitigations in a permit. As a result of such complexity, there is little experience in Canada with socio-economic assessments.

This is further intensified with the lack of socio-economic data available at the local and project levels. This view was supported by Board representatives as well as two consultants interviewed.

Another discrepancy with YESAA is its narrow application to projects requiring authorizations from government permitting agencies. A YTG government representative stated that its application and consideration of which projects are assessable under YESAA, is too conservative and should be broadened to include other projects and activities that do not require a permit but may pose threats on the environment and communities. Yet another two interviewees noted that the application of YESAA is too broad and captures activities that are simple and do not require a full assessment, such as the mechanical gathering of a bush pile.

As a result, the enforceability of socio-economic mitigations recommended by YESAB and its DO's are restricted. Often such recommendations are overturned by government DB's, as there are few regulations that stipulate and ensure enforceability of such mitigations in the terms and conditions of licenses, permits and leases. For instance, major regulatory legislation such as the Lands Act and the Waters Act, do not address socio-economic matters and limit the inclusion of socio-economic mitigation measures from being fully applicable and enforceable in decision documents.

This is further intensified by the difficulty of governments accepting socio-economic recommendations from the Board. This difficulty, noted by two YTG representatives and a consultant, is linked to the Yukon's long standing history of mining legislation that often takes precedence, coupled with an economy driven by the development of non-renewable resources.

As an example of the resonating challenge of such integration, a consultant noted that socio-economic mitigations, for instance the provision to provide community-support personnel such as teachers and nurses, should not fall under the responsibility of proponents but rather governments who are required to provide such services and personnel. A YTG representative noted the possibility of introducing bilateral agreements between governments and proponents to address such provisions but noted that the process can be expensive and involve lengthy civil court procedures.

Therefore, the inability to embrace and enforce socio-economic recommendations can make the assessment and inclusion of socio-economic impacts meaningless, hindering the full potential of YESAA to apply a holistic approach to EA and one that addresses a range of sustainability components. Moreover, the ability of YESAA to be carried to its full potential as prescribed in the Act is also impeded.

Several interviewees, specifically four First Nations resource managers, two NGO's representatives, and both a federal government and a YTG representative agreed that the linkages between various social, economic and ecological effects are not considered but instead effects continue to be viewed in isolation. Systems thinking perspectives in EA, which promote holistic qualities, call for the consideration of effects in relation to one another and between system components. The challenge may be related

to the submission of comments from the individual departments in the YTG. The conclusions on systemic linkages can be made by the assessor, if he or she chooses, as noted by a First Nations resource manager. This failure to make valid connections and linkages of affected system components may be associated with the challenge of integrating the consideration of socio-economic effects into assessments in the Yukon, as outlined previously, particularly given the lack of available socio-economic data. Moreover, this inadequacy may also be the result of the general difficulty associated with moving beyond the conventional approach of EA, which continues to consider effects in isolation. However, many interviewees (12 out of the 21) agreed that there is value in carrying out integrative assessments. Despite recognizing the value of integrative assessments, a federal government noted the difficulty in moving beyond the conventional approach of assessment.

The lack of land use plans in the Yukon also reduces the capacity of YESAA to function at a comprehensive level. Three interviewees stated that YESAA has become somewhat of a substitute for land use planning in the Yukon given the lack of land use plans that would designate areas for particular land uses. Linkages to land use plans in the territory would allow for better decisions to be made, as opposed to basing decisions on a project by project basis. Also, several interviewees, notably two NGO's representatives, three First Nations representatives and a YTG representative would prefer to see land use plans in place so that there is a less ad hoc approach to land use decision-making.

Assessments carried out under YESAA, as a First Nations resource manager stated, tend to be carried out incrementally; on a project by project basis, leaving it unable to fully include and attest the extent of cumulative effects. As a result, the

potential to fully assess and account for cumulative effects is overlooked, as noted by two NGO's representatives and two First Nations resource managers. One interviewee voiced concern over the lack of consideration and assessment of cumulative impacts associated with the oil and gas exploration in the Eagle Plains area in the Yukon, after the Yukon government opened the area. Cumulative effects associated with 'intended' future developments should be considered, as argued by the interviewee, in order to assess the 'real' benefits and costs of operations in the area on a broad-based scale.

Yet the process is still in its initial stages and has the potential to become a holistic EA process that is able to fully encompass and address a wide range of impacts ensuring the viability of socio-ecological systems for present and future generations of Yukoners. It is, however, as 12 of the 21 interviewees noted, too early to assume its capability at a comprehensive scale. This is particularly evident with the need to fully integrate and accept socio-economic effects and corresponding mitigation measures into the assessment process at the evaluative stage, through to its acceptance and inclusion in the decision document.

5.2.3 Public and First Nations Participation

YESAA provides greater opportunity for the participation of the general public and First Nations to articulate concerns related to project development, in comparison to earlier regimes. The process is more open and accessible than before, with more avenues available for the public to get informed and to participate early on and throughout the process. This has been achieved through initiatives such as the establishment of the YESAB online registry, which provides access to all information pertinent to assessments

in the Yukon; all proposals, comment submissions, recommendations, the decision document and regulatory instruments. It also enables the public to track the progress of projects as well as to make submissions of their concerns via the registry. Also, there are notification options available through the online registry, which enable users to set up automatic notices regarding projects that would be of interest to them (e.g. proposed projects in their community). Other initiatives promoting assessment awareness include newspaper and radio advertisements. The establishment of the DO's, located in six districts of the Yukon, also furthers accessibility to information by connecting people from small communities with assessors directly involved in the process. This is particularly important as in the past assessors, were based out of Whitehorse and/or Ottawa.

A federal government representative and a First Nation resource manager noted that there is a somewhat better rate of public participation under YESAA in comparison to earlier processes and highlighted that this may be due to having a single entity which the public can deal with as opposed to a myriad of parties responsible for assessments in previous regimes.

YESAB has also taken initiatives to educate the public regarding their participation in the EA process and how they can articulate their concerns and values. YESAB has produced educational materials for the general public, proponents and First Nations, in order to further assist them in understanding how the process functions and how they can participate.

As a result of increased opportunities for public participation, local input reflecting local circumstances and values is better articulated. The inclusion and

consideration of values also provides insight into how Yukoners want the Yukon to look, and acts as a forum from which visioning can take place.

As a result of the UFA, YESAA now stipulates First Nations formal participation in the assessment process, whereas before they were partly shut out of the process. The First Nations' participation is now more active, through their role as a decision maker, exercising their equal decision-making powers with other levels of government. Yet the role as a DB is limited to projects that occur on their settlement lands, in which case First Nations receive recommendations from the assessors and decide whether to accept, reject or vary the recommendations and issue a decision document. In other instances where development may occur in or impact their traditional territory, First Nations will be notified, along with affected UFA Boards and Committees and have opportunities to express their views in the comment-gathering stage of the assessment process.

The YESAA legislation ensures the protection and consideration of impacts on the livelihoods of First Nations people and their communities as a result of developments. First Nations are able to articulate and ensure the needs of their communities are met and are not sacrificed, such as job opportunities as well as ensuring the protection of the environment and wildlife and traditional lifestyles. The ability to communicate and identify First Nations values helps itemize what is important to First Nation groups, particularly for First Nations that have not established 'a vision' for their community and lands. As one YTG official stated, some First Nations in the Yukon, such as the Kaska, the Champagne/Aishihik and Vuntut Gwich'in, have made significant strides at establishing common visions for their communities and what they want on their landscape. Having established this decreases controversy, as it fosters a sense of what is

acceptable and not acceptable on their landscape. Despite attempts at making the process more accessible to the public and having First Nations' rights legislatively entrenched, concerns have been raised.

There are still concerns regarding the technical basis of YESAA, which is predominately based on written, online submissions and online written. Some consider that the use of a computer and internet-based system hinders the inclusion of valuable participation, as some may not have access to a computer and/or feel anxiety in relation to computers and technology. In addition, this may disadvantage many First Nations people from fully participating, particularly the elders of the community who possess significant knowledge about the land, but as two First Nation resource managers noted, do not know how to read or write. This may be complicated further with the rate at which some members get notification, if at all, as they may be away at summer camps or out at trap lines without access to power or a computer, as both a consultant and a YTG representative highlighted.

The Yukon Online Registry (YOR) promotes transparency in that all comments are made publicly available including government's comments. Yet, several interviewees, in particular two First Nations resource managers, two consultants, and two NGO'S representatives, state that the transparency aims of YESAA fall short at the decision-making level in which the YESAB issues its recommendations and the DB begins drafting the decision document.

Three First Nations resource managers noted concern over the lack of communication between them and other levels of government with the onset and implementation of YESAA. They noted that despite the establishment of YESAA from

the UFA, that ensured First Nations participation, previous regimes allowed for more dialogue and the communication of concerns through forums such as the RERC and LARC. Moreover, such forums involved dialoguing, a contrast to the technological and written basis of YESAA's comment generating stage.

This lack of dialogue was also raised as a concern at the decision document stage, particularly when First Nations are not a DB (e.g. development takes place in their traditional territory not on settlement lands). Four First Nations resource managers voiced concern about having no input and involvement in the drafting of the decision document, which stipulates the terms and conditions for leases, licenses and permits. Thus, they are unable to engage in government-to-government dialogues and negotiations over recommendations. Such involvement would exercise their participation in managing the lands and resources in their territories, not just settlement lands. This frustration is further exacerbated when the DB government varies proposed recommendations from the Board and its DO's that addressed First Nations values, as there is no process for re-negotiation or an appeal. One resource manager suggested that another round of comment submissions or negotiations take place after the DB has released its decision document as a means of appealing the decision. A consultant noted that the First Nations were oversold on the idea of YESAA, with the certainty that they would have veto power over decisions, but this has not been the case.

Issues regarding the weight attributed to comments were also highlighted. Some interviewees, notably two First Nations resource managers, two NGO's representatives and a YTG representative, stated that the public is often left unaware of the extent that their comments influence decisions at the decision-making stage. The implications are

further exacerbated when YESAB and DO recommendations which address public concerns are varied by the DB governments. Four First Nations resource managers noted First Nations have also raised concern over the weight attributed to their comments and have felt that when the DB varies YESAB recommendations that take into account their values, their concerns are not addressed as much as they would like them to be.

Several cases were identified by two consultants, a regulatory agency representative, three First Nations resource managers and two NGO's representatives, which depicted this concern. In one instance, YESAB recommended that an application for an agricultural lease not proceed, given the sensitivity around a cultural heritage site and traditional uses in the area. The DB varied the proposed recommendations and allowed the agricultural project to proceed.

One interviewee stated participants in the process are left questioning how the DB can make such decisions and vary proposed recommendations that may address significant concerns raised by the public. They expressed dissatisfaction and frustration with DB's justifications and reasoning for not accepting YESAB and its DO's recommendations. The interviewee noted that their justifications are often vague, lacking evidence and/or scientific studies to indicate that their decision is correct.

First Nations have felt that their full participation in the assessment process is hindered by their lack of access to information and their reliance on government information. As two First Nations resource managers noted, this government information is not always easily shared with First Nations and they would prefer information from an independent source.

Moreover, two NGO's representatives and a YTG representative noted the absence of intervener funding available through YESAA; a provision that was available under the CEEA regime in the Yukon. Intervener funding could assist in alleviating some of the burden experienced by groups wanting to participate in the process and who do not have adequate capacity or resources to effectively participate.

Groups such as NGO's and First Nation governments have other commitments and responsibilities to their organizations subsequent to participating in YESAA. Intervener funding could assist groups in participating in more EA's, as opposed to having to decide between various developments applications, given their time constraints and other responsibilities.

And as such, the public participation process becomes weakened, with the efforts and concerns of the public and First Nations being overlooked or simply disregarded. At times the decision-making process can appear as nothing more than a political process, satisfying government mandates and intentions.

5.2.4 Local and Traditional Knowledge

YESAA stipulates the consideration and integration of First Nations' traditional and local knowledge into the assessment process, given equal weight alongside other considerations including scientific knowledge. Such provisions were absent in previous regimes in the Yukon (e.g. CEEA was amended in 2003 to include TK). The integration of TK into the process is a very important consideration, as the UFA secured the incorporation of TK into resource and environment-related management and decision-making, including EA. Likewise, First Nations are great observers of the land and thus

take note of critical changes to the landscape. Moreover, TK can feed into the value system by itemizing First Nation values, such as concern and knowledge relating to species such as rabbits, versus government information regarding rare species, as indicated by a Yukon government official.

YESAA also stipulates the consideration of local knowledge that is held by the citizens of the Yukon in the assessment process. Locals may contribute knowledge that has been the result of their experience living on the Yukon landscape. As a result, the submission of significant traditional and local knowledge to the YESAA process is not limited to First Nations, but also includes submissions from other residents of the Yukon. This can be useful in addressing data gaps for particular areas that local residents, trappers or outfitters who are familiar with the landscape may be able to reduce.

The question remains as to the degree to which TK has been integrated and incorporated into the process. From the interviews, very few interviewees (2 out of 21) were able to confidently admit the full integration of TK into the assessment process. This in part is the result of several general challenges associated with TK as well as disclosure clauses under YESAA.

There are several challenges related to TK that are encountered in the Yukon. As one First Nation resource manager stated, the Yukon government along with other agencies has yet to fully grasp the integration and application of TK, coupled with the internal challenges facing First Nations groups.

Challenges revolve around the use of such information, its interpretation, its availability and the format in which it is available, as well as integrating it into a useful form for EA, as noted by both a First Nations resource manager and an assessment

officer. TK, as a First Nation resource manager explained, can include sites on the land including burial and spiritual sites and other areas that have been used throughout the years and can also include cultural knowledge including language. Assessments are concerned with land-related TK, such as the long established rules on how to use the land, as noted by a First Nations resource manager.

Likewise, First Nations are also tackling internal issues regarding TK, such as the collection of such data, ownership issues and its dissemination. This is a challenge facing other First Nations outside of the Yukon as well. This correlates to First Nations financial and human capacity issues, which affect and influence the accessibility and the cataloguing of TK. The accessibility of TK is also waning with the decline and loss of elders, who possess such knowledge.

These, along with other factors, can influence the full integration of TK in the assessment process and obscure the complete evaluation of its integration for the purpose of this study.

YESAB has been developing a guidebook with protocols to assist with the integration of TK into EA. Likewise, the CYFN along with the Yukon First Nation Heritage Group, are working on a framework to more efficiently catalogue and share TK. It is hoped that this will provide a better process and protocol from which TK will be available in a more usable form for assessors. Several interviewees, in particular three First Nations resource managers, two YESAB representatives and three consultants, noted more time and more practice are needed to fully integrate TK into YESAA.

Moreover, the difficulty in fully evaluating the integration of TK into the YESAA process is complicated by confidentiality clauses under YESAA. Confidentiality clauses

ensure that First Nations can contribute TK to the assessment process without it being available to the public. The Board is delegated with the responsibility in determining whether the information is of a confidential nature. Confidentiality clauses address and ensure the protection of First Nations' sensitive issues related to the usage and ownership of TK. First Nations may fear that such information, if made available, could be misused, misrepresented, misinterpreted and/or infringe on ownership rights. Two First Nations resource manager stated that there may be issues of holding back the release of TK as a result of such trust issues. The confidentiality and privacy clause also influences the evaluation of the extent of TK integration into the YESAA process.

5.2.5 Efficiency

Of particular significance to improving efficiency with EA in the Yukon is the application of one single approach that is applicable to all lands in the Yukon and to all levels of government. The process is thus streamlined, without duplicating the efforts of the different governments. This is an improvement on previous regimes in which developments were subject to myriad different pieces of legislations and in many cases EA was inconsistent. The inconsistent and lengthy processes in the past, according to a consultant, deterred business from the territory. The interviewee went on to say that proponents have been frustrated with the implementation of different regimes in the Yukon over the short span of the last 25 years with EARP, EARPGO, CEAA, YEAA, and now YESAA.

Moreover, CEAA does not encroach on the application of YESAA, except in limited circumstances, such as in the case of projects that require an assessment under

CEAA but not YESAA, projects requiring authorization from the National Energy Board, and in the case of some panel reviews (Canada Gazette, 2005). This differs in comparison to other northern EA regimes such as the IFA, particularly with its application in the NWT, which triggers assessments under both the IFA and CEAA. Yet, despite the reduced infringement and applicability of CEAA in the Yukon following the introduction of YESAA, there is a duplication of assessment efforts in which both YESAA and IFA become applicable in the Yukon North Slope. This is because the IFA requires its assessment process to be applicable in the North Slope in addition to the YESAA process which applies to all of the Yukon lands (Canada Gazette 2005). One consultant noted the extent of duplication that can take place with EA processes in and around the Yukon, using an example of an offshore drilling development off the coast of the Yukon North Slope, which could trigger all three processes: YESAA, IFA and CEAA.

YESAA provides certainty, with clearly stated information requirements and timelines. In this way, YESAA allows for earlier project planning for proponents. For instance, proponents are required to consult with First Nations on whose territory their project may impact before submitting a project proposal to the assessment body. The clarity in requirements stipulates the responsibilities of each party involved in the process clearly; from the proponent, to the assessor, to the public, to contributing government agencies, to the DB's and to regulatory permitting agencies.

Similarly, the provision of timelines under YESAA is a significant feature, as a lack of consistent timelines for EA has always been an issue and concern to development undertakings in the north. Timelines provide certainty for proponents, something which they want, as noted by a number of interviewees. Timelines can be of importance to

proponents seeking fast and secured returns on investments for investors. Likewise, under previous regimes that did not have solid timelines, applications for projects were often kept in the process for long periods of time, which involved back and forth requests for and submissions of information between proponents and the government departments as well as the RERC, so that timelines were rarely abided by. As a result of the less than stringent timelines, projects were continually re-adjusted in order to meet requirements to have them proceed. With YESAA, the timelines are more stringent, enabling projects that do not meet initial information requirements to be moved out of the process sooner.

The timelines for public input under YESAA stipulate a mandatory 14 day timeframe for DO evaluations and a mandatory 30 day timeframe for EC screenings. With both types of assessments, extensions can be made to the timeframes, should there be a request for time for more input to be generated and collected. In terms of the timeframes established for input and commenting, there seems to be range of opinion. Some consider the timelines of the DO level assessments to be significantly tight and restricting. This view was particularly expressed by two First Nations resource managers and also by two YTG representatives who also expressed this view when it came to First Nations.

It seemed that resource managers from First Nations groups whose territories are subject to many development proposals expressed concern over tight timeframes. The challenge associated with the timeline is related to First Nations capacity issues. Some First Nations can find it difficult to compile comments from a variety of their internal government departments and submit them over the two-week period. Resource managers need to contact elders to gather pertinent TK and seek input from the wildlife, land

management, heritage personnel in the First Nations governments. In some cases First Nations' governments do not have a dedicated person for submitting comments in relation to YESAA applications, and as a result First Nations staff particularly their resource managers, are left to balance EA submissions in addition to their other responsibilities. This is further influenced by human resource and financial capacity issues, such as budget constraints and the availability of qualified staff.

YESAA does possess built-in extension options should there be a need to expand the period for input and gather more information, projects that may have elevated public concern and may pose great significant effects. A First Nations resource manager did note the importance of timelines for proponents and securing 'acceptable' development that can benefit their communities.

Short timelines may hinder the amount of input received and thus reduce the effectiveness of the process at capturing all pertinent information. Likewise, it may constrain the amount of information that is received in order to establish proper recommendations for contentious projects. As a YTG representative stated, it does not permit sufficient time to develop creative solutions which might assist in developing a common vision for the Yukon.

With the implementation of YESAA, the triggers list has been expanded. A First Nations resource manager and a YTG representative noted this as an improvement; one that allows more activities to be assessed that were not under the previous CEEA and YEAA legislations. However, two interviewees noted that the timelines for simple activities, such as the mechanical collection of a bush pile, can take an unexpectedly long time.

In terms of the assessment of large projects at the EC screening level, it is difficult to conclude how well and efficiently the process operates, given that there had only been two major projects assessed at that level up to the fieldwork period (i.e. the Carmacks Copper Mine Project and the Stewart Transmission Line, as of May 2007).

In terms of the level of communication since the implementation of YESAA there was a range of different opinions expressed in the interviews. Some, in particular a YTG representative, claim that it has created more dialogue between parties because they are now working with the same piece of legislation. This opinion was also shared by a federal government representative, who has seen more effective participation between parties. On the other hand, other interviewees, including three First Nation resource managers and two consultants, feel that there has been a decrease in communication since YESAA has come into effect.

As stated previously, First Nations feel that as a DB there is little or no dialogue and discussion between them and other levels of governments and consequently feel they have been unable to participate directly in the process (see Section 5.2.3).

Two industry consultants noted the lack of communication between the assessors and the territorial government permitting agencies and as a result, the process does not move smoothly. The lack of communication stems from each party carrying out their own responsibilities without effectively communicating with each other, as noted by an industry consultant, resulting in the disillusionment of the one-window approach.

A federal government representative stated that communication needs to be in place as it promotes dialogue and the exchange of ideas between advisors and assessors. It was suggested that a taskforce be established, separate from the YESAA process that

would provide insight into the EA process at a broader scale as opposed to a project by project basis (e.g. SEA). Such a taskforce, further, could also explore and address contributing and innovative tools for EA practice in the Yukon such as information and technologies, uncertainty, ecological economics, and land use planning.

A particular issue for YESAA's level of efficiency is its interaction with other regulatory processes, particularly the Water Board process. There is a lack of harmonization and disconnect between the two processes, as noted by both federal and territorial government officials. This lack of harmonization is the result of the Water Act not being amended to reflect the implementation of the YESAA legislation. As a result the Water Board continues to carry out the same functions it did prior to YESAA, which included coordinating EA and providing opportunity for public participation.

Consequently it was a process which involved the issuance of EA-related licensing along with a regulatory review. As a result, there is duplication of effort between the YESAA process and the Water Board process; decreasing the efficiency of both agencies in carrying out their mandate. One interviewee stated that the role and the purpose of the Water Board with the introduction of YESAA is dubious, given that the recommendations listed in the decision document through YESAA are reconciled and listed under a water use license, yet the water board licensing process must still be carried out as indicated in the Act. An interviewee involved in the drafting of YESAA, recalls that YESAA and Water Board processes should have been concurrent.

One interviewee, who had much experience with EA over the years in the Yukon, stated that the legalistic nature of the process, which mandates what can or cannot be examined and considered in the assessment process, is in some ways a limiting factor.

With a legalistic basis, the process becomes inflexible, with limited abilities and opportunities to change and incorporate new information and adapt to changes, apart from some minor details.

Furthermore, the introduction of standardized procedures and mitigations for specific industries and sectors will expedite the assessment process further, establishing guidelines for proponents that will enable better project planning. As noted by a YESAB representative, the Board has been drafting equivalent guidelines for different industries and sectors, called Standard Mitigative Measures, which introduce best practice initiatives for industry and promote better and early project planning.

Some interviewees, particularly two consultants and a regulatory agency representative, noted frustration with the lack of skills and experience of the assessors which make the recommendations to the DB. This at times decrease the efficiency of the process, in which unsuitable and unnecessary requests for information are made, which delay the process, especially for proponents. They stated that they can lack northern experience as well as technical experience with particular industries and as a result pose unnecessary questions and detailed recommendations. One consultant noted that too much information is asked for at times, which isn't necessarily needed in the EA in order to determine the level of significance of effects. Likewise, as a regulatory agency representative noted, recommendations can be made by junior level assessors which can be unrealistic. As a result, both consultants noted that they would like to see more engagement and discussion with the assessors as well as being involved in the drafting of the decision document to increase efficiency in the process. In contrast, an NGO representative noted, assessors have exercised substantial effort in proposing effective

recommendations that capture a range of interests, yet their proposed recommendations are often disregarded and overturned by DB's.

The issues that have arisen in regards to YESAA and its level of efficiency, are hoped to be addressed in the Five year review, currently in progress, with the involvement of a DB working group, made up of different government departments and First Nations governments, as noted by several of the interviewees, notably First Nations resource managers, representatives of regulatory agencies and consultants.

5.2.6 Uncertainty and Precaution

The extent to which uncertainty is recognized and the precautionary approach is applied in the YESAA process has been difficult to assess.

Several interviewees, specifically two NGO's representatives, a regulatory agency representative, two consultants and two federal and YTG representatives, agreed that there is more uncertainty associated with northern environments than there is with southern environments. Issues raised included a lack of baseline data and trend data for the north, as well as the largely unknown implications of climate change and permafrost melting and the infestation of pest species such as spruce pine beetle, on Yukon's ecosystems. There is also uncertainty associated with the suitability and functionality of southern technologies in northern environments.

The quality of data available in the Yukon is also a factor that influences the level of uncertainty. One interviewee noted the lack of information available regarding the functions of the Yukon's ecosystems and noted that there are still areas with less than adequate data available. Likewise, one First Nations resource manager went on to state

that data inventories can be 10 to 15 years old, further influencing the degree to which EA-related predictions can be made. Such data gaps, along with outdated data sources, decrease the ability of participants to submit comments and arguments supported by data which can strengthen arguments, as noted by one First Nations resource manager.

This is further amplified by the type of data that is collected and available. For instance, as stated previously, there is a lack of usable socio-economic data available to carry out adequate assessments. This is coupled with studies that are carried out by the government, which tend to focus on government mandates.

Furthermore, northern environments tend to have slower recovery times and display evidence of domino or downstream effects, which further elevates the level of uncertainty and the degree to which broad-based effects on the landscape can be predicted, as noted by a YTG representative.

In the Yukon, high levels of uncertainty are commonly associated with large mining projects, such as the Carmacks Copper Mine Project. Yet the evidence of the inadequate recognition of uncertainty is prevalent in the history of EA and evident in the Yukon landscape, in cases where there was the inadequate assessment of potential impacts of projects, particularly mining activities that resulted in unanticipated environmental effects, the result of 'rushed' assessments and political pressure, as noted by one federal government and a NGO representative.

Some interviewees, in particular two consultants and a regulatory agency representative and a YESAB representative, state that uncertainty is a reality as EA is about addressing uncertainty. A federal government representative stated that the basis of

EA is how well uncertainty is managed and the difficulty of such is at what point the uncertainties can be removed before a decision can be made.

When there is limited confidence in the potential effects ensuing from a project, environmental management strategies can be recommended and put into place to address the unanticipated eventualities that may arise. These mitigative measures include monitoring and adaptive management plans.

The assessment and consideration of cumulative effects is another means of addressing uncertainty. Yet many including two NGO's and YTG representatives and two First Nations resource managers, concur that the assessment and inclusion of cumulative effects is not addressed well under YESAA and therefore uncertainty is not recognized at this level.

YESAB officials stated the difficulty associated with the assessment of cumulative effects at a broader scale and across a specific landscape. The difficulty lies in trying to predict and determine effects and cumulative effects when there are no proposed project(s) for a given large area. The potential for oil and gas development in the Eagle Plains area is an example of the difficulty associated with assessing cumulative effects. One interviewee expressed concern, and feels that a broad based cumulative effects impact assessment should be carried out in that area, in response to the government's intent to further oil and gas explorations there.

Although there was a range of input on the recognition of uncertainty in the YESAA process, there was some discrepancy and unwillingness of some interviewees, to consider the precautionary approach in conjunction with the YESAA process. This illustrates the difficulty surrounding the term and concept. Both a federal and a YTG

representative along with YESAB representatives noted the term is very subjective and has different interpretations for different parties and individuals. As noted by two YTG representatives, it is considered to be too vague to be put into legislative language and thus is absent from the YESAA legislation.

Furthermore, as there is no reference to the term in the act, the Board and its DO's are not obligated to apply it. And as noted by one interviewee, the Board is only mandated under the Act to understand the potential effects, mitigate those effects, and propose recommendations. As a result, one can consider that the precautionary approach is not applied under YESAA, unless it takes place incidentally, in the case of assessors applying best practice and judgement or in the event of raised public concern and objection. Which leaves one to question, considering the scope of the mandate in which the 'notion' of applying precaution is not explicitly applied, then are the benefits and needs of Yukoners truly protected and secured? Or does YESAA continue to be an assessment process that is about getting projects approved, as one First Nation resource manager stated. This perception is strengthened when DB's can vary or reject the recommendations proposed by YESAB. Furthermore, as one interviewee noted, uncertainty and precaution around projects have become more about risk management, particularly when under the purview of the YTG, which may be assigning economic development mandates greater significance and weight in the decision making stage. This view was also expressed by two First Nations resource managers.

Thus the extent to which uncertainty is recognized and the precautionary approach applied in the YESAA process, depends on the DB and whether they choose to

adhere to YESAB's recommendations, should they reflect the recognition of uncertainty and the 'accidental' application of a precautionary approach.

5.2.7 Monitoring and Adaptive Management

Many of the interviewees agreed (16 out of 21) on the importance of monitoring in the effectiveness of an EA system. Without monitoring, one consultant, along with a First Nations resource manager questioned the aim of EA.

Monitoring ensures that mitigation measures are carried out as indicated in decision documents and licenses, leases, and permits, and ensures the compliance of the proponent in addressing potential effects deemed of concern from the EA process.

As noted by six interviewees, monitoring is a fundamental process that is not limited in importance to northern EA processes but is fundamentally important to all EA processes across the country. Yet as a federal government official noted, they are not carried out enough in Canada. There are, however, instances and particularities of the north that make monitoring a beneficial element for northern EA processes. Such particularities include the monitoring of new technologies from the South operating in northern environments, the implications and effects of climate change on the landscape, and project activities and subsequent changes to permafrost. Consequently, monitoring can be especially valuable to northern EA.

YESAA provides provisions, under section 110 of the Act, for monitoring to be recommended by the DO, EC or panel of the board. The inclusion and integration of a monitoring program, as with all recommendations set forth by YESAB, is left to the discretion of the DB and whether or not they choose to accept the recommendation. As a result the execution of a monitoring program for a project(s) is not the responsibility of

YESAB but rather the responsibility of DB's and other authorizing and permitting agencies. Most often, finances are a concern, in terms of who will be financially responsible for carrying out the monitoring program along with ensuring compliance. This view was highlighted by both a regulatory agency and a YTG representative.

Likewise, issues revolving around political will were also highlighted. As noted earlier, monitoring is often not carried out or has not been done properly and effectively by the federal government. The evidence of this failure is seen when considering past projects in the Yukon, which resulted in improperly executed projects that left substantial impacts on the landscape and resulted in costs to Canadian tax payers. If proper monitoring programs were in place along with the integration of adaptive management initiatives and measures, then perhaps changes and devastating alterations to the environment could have been avoided. The lack of effective monitoring in the Yukon has resulted in major clean up operations particularly as the result of mine closures. Several examples were shared by the interviewees that highlight this point, including two First Nations resource managers, and three YTG representatives. Likewise, some government agencies can be stricter than others when it comes to enforcement and compliance. The Department of Fisheries and Oceans was noted by one interviewee for being one of the more diligent agencies responsible for monitoring and enforcing compliance. The interviewee went on to exclaim that regulatory agencies need to be diligent in ensuring proponents are following through on the requirements set out in their licenses, permits and leases, so that past inconsistencies and carelessness can be avoided.

As noted by two First Nation resource managers, monitoring programs are often proposed for large projects such as mining and forestry operations, and are not often

suggested for other projects such as agriculture, which may pose effects to riparian ecosystems. Moreover, the monitoring of socio-economic effects was raised as a concern by another First Nations resource manager, who expressed concern over the lack of monitoring of socio-economic effects as a result of the inadequate inclusion of socio-economic mitigation measures in decision documents. Monitoring of socio-economic effects in communities experiencing the introduction of 'new money' could be beneficial to highlighting and adopting measures to address issues such as unhealthy behaviours, violence, substance abuse and other implications.

Moreover, monitoring programs should extend beyond simple compliance and enforcement and consider the linkages between actual and predicted effects, which tend to be overlooked, as noted by a consultant interviewee.

Another issue raised has been the role of First Nations in EA-related monitoring activities. Three First Nations resource managers noted capacity issues of their governments, not having adequate staff to conduct monitoring activities on their territories. Likewise, they raised concern over the lack of information sharing pertaining to monitoring by permitting and regulating agencies with First Nation governments and resource managers.

Lack of collaboration also extends to the actions and responsibilities of the assessment body, YESAB and the permitting agencies, which in most cases are the DB. Their subsequent responsibilities and affiliated acts and regulations establish a disconnect between the process of carrying out EA and that of monitoring. One regulatory agency representative affirmed this, by stating that EA and monitoring are and should be considered separate processes. Yet, EA literature indicates that effective EA should

involve the integration of both EA and monitoring initiatives (e.g. Arts et al., 2001; Holling, 1978; Gibson et al., 2005). As one YTG interviewee highlighted, EA is seen as something that needs to be done, and monitoring is seen as another separate step, another hassle.

The extent to which monitoring activities benefit both the process and project level is further hampered by the quality of information available. A lack of understanding of the socio-ecological system components and their functions, along with data gaps prevalent in northern settings can hinder the effectiveness of the assessment, as noted by a NGO representative. This is particularly important when considering actual effects versus predicted effects. Quality data provides for effective monitoring that can feedback into the system and allow for re-adjustment and better decision-making and planning.

Although there are provisions to make the recommendation for monitoring under the YESAA legislation, there is no stipulation for adaptive management mechanisms to be incorporated in such a way that the process itself can re-adjust to changing circumstances or new information. This lack of flexibility may be due to the legalistic nature of the YESAA system (Considered in section 5.2.5). Consequently, the availability and application of feedback initiatives in the system is questionable given the lack of indication of such in the Act. As noted by one interviewee, the Board relies on governments to provide feedback in order to re-adjust, yet governments are not required to provide such information. Six interviewees, including two consultants, a First Nations resource manager and a Federal government and a NGO representative noted the value of a feedback process. Should that information be available, it might provide new information and better planning standards for future projects and recommendations. Such

feedback initiatives and new information could improve and establish best practice measures and therefore promote learning of environmental and resource planning and management.

5.3 Discussion

The data collected through the interviews and subsequent research highlights the presence or lack of, elements and principles of sustainability within the Yukon's EA regime overtime. Through the last three decades there have been substantial changes to EA processes in the territory as a result of both external and internal factors. The devolution process has shifted control away from the federal and distant government to the local and territorial level. Moreover, the UFA has prompted the creation of an EA process more suited to the northern and Yukon context, one which emphasizes and ensures First Nations participation and the inclusion and recognition of northern values, which often reflect a closer relation between the human and natural environments.

Understanding and evaluating the Yukon's EA system from a historical perspective allows one to understand the significance of changes that have taken place and assists in identifying elements that do and do not support sustainability initiatives within the Yukon and in a northern context.

Table 5.1 presents a graphic representation of the evaluation of Yukon's past and present EA regimes in accordance with each of the sustainability components as described in the evaluative framework (Table 2.4).

Accountability

The element of accountability, as a sustainability provision for EA processes, has improved to some degree over the course of the last three decades in the Yukon. Under the previous regimes, with federal government departments as both the assessors and proponents of projects, the EA process and the level of confidence in it were limited. Government agendas and mandates can cloud the process, resulting in decisions that are not fair and do not support appropriate benefits to local communities. The establishment of the RERC by DIAND under the EARPGO regime improved the level of accountability somewhat, in that the committee became a relatively neutral advisory body; proposing recommendations to the responsible government departments. Yet as the RERC only made recommendations in the case of level II screenings, level I screenings were not assessed with a level of accountability. This is particularly significant as level I-type screenings were carried out more frequently (e.g. Fenge and Smith, 1986).

The establishment of YESAB and its DO's improves and ensures integrity in the EA process, as an arms-length body responsible for assessing all the types of assessments. Likewise, YESAB ensures conformity of all parties to the procedures and practices laid in the YEAA. This differs from the previous regimes which were based on a self-assessment model, particularly with the EARP and EARPGO regimes, in which the application of EA was left to the discretion of federal government departments.

Moreover, establishing EA legislation, as in the case of CEAA, YEAA and YESAA, ensures the execution of EA for specific projects as it is prescribed by Canadian law. Similarly, EA legislation and associated regulations outline and define the roles and

Table 5.1 Evaluation of Yukon's Environmental Assessment Regimes Past and Present - under the Sustainability-focused framework

Sustainability Principles/ Elements	EARP and EARPGO	CEAA and YEAA	YESAA
<i>Accountability</i>	- (Level I) + (Level II and Level III)	+	+
<i>Holistic Approach</i>	-	+	+
<i>Public and First Nations Participation</i>	- (Level I) + (Level II and Level III)	+	++
<i>Local and Traditional Knowledge</i>	-	+	++
<i>Efficiency</i>	-	-	+
<i>Uncertainty and Precaution</i>	-	+	+
<i>Monitoring and Adaptive Management</i>	-	+	+

<u>Legend</u>	
-	Element Absent
+	Recognition and evidence of element in theory
++	Recognition and evidence of element in theory and practice
+++	Thorough implementation of element/principle

responsibilities of all involved parties. Yet there is a greater degree of accountability with the YESAA legislation, as the CEAA and YEAA legislation still remained based on a self-assessment model.

Nevertheless, having YESAB simply as an advisory body and whose recommendations can be varied and/or overturned by the DB, reduces the levels of both integrity and confidence in the Yukon's EA system. If the assessor has executed extensive effort to address all potential socio-economic, cultural and environmental effects and propose the most appropriate recommendations for a project from a neutral perspective, the DB should not be able to overturn such recommendations. Political motives and agendas can still permeate the process, influencing the final decision and decreases the level of accountability in the process.

Holistic Approach

The application and scope of EA in the Yukon has improved and broadened over the years under the different regimes. The implementation of YESAA has broadened the coverage of assessment in the Yukon to all Yukon lands; not solely federal lands as in the previous regimes. This allows for a more holistic approach in the consideration of cumulative effects and the potential to link the assessment process to land use planning initiatives and plans.

In addition, previous regimes, particularly EARP and EARPGO failed to apply a holistic approach to assessments, as EA were carried out employing a narrow scope and were predominately focused on environmental and technological effects, with little consideration given to social and First Nations' affected values. Likewise, as national

processes, the previous regimes failed to account for local impacts and values of local northern communities. As a result, the previous regimes failed to address the context-specific nature of the Yukon, recognize and maintain the key linkages in the socio-ecological systems of the north. Evidently, developments often derived benefits for southern regions and businesses, leaving local communities impacted by development-related decisions. This phenomenon reinforces the benefits-impacts paradox experienced by northern communities. Moreover, assessments tended to focus on regulatory requirements and acceptable levels as dictated in regulatory regulations. Thus projects were allowed to proceed in respect of 'allowable' levels of environmental change. Development remained to be assessed at a project-by-project level and consequently cumulative effects were not considered within the scope of the assessment, and connections with land use plans were lacking.

The implementation of CEAA and YEAA broadened the scope of assessments to include impacts on traditional use areas and lifestyles and archaeological sites, but such impacts were considered only as impacts directly related to an environmental effect. Consequently, the consideration of linkages of the socio-ecological system was narrowly carried out. CEAA and YEAA did however promote the consideration of cumulative effects in legislation as well as a temporal, generational consideration of impacts to renewable resources, which resonates well with sustainability literature. Yet both Acts continue to fail to address the realities and circumstances of the north and its socio-ecological systems.

With the implementation of the YESAA legislation, the scope of assessment has been broadened and supports a holistic approach, yet the degree to which a holistic

approach has been adopted and employed through all stages of the process to the final approval is limited. The legislation is set up to be holistic and comprehensive in its assessment. This is reinforced in the title of the legislation, which requires the assessment of not only impacts on the environment but also socio-economic impacts on their own merits. Additionally, YESAA promotes a greater consideration of both positive and enhancing effects that a project may have on a community's economy as well as on human health and lifestyle. The legislation also supports a systems perspective in its assessment of implications for socio-ecological systems, as stated in its purpose, which seeks to benefit socio-ecological systems without undermining the essential system linkages. Yet, securing recommendations that support a holistic approach, that is one that will ensure the mitigation of social, economic and cultural effects, are hampered by the reliance on regulatory processes that stipulate terms and conditions for licenses, permits and authorizations, which do not capture social, economic and/or cultural impacts.

As a result, DB's often overturn proposed socio-economic mitigations and the weight attributed to these concerns at the decision-making stage is questioned. Without proper provisions in place, it will be difficult to secure and ensure 'real' benefits to local communities and Yukoners are sought after. As a result, the best interests of Yukoners which may be sought out in the scoping and recommendation stages of YESAA may not be addressed due to legislative gaps.

Moreover, linkages between system components still need to be made and more practice is still needed. This is particularly evident in the Yukon case with a lack of meaningful socio-economic data. As well, a more thorough consideration of cumulative effects, particularly in light of intended projects is needed.

Public and First Nations Participation

The opportunity for public and First Nations participation has also increased over the years. Under the previous regimes, there were limited opportunities to participate in the process unless members of the public and First Nations were invited to participate, and most often their participation was limited to level II and level III screenings. With CEAA and YEAA the opportunity for participation increased with the complexity of the project. But for the most part, level I-type screenings involved closed-door negotiations between the assessors, the government and proponents and was not transparent. The CEAA did introduce a public registry system but it was not user-friendly. As a result of the limited opportunities for public and First Nations participation, the previous regimes failed to secure and address local input and concerns along with First Nations concerns and values and thus were not conducive to the particulars of the northern context. Moreover, the previous regimes did not permit a dialogue to ensue regarding sustainability and the suitability of development projects for the population that would be directly impacted by such developments.

The YESAA legislation stipulates greater provisions for public participation and accessibility to EA-related information. This is most evident with creation of the online public registry, which increases the level of transparency in the system. YESAA is more open and adept at capturing and addressing the wide ranging values that are prevalent in the Yukon's diverse population. This is also significant given the gaps in socio-economic data. Moreover, the increased level of participation and dialogue assists in sustainability dialogue, when it comes to how communities want their landscapes to look at present and into the future.

The creation of DO's also assists in making the assessment process more accessible to the public and proponents, by bringing the process closer to the people. This is particularly important in the Yukon given the small, yet dispersed population. This is also an important element given that in the past, the assessment process was carried out from Whitehorse or, in the case of panel reviews, Ottawa.

Likewise, subsequent to the UFA, YESAA guarantees the participation of First Nations in EA-related decision-making, as carrying out the DB role for projects in their settlement land. YESAA also secures the inclusion and consideration of First Nations' values and lifestyles.

Yet despite these improvements, issues and concerns remain and the element of public participation has not come to full fruition, particularly from a sustainability perspective. Despite the increase in the level of transparency, it is lacking at the decision making stage, when the proposed recommendations are being deliberated. Likewise, the degree to which socio-economic values and concerns are weighed at the decision making stage is also questioned; particularly when a DB overturns recommendations that support and address socio-economic impacted values. This is most often the result of lacking legislation that addresses the protection, enhancement or maintenance of wide ranging socio-economic values of Yukoners. Consequently, the values of the public and First Nations may not always be addressed and maintained in the final decision document. In many instances, the DB can give precedence to industry and may be preoccupied with satisfying economic development strategies and mandates, which also can dilute public values and their efforts in the process.

The protection of First Nation's values and views through the assessment process, as outlined in the UFA, is at best guaranteed if a First Nation is a decision maker and the project occurs on their settlement land. Should development occur in or impact their traditional territory, First Nations will be notified, along with affected UFA Boards and Committees and have opportunities to express their views in the comment gathering stage of the assessment process. In some cases, they may be against a project but the DB can approve it despite First Nations concern. First Nations are not given opportunity to dialogue with the other levels of governments in the drafting of terms and conditions for permits, leases and authorizations for activities in their settlement lands. There is also no appeal process which they could use to discuss with the government their chosen actions and ensure that their concerns are dealt with. This neglects the co-management principles stated through land claim agreements and devalues the role promised to First Nations in the UFA.

Local and Traditional Knowledge

Under the previous regimes, the consideration of local and TK in the assessment process was not mandated and consequently was rarely incorporated and addressed within decision documents. This may have also been affected by the lack of First Nations participation in the process. In 2003, CEAA was amended to include TK as a valid consideration in the assessment process; consequently YEAA had the same provision. But under YESAA the consideration of local and TK is mandated to be considered in the assessment process and given equal and fair consideration alongside scientific knowledge. YESAA also outlines the Board with the responsibility to delineate whether

such knowledge is of a confidential nature. In this way the trust issues regarding the disclosure of TK in the past between governments and First Nations are partially addressed. Yet despite the provision for its inclusion in the assessment process, there are internal issues that need to be addressed from within the First Nations governments and communities in regards to the collection, usage and disclosure of such knowledge. The full integration of TK in YESAA is therefore hampered by these internal issues, yet the legislation provides a solid basis from which the knowledge can be incorporated signifying the shared role of First Nations in the assessment process. Likewise, the inclusion of TK can contribute to data gaps that are present in northern databases.

Efficiency

Efficiency becomes an important balancing act in EA: between ensuring certainty for proponents in such a way that it makes for better planning and does not deter economic activity which may benefit and enhance the socio-ecological systems of the Yukon, and simultaneously, the process should be adept at receiving all necessary information from the public, government experts, First Nations and organizations, to make comprehensive and acceptable recommendations that can be captured in decisions. Efficiency in the assessment process should not compromise any of the sustainability components; social, economic and environmental over the other.

In past regimes, the assessment process was inefficient; lacking clear guidelines and timelines. This was particularly the case with the EARP process. The implementation of EARPGO, through the Guidelines Order, improved the process to some degree, clarifying the procedural guidelines. Yet the process remained lengthy and the quality of

assessments was poor, as projects were kept in the process and re-adjusted through mitigation measures in order to proceed. Consequently, the earlier regimes tended to execute assessments from a conventional perspective – one which was more reactive and focused on approving project proposals. Consequently, earlier assessment processes compromised thorough scoping and best planning and project design-related decision making. Even with the introduction of CEAA and YEAA, the process continued to be prolonged – again, projects were kept in the process and continually ‘re-adjusted’ to be made to be able to proceed. Yet, despite the length of assessment processes under earlier regimes, the processes were better harmonized with the water licensing process, administered by the territorial Water Board.

With the introduction of YESAA, there is a more solid establishment of timelines and process requirements for all parties involved, although there are built-in flexibility options, should there be a need for an extension. The option of extensions provides an opportunity to ensure the effectiveness of the assessment process in attaining all necessary information in order to make a valid decision. Yet, in the case of some First Nations governments the timelines remain too tight, particularly for collecting supplementary information in order to formulate solid input into the process. Likewise, the decline in government-to-government communication present in the earlier regimes is lacking in the new YESAA legislation. And inefficiencies still remain, particularly in regards to duplication of efforts on the Yukon North Slope as well as the actions and licensing process carried out by the Water Board.

Uncertainty and Precaution

The recognition of uncertainty and the adoption of a precautionary approach were rarely employed in earlier assessment regimes. The lack of adherence to such sustainability-supporting principles was further reinforced by Yukon's economic and political reliance on, and endorsement of, the extraction of non-renewable resources. Moreover, as self-assessors of their own projects and responsible for carrying out their governments' mandates, projects were often adjusted to be made to proceed, as noted earlier; thereby often ignoring possible 'uncertain' synergistic changes to system functions. The lack of adherence to such principles is evident in inadequately assessed and mitigated projects which have imposed impacts on the Yukon environment and have lessened the condition of the socio-economic system functions. Uncertainty was mainly recognized in the earlier regimes in regards to southern-based technology operating in the north, but did not extend beyond that.

With the introduction of YESAA, application of and adherence to uncertainty and precaution principles are not explicit. Some still consider YESAA to be an EA process centered on approving projects. Yet the legislation, which emphasizes comprehensive scoping, provides a broader basis from which all types of potential impacts of a project can be considered and therefore linkages between impacts can be made and best decisions and conclusions can be sought. The level of scoping permits the recognition of particularities and unknowns of northern socio-ecological systems in the assessment process. Yet, the consideration of uncertainty and the adoption of precaution, fall short at the decision making stage, when the DO and YESAB should adopt such principles in their recommendations. The ultimate inclusion of such recommendations falls at the

discretion of the DB's should they choose to adhere and adopt the recommendations proposed by YESAB and the DO.

Monitoring and Adaptive Management

Monitoring of projects post approval was often lacking in past regimes in the Yukon. This, in conjunction with the lack of enforcement on the governments' and regulatory agencies' parts in regard to compliance violations has weakened the basis of EA in protecting the environment, as well as socio-ecological systems.

With the implementation of YESAA, as was the case with CEAA and YEAA, monitoring continues to be considered as a recommendation. And consequently, monitoring can only be implemented at the discretion of the DB, should they accept proposed recommendations for monitoring from YESAB and the DO. And as monitoring often is accepted as a mitigation practice for large projects, small projects often go unmonitored. The difficulty in implementing a solid monitoring program and regime lies in the assignment of financial and administrative responsibilities to carry out such a task. Yet, monitoring could provide valuable datasets for the Yukon, and other northern regions, where there is a lack of data. Monitoring can also prove to be beneficial particularly given the lack of land use plans for the area. It can serve as a means to attest broad-based cumulative impacts in a particular area, as evident in other northern EA processes (e.g. MVRMA). Monitoring can also address the uncertainties in the assessment process through the incorporation of adaptive management plans.

Moreover, monitoring can be applied at a systems level, in which case information can feedback into the assessment regime in order to re-adjust and improve on

inefficiencies such as the establishment of Standard Mitigative Measures for particular activities and sectors.

5.4 Chapter Summary

YESAA has a solid foundation from which EA can move beyond the conventional approach, as previously outlined in Table 2.3, to one less concentrated on regulatory requirements and on meeting acceptable levels. Provisions such as securing public and First Nations participation along with adopting a comprehensive scope of assessment, which considers a wide range of effects beyond the environmental, can stimulate the sustainability-based dialogue. Such dialogue can identify the needs and concerns of the people of the region and secure their best interest. This is particularly relevant in the north given the inadequate opportunities for input and control regarding local landscapes and resources in the past.

The system is not perfect. As identified in the research, concern still remains regarding transparency, particularly at the decision making stage, the duplication of effort and the little integration of the process with other processes. As well there is concern over the weight attributed to and the lack of consideration of socio-economic effects, and consequently the failure to incorporate socio-economic mitigation measures in final approval documents.

Perhaps the traditional view associated with EA processes continues to permeate, one that is concentrated on procedures and its correlation with an approval process and nothing more. Beanlands and Duinker (1983, cited by Conacher, 1988) highlight such perceptions associated with EA, as governments tend to see EA as a process to be carried out as prescribed by procedures, guidelines or laws, and as industry sees EA as a process

directly linked to project approval and licensing. The failure to look beyond it as more than a simple approval seeking and granting process hinders the possibility that such a process can have the ability to address broad-based land use questions and can be used as a means to achieve community-derived notions of sustainability at both the territorial and local levels.

6 SUMMARY AND CONCLUSION

6.1 *Thesis Summary*

As the literature suggests, EA processes have the possibility of becoming a means for achieving sustainable development by adopting proper procedural and substantive elements. Such provisions allow for the inclusion of public opinion, and for the value systems of local communities to be articulated and included in the decision making stage. It also can ensure that such needs and values are protected throughout the lifecycle of a project from its design, to its construction and implementation, to its operation, through to cessation of operations and dismantlement. Moreover, EA has the potential to make contributions far beyond the project level, by incorporating and considering cumulative effects and ensuring sound environmental and development decision making. It can also contribute to monitoring initiatives and promoting the adoption of adaptive capacity in order for re-adjustments to be made at both the project and process levels.

It is imperative, as researchers have suggested, that the EA process be attuned to the context for which it is applicable (e.g. Gibson et al., 2005; Lawrence, 1997; Sherman, 1990). The incapacity and inadequacies of past EA regimes operating in Canada's northern regions attest to this importance. EA processes were carried out in an ad hoc manner, with little attention given to local concerns and values, particularly those of First Nations' people and their environmental and cultural relationship with the land. Likewise, earlier EA processes administered by government bodies tended to favour development projects that offered little benefit to the local communities. Through land claim agreements, First Nations' roles in administering and participating in local land use

decisions have brought a new element of local-level decision making to northern environmental and resource management, including EA. This, coupled with devolution processes, has aligned environmental and resource-based planning processes to operate at a more local and regional level, which takes into account the particularities of the region and its local communities. In this way, EA, like other mechanisms of environmental planning and management can capture local issues and values - a key feature needed for sustainability-oriented EA processes.

This research intended to formulate a sustainability-focused framework that highlights the significance of sustainability-related EA components in northern contexts. The framework was based on several principles and criteria highlighted by the works of Gibson et al. (2005) and Hardi and Zdan (1997). The components were expanded to reflect Northern circumstances. The components used for this study included (1) accountability, (2) a holistic approach, (3) public and First Nation participation, (4) local and traditional knowledge, (5) efficiency, (6) uncertainty and precaution, and (7) monitoring and adaptive management. The framework was designed to be used as a tool for evaluating Northern EA regimes from a sustainability perspective.

The Yukon EA regime served as a case study for the purposes of this project, and past and present EA regimes were evaluated against the framework. The Yukon's EA system illustrates common elements of northern EA processes in terms of political, socio-cultural and environmental circumstances and history. This is evident in the consideration of the system's history which was once dominated by remote federal decision making, failing to appropriately and adequately secure and address Yukoners' values, despite their having to experience the ramifications of such decisions directly. The UFA, in

conjunction with devolution, has reasserted local control and decision making to the local level.

The evaluation of the Yukon's EA system under the sustainability-focused framework was based on data collected through a review of pertinent literature and EA documentation, as well as semi-structured interviews with informants familiar with the history and current state of the process.

The evaluation of Yukon's EA system under the sustainability-focused framework, was achieved through the analysis of the data presented in Chapter 5, and documents the provisions and elements of sustainability that were and continue to be lacking in the system over time. It also highlights the improvements that have been incorporated and developed with the process that correlate well with EA sustainability-aims and are more suited to the northern and Yukon contexts. The latter part of the chapter considers the various changes that have taken place in the Yukon's EA system in a broad sense, and highlights inadequacies as per the framework's components. It provides the basis for recommendations in this chapter that would assist in moving the system towards a more sustainability-focused process – that is, more holistic, more context specific, promoting greater dialogue between various parties, permitting the full integration of socio-economic values, and contributing to more sound planning and management at a broader scale.

6.2 Recommendations

Recommendations described below are proposed means of improving the Yukon's EA system in a manner that supports and promotes sustainability. The proposed recommendations address the inadequacies of the Yukon EA process according to the components of the evaluative sustainability-focused framework used in this study and the similar issues of concern expressed by the various interviewee groups. The recommendations are based on the comments and suggestions of the interviewees as well as the researcher's understanding gained during the course of study and inquiry. Furthermore, recommendations that would benefit other northern EA regimes are also highlighted. These recommendations are based on the beneficial and innovative features unique to the Yukon process, for which many of the interviewee groups agree are beneficial to the process.

Accountability

To ensure accountability in the EA process, the recommendations proposed by YESAB should carry more weight and not be easily changed. In order to ensure and strengthen YESAB's proposed recommendations, the decision making stage of the process, in which the DB considers the Board's and the DO's proposed recommendations, should be altered to include a comment submission stage. In this way, the DB's proposed recommendations can be considered in a transparent manner and open to public comment, prior to a decision document being issued. This would particularly benefit DO screening evaluations as there is only one opportunity available for public comment, in contrast to EC screenings, which allow for more opportunities for public

commenting. This will allow YESAB and its DO's, as well as other stakeholders, including the public and First Nations, to ensure that valid and significant concerns and values will be protected in the final decision document.

Holistic Approach

A holistic perspective should be adopted in a northern context as it complements and resonates with First Nations' world perspective in the way intricate relationships between the human system and the ecological systems are maintained and considered, with equal weight attributed to each.

The legislative foundation of YESAA allows for a wide array of important considerations in the northern context, and provides opportunity to explore the application and integration of a wide range of environmental management tools and discourses. Efforts should be increased to examine such applications, in order to seek out the best decisions, most suitable to the context in which it is being employed.

The various existing regulatory processes should be re-evaluated to ensure that environmental and socio-economic systems are protected and/or enhanced. Such a re-evaluation would ensure regulatory requirements address the comprehensive scoping aims of holistic assessments, at best. Other means of ensuring that proposed socio-economic recommendations from the Board or the DO's are secured in the decision document should also be sought apart from regulatory regulations. Such initiatives may include Impact Benefit Agreements (IBAs) and bilateral agreements in cases where there is adequate public concern regarding the maintenance and protection of socio-economic values in a community and for which regulatory conditions fail to address and secure.

The socio-economic database for the Yukon should be updated to provide a basis for meaningful socio-economic values to be protected, maintained or enhanced. The lack of meaningful socio-economic data can be addressed through data gathering and cataloguing initiatives and programs. The public participation process can and should continually assist with the collection of socio-economic data in order to feedback into the system and provide a basis from which meaningful decisions and recommendations can be made that secure the comprehensive scope of the assessment as outlined in the legislation.

The Yukon's EA regime would also benefit and improve its holistic qualities with the establishment of land use plans for all of the Yukon. Land use plans would assist with better decision making and take a less ad hoc approach to EA. In this way, land use plans can assist and guide decision making processes in EA, in such a way that proposed recommendations and decisions reflect the citizen's visions for their present and future landscape and adhere to established landscape designations that stipulate what is appropriate development across the landscape.

Nonetheless, as a result of the comprehensive nature of the YESAA legislation, the process offers the opportunity to address questions surrounding land use for particular areas lacking plans and consequently supporting dialogue for the establishment and articulation of common visions. In this way, the YESAA process has the potential to move beyond assessment limited to permits and regulatory requirements, and extend to include and address comprehensive planning questions, which support sustainability.

Public and First Nations Participation

Opportunities for intervener funding should be made available to assist groups such as NGO's to actively participate in the process and assist with alleviating constraints due to financial and human capacity issues, as was available under the CEAA regimes in the Yukon. Without intervener funding opportunities, effective and active participation of significant groups and stakeholders is hampered.

First Nations, as active members of governments, should have an opportunity to appeal decisions that are made that may infringe and affect their values. First Nations should have the opportunity to review and discuss with DB their recommendations prior to the issuance of a decision document. In this way, co-management principles laid out in land claim agreements are secured.

Local and Traditional Knowledge

Effort on the part of the assessors' and proponents should continue be exerted to ensure the active integration of TK in the assessment screening process despite the internal issues faced by First Nations governments with the collection and cataloguing of such data.

Efficiency

YESAA has helped improve efficiency in the Yukon's assessment process. This is particularly significant given the inefficiencies of past regimes. The YESAA process provides greater certainty to proponents and promotes early planning. Likewise, flexibility options also ensure that efficiency and streamlining measures will not sacrifice

quality assessments and decision-making. Yet, the interface of YESAA with other regulatory legislation and processes, most notably the Water Board and IFA, diminishes the efficiency of YESAA according to some.

As a result, aspects of the *Yukon Waters Act* related to the EA process, particularly rules and regulations should be re-considered in light of the implementation of YESAA in order to improve efficiency and decrease the degree of duplication of efforts from both YESAB and the Water Board. Likewise, in order to decrease duplication of assessment efforts in the case of projects in the Yukon North Slope, a harmonization accord should be in place to synchronize coordination between the YESAA and the IFA processes.

In addition, collaboration should be sought and initialized between all parties; regulatory bodies and authorities, YESAB and its DO's, and all levels of government. Such collaboration will bridge the regulatory and EA processes thereby increasing efficiency. Moreover, collaboration initiatives will further secure First Nations' interests in the process and ensure their needs are addressed. They will also reconcile some of the capacity issues experienced by First Nations governments through active communication and the sharing of information.

The establishment of specific taskforces would improve collaboration and communication between parties. These taskforces should be established to consider broader themes and issues associated with the EA process beyond project levels (e.g. best practices).

Furthermore, the application of SEA to PPP of the Yukon would reinforce the efforts achieved through YESAA and ensure progress towards sustainability. The SEA of

sector specific PPP for the mining, forestry and agriculture sectors within the Yukon would consider environmental, social and cultural effects that go beyond the individual project level and also the cumulative effects associated with the sectors. SEA can be applied spatially when considering a specific geographical region. This would be particularly beneficial to the Yukon as it would require plans and programs for a particular area to be assessed strategically. This would assist in identifying favoured land use development patterns as well as setting limits for future growth. SEA would assist in addressing some of the gaps that still remain within YESAA, by improving decision making in such a way that the results of the YESAA process at the project level would be environmentally sound and reflect broader-based initiatives.

Uncertainty and Precaution

Due to the lack of, and outdated environmental and socio-economic data available in the Yukon, together with the difficulty to make valid predictions of systems' functions, precaution should be undertaken throughout the course of the EA process and maintained through the project's lifecycle. Initiatives such as implementing adaptive management plans for projects are a means of exercising precaution and recognizing uncertainties. Adaptive management initiatives should be adopted and incorporated into project plans where there is a level of uncertainty that warrants precaution. In this way, YESAA is better equipped at ensuring that any unsuspected surprises to the effects predicted and anticipated in the EA process are mitigated.

Monitoring and Adaptive Management

The initialization of a regional cumulative effect monitoring program, that takes into account all the effects of the multiple developments within a particular region, would benefit the Yukon's EA process and would serve as a means for addressing sustainability. Such a program would provide a holistic and comprehensive understanding of the changes that have and are taking place across the landscape. This information can feed back into the system influencing future development decisions for certain regions. Monitoring in the Yukon tends to focus at the project level, and connections to broader based monitoring information is lacking. The implementation of such a program would benefit the Yukon and YESAA particularly given the few land use plans established for the territory. Such a monitoring program could also be linked with other jurisdictions, all of which would assist in making better informed decisions through the EA process.

Such recommendations address the weaknesses in the Yukon's EA process as expressed by the interviewees and identified by the sustainability-focused framework. Addressing such short falls will assist in moving the process towards one that is adept at meeting sustainability needs and goals.

Lessons from YESAA Extended to Other Northern EA Regimes

Despite the aforementioned recommendations to improve the YESAA process, there are features and initiatives in place in the Yukon EA process that would benefit other northern EA regimes, supporting and favouring a sustainability approach. Such an initiative includes the YESAA's online registry system, which is highly accessible. This

can prove to be beneficial to other northern regions with dispersed populations, accommodating the long travelling distances between the assessors and the public. Moreover, apart from being accessible, the online system is transparent, allowing the public and interested stakeholders to view all information pertaining to a project. It also allows for public participation through its user-friendly online submission of comments. Accordingly, the public have the opportunity to become more active and participate in decisions that affect their communities and local landscape.

6.3 Future Research

Despite the attempts made here to explore the means of sustainability that EA processes can achieve in northern contexts, future research is still needed. Each of the components of sustainability that make up the framework could be explored further, in terms of how to actively improve the adoption of such sustainability principles in EA processes, particularly in northern EA processes. Such research initiatives could consider the role of each component within a northern context, particularly, monitoring and adaptive capacity and uncertainty and precaution components.

The dissociation between EA and monitoring in the north, as noted, hampers the validity of EA processes and decisions made in northern regions. Monitoring has the potential to validate the effectiveness of development-related decisions made through the process. And given the lack of baseline data for northern regions it has the potential to contribute data and fill in gaps. Future research lies in the consideration and integration of monitoring initiatives that would benefit northern EA processes. Such initiatives can include the implementation of citizens-based monitoring programs that feed into an accessible and transparent database. Likewise, the installation of regional cumulative

effects monitoring programs, similar to the one established under the MVRMA, could provide beneficial information to the Yukon's EA regime thereby assisting in the making of better and informed decisions that support a holistic approach.

Moreover, the role of uncertainty in the north has and will continue to be an ever more pressing issue given the implications of climate change and the vulnerabilities of northern environments and livelihoods. More research is needed to consider the role of applying precaution in light of such uncertainty and unknown circumstances in northern EA processes. The integration of monitoring initiatives could address concerns of uncertainty, by providing information that can feed into the system, both at the process and project levels, and allow for re-adjustments to take place in light of changes and surprises.

Other research opportunities lie in consideration of the full integration of socio-economic mitigation measures that address and protect values of local communities in the north. Given that stipulations in decision documents are largely tied to regulations and few of those regulations protect socio-economic values directly, the consideration of tools and instruments such as Impact Benefit Agreements should be researched within the scope of northern EA processes, along with their potential at addressing sustainability aims.

6.5 Conclusions

This research has contributed to the literature which considers the relationship between EA and sustainability, as well as the literature concerning sustainability and environmental management in northern regions. The research explores the relationship

between EA and its potential to achieve sustainability within a northern context by highlighting and exploring important factors necessary in northern settings.

Moreover, the research highlights gaps which continue to persist in the Yukon's EA process, including the degree of transparency at the decision making stage, duplication of effort, and little integration of the process with other regulatory processes, particularly water licensing. In addition, concern resonates over the weight attributed to and the lack of consideration of socio-economic effects; particularly at the decision making stage, and subsequently, the failure to incorporate socio-economic mitigation measures in final approval documents. Such gaps hinder the EA processes' capacity to attain and address sustainability aims for the Territory and to ensure that proper decisions are made that will secure 'real' benefits to Yukoners.

The research also highlights beneficial provisions and elements that support EA processes in the north and should be integrated into other northern EA and land claims-based processes. Such provisions include an open process for all stakeholders to participate, an online process that is in most cases easily accessible and transparent, and a semi-decentralized process with greater decision making powers available for First Nations and conducive to the realities of socio-cultural and ecological systems of the north.

The various changes to the Yukon EA regime, the result of both external and internal factors over the last four decades, have shaped the Territory's EA process in becoming more suited to the realities and circumstances of its context. Yet as highlighted, there are still weaknesses in the process when considered from a sustainability perspective. Given that the YESAA process is still fairly recent, there is still time to

address these weaknesses and improve the process further. The prospect of imminent project proposals for Canada's north emphasizes the importance and significance of EA processes. EA could become an important tool that can address the needs of northern peoples and ensure that the supporting and key linkages of their socio-ecological systems are protected and supported.

In order to appreciate the potential of EA, one must be willing to consider the EA process as a process that is not constrained by legalistic and procedural guidelines which can dilute and hinder its potential to move towards a sustainability-focus. Likewise, the EA process itself at times is viewed as the product; a process that needs to be carried out and completed. Such views continue to permeate EA practitioners, bureaucrats and proponents, as experienced by the researcher. Should these views continue to persist, the potential of the Yukon's EA regime to address sustainability will continue to be restricted, as decisions and terms and conditions will continue to concentrate on regulations; failing to address broader bases of sustainability.

There is potential for sustainability to be sought through EA in the Yukon, as the process incorporates various supporting elements of sustainability and provides a forum that supports the articulation of Yukoners' values and visions for their current and future landscape. It is to be hoped that that the process will promote and generate decisions that reflect all the components of sustainability suited to the north context – one that is holistic, open and promotes dialogue between various stakeholders, integrates different knowledge sets, permits the full integration and protection of socio-economic values, and integrates with other planning and management initiatives and processes at the local, regional and territorial scales.

APPENDIX A: Interview Questions

General Information

1. Please state your name.
2. Who do you represent?
3. How long have you been affiliated with the represented party?
4. Are you a resident of the Yukon?
5. How long have you lived in the Yukon?
6. Would you consider yourself familiar with the history and/or current situation of Environmental Assessment processes in Yukon?

Broad Concepts

7. In your opinion, how important are environmental assessments to development-related decision-making?
8. In your opinion, is there a connection between environmental assessment and the notion of sustainability? Explain.
9. There have been numerous changes to Yukon's environmental assessment system over the years, with EARP, EARPGO, CEAA, YEAA, and now with YESAA. How do you view these changes?
10. Do you view such changes to the Yukon EA system as a progression towards an EA system that better reflects the social, environmental and cultural circumstances of the region for which it is being implemented?
11. Considering the EA history of Yukon and its current EA system, what are key features that you feel are necessary in northern EA processes?

Specifics – Key features in Sustainability-aimed EA process in a Northern Setting

12. Systems/Holistic Perspective
 - (i) It had been anticipated that YESAA would be one of the most comprehensive EA approaches in Canada. In your opinion has this been achieved? Why or why not? If comprehensive, what features make it so?

- (ii) Conventional EA processes have been noted to consider social, environmental and economic effects in separate analyses, with little consideration for the linkages and interactions between these varying effects. In your opinion, has the Yukon EA process moved beyond this conventional approach? And do you feel there are merits of such an integrated approach?

13. Values and Preferences

- (i) Are the values, priorities and preferences of Yukoners taken into account in EA processes?
- (ii) In your opinion, how important are values and preferences in an EA process?

14. Public Participation and Involvement

- (i) Are you satisfied with the available opportunity for participation and involvement in Yukon EA process – for the general public? First Nation groups? Environmental Non-governmental organizations?
- (ii) Are you satisfied with the level of transparency and openness of the EA process and related decision-making? Why or why not?
- (iii) If improvements could be made to the EA process in terms of public participation and involvement, what would you suggest?

15. Traditional Ecological Knowledge (TEK)

- (i) In your opinion, how would you describe the role of TEK in the effectiveness of Yukon EA system?
- (ii) In your opinion, is TEK satisfactorily incorporated into Yukon's EA process?

16. Uncertainty and Precautionary Principle

- (i) In your opinion, how important is recognizing uncertainty in northern EA processes?
- (ii) In your opinion, is uncertainty recognized and the precautionary approach applied in Yukon's EA system? Why or Why not?

17. Efficiency

- (i) There has been increasing emphasis on efficiency initiatives in EA processes. In your opinion, are the timelines and registry for review appropriate under the YESAA regime?
- (ii) How does such efficiency initiatives correlate with EA sustainability aims?

18. Monitoring and Adaptive Management

- (i) How important in your opinion is monitoring the implementation of projects, post approval in northern settings?
- (ii) Literature suggests there are significant contributions monitoring can bring about to an EA process, apart from measuring actual effects versus predicted effects and whether approval conditions and commitments are met in implementation. Monitoring can promote collective learning and adaptive management. Do you feel there is ample opportunity in the Yukon EA system to achieve such objectives?
- (iii) In your opinion, are there improvements you would like to see in regards to monitoring and YESAA?

19. Concluding Questions

- (i) Now that we are almost at the end of our interview session, is there anything else you would like to add to the previous question I asked:

Considering the EA history of Yukon and its current EA system, what are key features that are necessary in northern EA processes?
- (ii) Can you recommend any other potential key informants that would provide valuable insight to this research project?
- (iii) Can you recommend any documents or articles that would be of value to my study?

Thank you for your time. I appreciate your participation in this interview and sharing your knowledge. If you should have any questions or concerns feel free to contact me.

APPENDIX B: Informed Consent Form

WILFRID LAURIER UNIVERSITY INFORMED CONSENT STATEMENT

A Critical Examination of Sustainability Considerations in Yukon Environmental Assessment – Past and Present

Louisa M. Clementino, Principal Investigator
Dr. D. Scott Slocombe, Advisor

Hello. My name is Louisa Clementino, a graduate student at Wilfrid Laurier University. You are invited to participate in a study to document and evaluate the evolution and current state of environmental assessment (EA) processes in Yukon, from the perspective of how effective these processes have been, and are, at reflecting and fostering aspects of sustainability. The research is a part of my Master of Environmental Studies degree and the results will be published in an academic thesis. My advisor, Dr. Scott Slocombe, is a Geography and Environmental Studies professor, at Wilfrid Laurier University.

I am interested in your views of the significant changes that have taken place to the environmental assessment (EA) regime in Yukon. I am also interested in hearing your perceptions about key sustainability considerations that are central to EA-related decision-making and processes that take place in Yukon. This research study will involve interviews with approximately 20 participants from the Yukon government's resource and environmental management agencies as well as other sources familiar with the Yukon EA regime. Interviews are expected to take approximately 45 to 60 minutes of your time. The information you provide will not be identified with you personally and your name will not be released in the publication. Direct quotations may be used in the publication and may be associated with your affiliated organization. You will be notified if a direct quotation is to be used in the study's findings and you will have the option to refuse permission for any quotations. You may participate in the interview without being quoted.

The issues under study are NOT of a controversial nature to you and/or your organization. The study will provide a better understanding of sustainability initiatives that complement northern environmental assessment regimes.

The interview will only be audiotaped with your written consent. Following the interview, I will transcribe your comments. My advisor and I will be the only individuals who will have access to the transcripts and tapes and all transcripts and tapes will be kept in a secure location. When the thesis is complete, the tapes will be destroyed. I agree to the use of an audiotape during the interview.

Participant's signature _____ Date _____

Throughout the course of this research project every effort will be made on my part to abide by the ethical guidelines that ensure your privacy, confidentiality, and informed consent. By signing this below, you acknowledge my commitment to these guidelines.

Initial x _____

I, _____ (please print your name)

- Agree to participate in an interview for the purposes of this research study;
- Have been informed of the uses of this research material and understand that my privacy and confidentiality will be respected throughout the course of the research undertaking;
- Understand that my participation is voluntary. I may withdraw at any time and subject to my withdrawal all my tapes and data provided will be destroyed;
- I have the right to omit any comments I make and/or any question(s) that I do not wish to answer;
- I may / may not (please circle one) be quoted directly;
- If directly quoted, I understand that the quotation used may be associated with my affiliated party and I understand I will be notified by the researcher and will have the option to omit any quotations that may be used in the publication

Have read and understood the above information and have received a copy of this form. I agree to participate in this study.

Participant: _____ Date: _____

Researcher: _____ Date: _____

If you have questions at any time about the study, or the procedures, you may contact the researcher Louisa Clementino at Geography & Environmental Studies, Wilfrid Laurier University, 75 University Avenue West, Waterloo, ON N2L 3C5 and/or 416-###-#### and clem7260@wlu.ca. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights have been violated as part of the research, you may contact Dr. Bill Marr, Chair, University Research Ethics Board, Wilfrid Laurier University at 519-884-0710. Ext: 2468. The expected completion date of this study is January 2008. A short report will be composed detailing the study's findings. This report will be forwarded to the Yukon Heritage Branch and Yukon Archives as well as the Northern Scientific Training Program (NSTP). Should you wish to receive a copy of the report feel free to contact me at the address provided above.

APPENDIX C: A Synopsis of Comments Collected from Interviews

Themes & Concepts from Interviews	Government Bodies (Federal, Territorial and First Nations)	Yukon Environmental and Socio-economic Assessment Board (YESAB) and Regulatory Agencies/Departments	Non-governmental Organizations (NGO's) and Industry Representatives and Environmental Consulting Firms	Unaffiliated persons
<p>Relationship of EA and Sustainability and development-related decision-making</p>	<ul style="list-style-type: none"> - stated in purpose of CEAA (Sec. 4) - a means of addressing values (i.e. what values do the public want protected, what values will be impacted) - SEA a strong means of linking EA and sustainability but not being used as much as should be - struggle over the years with incorporating cumulative effects and sustainable development in EA ***** - critical to development decision making - EA a tool for sustainability - EA legislation can be constrained/limited in maximizing and addressing the connection between the two (e.g. socio-economic effects considered when tied to environmental effect) - legislated quality of EA limits full addressing of sustainability, as EA a boxed off process and does not ask/look at fundamental, broad-based questions ***** - essential and key requirement for development decisions - ensures resources for future generations - problem is incorporating sustainability principles into EA along with cumulative effects assessment and social planning - long term sustainability is not fully addressed 	<ul style="list-style-type: none"> - YESAA Act addresses elements of sustainability in Sec 5.2e, in which states "to ensure that projects are undertaken in accordance with principles that foster beneficial socio-economic change without undermining the ecological and social systems on which communities and their residents, and societies in general, depend" ***** - a means of controlling development 	<ul style="list-style-type: none"> - need good regulations and supporting legislations to make EA effective at addressing sustainability - it has the potential to address socio-economic concerns not covered in regulation policies ***** - a tool to bring development-related issues to the table from a variety of stakeholders, dialogue regarding land uses - EA is important to effective and sound development planning - becomes even more significant due to the lack of land use plans in the Yukon - connection of sustainability and EA theoretically 	<ul style="list-style-type: none"> - the Yukon is broad and therefore sustainability and cumulative effects is not so much of an issue as in southern regions ***** - yes there is a connection between the two but there needs to be a consideration of what is sustainable in the Yukon context

<p>Perspectives on changes to Yukon's EA process <i>EARP and EARPGO</i></p>	<p>***** - Ottawa-derived and based EA systems not conducive to northern context - no 'exit-ramp' for projects - applicable only to Crown land - failed to capture northern values - monitoring inadequate - EA managers could ignore certain aspects of EA at their own discretion ***** - less rigorous in application because not legislated - TK not included in EA</p>	<p>- self-assessment process</p>	<p>***** - government assessment process, self assessment - constrained scope socio-economic effects tied only to environmental effects - Ottawa-based process, a southern-process (problem with time zones, etc) - no local control over resources, land-related decision-making and a lack of input into process</p>	<p>***** - government assessment process, self assessment - constrained scope socio-economic effects tied only to environmental effects - Ottawa-based process, a southern-process (problem with time zones, etc) - no local control over resources, land-related decision-making and a lack of input into process</p>	<p>***** - government assessment process, self assessment - constrained scope socio-economic effects tied only to environmental effects - Ottawa-based process, a southern-process (problem with time zones, etc) - no local control over resources, land-related decision-making and a lack of input into process</p>
<p><i>CEAA and YEAA</i></p>	<p>***** - with CEAA departments' were heavily involved administratively in the EA process -- better coordination between CEAA process and Water Board process' - did not address socio-economic and ecological values very well ***** - intervenor funding available under CEAA - CEAA Agency developed guidelines, and a lot of effort was invested in increasing practitioners' abilities - YEAA EA became territorial government responsibility - applicable only to Crown land - unusable public registry - inadequate monitoring ***** - believe more First Nation involvement and better opportunity for dialogue between First Nation government and other levels of government</p>	<p>- did not cover realities of the Yukon well, such as the different levels of governments, and different lands including settlement and non-settlement lands ***** - more streamlined process with Water Board process, with process taking place concurrently to EA - prior regulatory agencies carried environmental assessment, involved with consulting First Nations and other government agencies, and stakeholders</p>	<p>- government departments carrying out own EA, and often promoters of projects and therefore accountability is lessened as departments maybe seeking own agendas - recommendations made under CEAA were binding - proposed projects were rarely changed, but adjusted to make proceed through process ***** - lengthy timelines - constrained scope because socio-economic effects only considered if directly related to an environmental effect - Ottawa based process</p>	<p>- government departments carrying out own EA, and often promoters of projects and therefore accountability is lessened as departments maybe seeking own agendas - recommendations made under CEAA were binding - proposed projects were rarely changed, but adjusted to make proceed through process ***** - lengthy timelines - constrained scope because socio-economic effects only considered if directly related to an environmental effect - Ottawa based process</p>	<p>- rare for public to respond to CEAA/YEAA - better streamlined with Water licensing process</p>
<p><i>YESAA</i></p>	<p>- seen the greatest change from CEAA to YESAA departments' roles, not as involved administratively in the EA process - more effective government participation in process supplying meaningful input - YESAA a better reflection of Yukon</p>	<p>- a maturation - a process more conducive to northern realities, and realities of the Yukon - transparent process - independent 3rd body - as oppose to government bodies carrying out EA as in</p>	<p>- recommendations made are not binding and can be varied by a DB's without a political process or an appeal process ***** - lack of communication</p>	<p>- recommendations made are not binding and can be varied by a DB's without a political process or an appeal process ***** - lack of communication</p>	<p>- more assessments being conducted than under CEAA - not as streamlined with water board process, now 2</p>

<p>Perspectives on changes to Yukon's EA process</p> <p>YESAA (continued)</p>	<p>considerations, broader considerations than CEAA, greater public participation, address values of Yukon society especially First Nations values</p> <ul style="list-style-type: none"> - opportunity there to explore further socio-economic assessment beyond other legislated Acts (e.g. CPA WS, Fisheries Act, etc) - integrate innovative environmental management and evaluation tools such as ecological economics - DB's difficulty in accepting socio-economic recommendations <p>*****</p> <ul style="list-style-type: none"> - YESAA applicable to all lands in the Yukon – federal, territorial, First Nations and private - broader scope to include socio-economic effects not directly related to environmental effects - secures First Nations participation and values, as prescribed by UFA - more government-to-government dialogue because 1 legislation - no intervenor funding available under YESAA <p>*****</p> <ul style="list-style-type: none"> - no interaction and dialogue between First Nations resource managers and governments, government-to-government dialogue and communication lacking - decisions can be made in regards to development outside settlement land without consultation with First Nations - scope of assessment to broad, simple things being assessed - yet still would like to see triggers list expanded - streamlined but too fast 	<p>the past</p> <ul style="list-style-type: none"> - more local control and input, which was lacking in previous regimes - indication and example of changes that have taken place to EA over the last 20-40 years - secures First Nations participation and involvement as oppose to in the past <p>*****</p> <ul style="list-style-type: none"> - changing role for regulators not carrying EA anymore 	<p>between government and permitting agencies</p> <ul style="list-style-type: none"> - more opportunity for public involvement, transparent process - focus tends to be on public rather than proponent - early planning for proponents - mitigations for socio-economic effects cannot fall on the responsibility of the proponent, not captured in regulatory legislations - inclusive of social and cultural realities - more conducive to social, ecological and economic linkages 	<p>processes carried out by two separate agencies</p> <p>*****</p> <ul style="list-style-type: none"> - a LCD (lowest common denominator) approach, something that everyone can live with
<p>Significant EA features in Northern settings</p>	<p>- need for appropriate data collection, meaningful data particularly meaningful socio-economic data so that it can be adequately incorporated into process</p> <ul style="list-style-type: none"> - recognize and capture issues of 	<p>- notification of projects in a variety of forms, user friendly and appropriate</p> <ul style="list-style-type: none"> - considerate of northern lifestyles and realities 	<p>- implications related to climate change, for instance changes to water flow</p> <p>*****</p>	

<p>Significant EA features in Northern settings (continued)</p>	<p>traditional lifestyles, reliance on natural resources</p> <ul style="list-style-type: none"> - local expertise and knowledge - local and site specific data - dialogue between government bodies and technical advisors, to come up with creative solutions ***** - different values - embracing socio-economics in EA despite historical reliance on non-renewable resource industries - socio-economic a freestanding consideration - public registry, increased public participation - an arms length body - establish goals and vision for landscape through land use planning - communication and technical collaboration (e.g. establish a shared database) ***** - open and transparent process - consideration and inclusion of cumulative effects - involvement of First Nations and inclusion of northern value system (e.g. TK) - First Nations as active and equal decision makers - sharing and access to information and data - land use planning and cumulative effects incorporated and tied to EA - implications of climate change - government-to-government process 	<p>importance to northerners, different linkage to environment</p> <ul style="list-style-type: none"> - transparency - incorporation of land claims framework into EA, another dimension of the process - different realities and lifestyles - inclusion of TK - realities of southern-derived and based businesses and people coming to north - accessibility (e.g. DO's in the 6 regions) ***** - need for people with understanding and experience of northern reality, e.g. knowledge of areas and local expertise - continuous monitoring and inspection 	<p>- inclusion of TK</p> <p>*****</p> <ul style="list-style-type: none"> - efficiency and establishment of timelines, particularly given short summer season - also efficiency through the establishment of standard mitigative measures - knowledge of local environment and realities and understanding of technologies and industries - First Nation consultation and incorporation of TK - engagement of local community and First Nations, strengthens the process - recognition of uncertainty of southern technologies operating in northern landscapes - implications of climate change - solid baseline data - Incorporation of cumulative effects - continuity of the process (i.e. that is with a transient population - Board appointments should be staggered so that at least one person will be in the loop) - flexibility option - extensions - consider in terms of life cycle (i.e. construction to reclamation) 	<ul style="list-style-type: none"> - need for land use planning and visioning - resource extraction dependent economy needs a proper EA process that will ensure 'real' benefits to northerners - inclusion of cumulative effects - meaningful participation for all stakeholders
<p>I - Accountability</p>	<ul style="list-style-type: none"> - arms length body created ***** - legislated to be done and carried out which is good - independent of bureaucracy - because transparent more diligence in how government responds - not transparent at decision making level – so public unsure what actually influences decisions 	<p>transparent process</p> <ul style="list-style-type: none"> - independent 3rd body as oppose to before with government carrying out own assessments 	<p>- recommendations made by the board can be varied by DB's, despite the public and/or First Nations concern</p> <p>*****</p> <ul style="list-style-type: none"> - not transparent at the decision document drafting stage 	<p>*****</p> <ul style="list-style-type: none"> - YESAB is only a recommendation body and therefore government can overturn recommendations and make projects

<p>1 - Accountability (continued)</p>	<p>- Is it a political decision? ***** - politically neutral</p>			<p>proceed despite elevated level of public concern, therefore questions quality of public participation level and YESAB's efforts - simply a recommending body</p>
<p>2 - Holistic Approach</p>	<p>- offers greater range of considerations in scoping - difficulty in moving beyond conventional approach - looks at the 3 pillars that are used for planning for sustainability (economy, environment, and society) - set up to be comprehensive at smaller levels of assessment as oppose to other regimes that adopt such scoping for panel review level assessments) - still new, especially work to be done with incorporating socio-economic impacts and recommendations ***** - YESAA applicable to all lands in the Yukon, federal, territorial, First Nations, and private - more keen to First Nations concerns - set up to be comprehensive, still work to be done - socio-economic effects, freestanding consideration - only applicable to projects requiring a permit/authorization which limits enforceability of socio-economic requirements and difficulty accepting such recommendations in a non-renewable resource driven economy - as a legislated process constrains what can/cannot be considered in the scope of the assessment ***** - look at different aspects (env, social and economic) but not in combination with one</p>	<p>- difficulty with DB's accepting socio-economic recommendations because regulatory legislations don't permit enforcement of such recommendations - land use planning would assist in making it more comprehensive - difficulty also with lack of socio-economic data at local and project scales ***** - still work to be done to fully understand and integrate socio-economic considerations (e.g. how to use it, esp. with issuance of a permit?, what are socio-economic impacts? How to manage those impacts?, etc)</p>	<p>- unsure if linkages are made between impacts - socio-economic impacts not fully integrated ***** - applicable to all of Yukon lands - in comparison to other northern EA, process more comprehensive in that socio-economic impacts are looked at directly and not necessarily linked to environmental effects - more comprehensive than CEAA, allows for linkages to be assessed - recommendations carried over to DB's limited by legislations with long history (i.e. related mining legislations) - unavailability of data (social, some ecological also)</p>	<p>- more in-depth consideration of socio-economic impacts that proponents must consider ***** - needs to be linked to land use planning and therefore wise decisions are not being made - cumulative effects not considered beyond project site - unsure if 'real benefits' weighed</p>

<p>2 - Holistic Approach (Continued)</p>	<p>another</p> <ul style="list-style-type: none"> - expansion of triggers list - holistic approach in line with First Nations world perspective - socio-economic aspects not included or integrated well, DB's overturning decisions, concern over weight attributed to socio-eco impacts - still new, set up to be comprehensive yet regulatory and legislative hamper full application 	<ul style="list-style-type: none"> - more opportunity, more open and more transparent than CEAA - all values are to be considered (what the public want protected? And what values will be impacts?) - but hierarchy exists in terms of weight (e.g. legislated-related values, First Nations values, public values, one single individuals' values, etc) - built in opportunities for flexibilities and extensions to timeframes for input ***** - difficulty with technologically based system (e.g. large files for download, remote communities with slow internet) - level of dialogue sacrificed for timelines for proponents, timelines constrain creative solutions and effort to establish and build a vision - diverse set of values in the Yukon despite small population - intervenor funding would be an improvement ***** - technologically based makes it difficult for people without computers to submit information including TK or those who are not able to read/write to make submissions - opportunity is available for submissions of values and input but the weight attributed to such input is questionable, particularly from 	<ul style="list-style-type: none"> - the board has taken up numerous initiatives to associate and educate the public for more constructive ways of participation and input - more opportunities available for accessibility to information and answers to questions than in previous regimes - opportunity to know and submit input - a more user-friendly system established - visioning would benefit process to establish what is it that people want for their landscape ***** - difficulty in submitting because technically based but still remains public's responsibility - capacity issue of First Nations - DB's must provide rational for not using recommendations proposed by YESAB 	<ul style="list-style-type: none"> - open and transparent until decision document drafting stage - an improvement on CEAA - questionable whether weight is given to values if DB approves project despite public concern (e.g. agricultural case) ***** - good opportunity for First Nations to secure 2 goals: protect environment and support economic development - issue of transparency for consultants as assessors may lack experience - accessible process with DO's and internet registry - lifestyles may hamper notification and submission into process (e.g. trappers) - believe First Nations oversold on idea of YESAA, to have veto power 	<ul style="list-style-type: none"> - proponents concern over decision document drafting stage, less transparent ***** - huge amounts of effort are exerted by RRCs, NGO's, and First Nations into the process only to have recommendations be overturned by DB's - therefore meaningful participation questionable - capacity issues for First Nations and NGO's - lack opportunity for intervenor funding
<p>3 - Public and First Nations Participation</p>					

<p>3 - Public and First Nations Participation (continued)</p>	<p>First Nations point of view, when projects are not deemed appropriate</p> <ul style="list-style-type: none"> - values were ignored in the past, definitely an improvement in terms of availability of opportunity - values communicate vision for the Yukon and First Nations communities - lack of communication and dialogue between First Nations governments and other level of governments, particularly DB's at decision document drafting stage - open and transparent (until decision making stage) - timeframes for input can be short and tight given First Nations capacity issues and issues related to accessibility of information - not transparent at the decision document drafting stage, in which case First Nations would like to be involved and dialogue with the DB 	<ul style="list-style-type: none"> - specific and implicit consideration for TK, greater recognition of TK in the process than before - onus on party to submit information in order to be considered - confidentiality clause hampers the extent to which one can attest to its incorporation ***** - feeds into value system, highlights significant First Nations' values - needs to be connected with scientific knowledge ***** - secured to be considered in EA through legislation - problems associated with TK : interpretation, format for which it is available, its usage, and its availability - First Nations working through issues of ownership and usage - confidentiality issues -- fear of becoming public, misused, misinterpreted, misrepresented, 	<ul style="list-style-type: none"> - local knowledge extends to people living off the land, and also government experts - to be given full and fair consideration as prescribed in the act - YESAB together with Yukon First Nations Heritage group developing framework to more effectively catalogue and share TK - First Nations have own issues related to TK -- dissemination of information, collection, ownership, etc. - till improvements to be made ***** - unsure extent of incorporation because of confidentiality clauses 	<ul style="list-style-type: none"> - legislated to be taken into account - confidentiality clauses ***** - an important consideration in the north - still work to be done on integration - confidentiality clauses affect transparency - related to notification and participation given lifestyle (e.g. trapper out in the winter when proposals are coming in) - transparency also affected by confidentiality clauses associated with TK
<p>4- Local and Traditional Knowledge</p>				

<p>4 - Local and Traditional Knowledge (continued)</p>	<p>theft, etc. - TK needs to be in a usable format for EA - raised as a value and concern it has been disregarded in decision documents by DB's, therefore questions the weight attributed to TK - efficiency cannot compensate the goal of EA - there needs to be a balance so that the intent of EA is not lessened - duplication of efforts with YESAA and the Water Board - now two separate processes which duplicate efforts of both boards and compensate efficiency - timelines are needed for proponents to plan and secure funds - recommends taskforce to dialogue regarding effective EA tools that can be incorporated such as ecological economics, uncertainty, etc. ***** - timelines are generally divided in 3 categories and therefore smaller projects can take longer - timelines always an issue in the north - some duplication with regulatory and other legislation - exit ramps /projects can be kicked out of system - that is projects are not kept in the system as was the case with CEAA and EARP - efficiency needs to be in place in such a way that impacts to either sectors (environment, economy, society) are not compromised - timelines can constrain creative solutions and permit for visioning exercises to take place ***** - timelines can be too short and tight given First Nations' capacity issues (financial and human) - built in flexibility - can ask for extensions - timelines can be too long for small projects - recommends a 2nd round of public opportunity for comment after decision document has been issued, so discussion can occur in regards to mitigations</p>	<p>- concern voiced from First Nations regarding timelines - a balance between proponents desires for an efficient system and ability to capture all aspects to make good decisions and recommendations - 5 year review to address some of these concerns - standard mitigative measures could be an improvement to efficiency ***** - some timeframes and extended while others shrank, relative to type of project - projects requiring water license have extended timeframes than before, a separate process that adds an average 60 days after the EA process</p>	<p>- timelines are tight for DO-level assessments given capacity issues of small organizations and may hinder the amount and quality of input and information sought after to make good planning decisions - availability of extensions ***** - proponents want and like timelines - lack of knowledge and experience with industries and the north can impede efficiency as unnecessary information requests can be made - lack of communication between the assessors and the permitting agencies which hampers efficiency - once YESAA's timeline ends, the permitting agency's timeline begins - establishment of Standard Mitigative Measures will improve efficiency - better and early planning and design - little duplication with other EA processes except for CEAA instances (transjurisdictional or national issues) - some duplication of efforts on Yukon North Slope with IFA process - efficiency an issue in north - proponents want transparency</p>	<p>- recommends a complete review of regulatory legislation to reflect YESAA - recommendations in decision documents are reconciled in water license and therefore efforts duplicated - wasted efforts and money - political pressures has resulted in bad licenses - purpose of Water Board should be reconsidered ***** - organizations must choose projects they which submit information to given capacity issues and balancing with other responsibilities</p>
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<p>5 - Efficiency <i>(continued)</i></p>	<p>- greater uncertainty in the North and feels is recognized - precaution is subjective with different interpretations of what is means - uncertainty inherent to EA, question is how well you can manage that in EA - evidence of failures of recognizing in such in mine closures and reclamation – also associated with financial uncertainties of securing funds to property close mine - less precaution and more about risk management ***** - a northern reality – is a lack of data and trend information - YESAA unable to adequately consider cumulative effects because unable to look at induced growth - southern technologies operating in northern landscapes - more important in the northern given slower recovery times of systems and the potential for downstream effects – therefore magnitude of impacts and recovery time important considerations in northern assessments - precaution a vague terminology that cannot be adequately included in legislations - adaptive management a mechanism to deal with uncertainty ***** - uncertainty not considered - cumulative effects not considered, project-by-project basis - still remains an approval process in which precaution is not applied - even if uncertainty recognized or precaution applied DB's has authority to overturn proposed</p>	<p>- difficulty with term precaution because of varying interpretations - recommendations are often varied in most cases and thus precaution and uncertainty could be recognized however DB's are the final decision makers - difficulty in applying cumulative effects assessment if not projects exists - EA is about dealing with uncertainty - no reference to precaution in the legislation and therefore as stipulated in act, only required to mitigate significant effects ***** - uncertainty is a given – cannot make 5-year predictions - sees value in phased approach (project by project) as oppose to larger scale and whole project scale</p>	<p>at decision document drafting stage as license requirements are set up</p> <p>- uncertainty important in the north - projects need to have alternatives or plans for malfunctions - uncertainty not considered at cumulative impact level - major uncertainty tends to revolve around large mining projects ***** - uncertainty is a 'given' in EA, that is what EA is about - more unique uncertainties in the North - monitoring and adaptive management can assist and deal with 'new' uncertainties - cumulative effects a means of addressing uncertainty - execution of precaution will depend on the DB, community may influence extent of application – more incidental than explicitly applied</p>	<p>- there is never 100% certainty that a project will be fully mitigable ***** - lack of scientific data and understanding on how Yukon ecosystems' function but evidence exists on developments and the impacts associated with them - land use planning in conjunction with scientific assessment could assist with dealing with high levels of uncertainty</p>
<p>6 - Uncertainty and Precaution <i>(continued)</i></p>				

<p>7- Monitoring and Adaptive Management</p>	<p>recommendations</p> <ul style="list-style-type: none"> - data gaps - old inventories, availability and access to information in order to provide supporting evidence to submissions - unsure how much attention and weight is given to issues related to uncertainty (e.g. spruce pine beetle, climate change, permafrost, etc) - precaution only applied in terms of assessors best practice and good conscience as there is no stipulation in act for its application - more important for different departments given legislations - YESAA is set up to include and consider information from monitoring programs from previous projects and allows opportunity to inform future assessments - monitoring is not done enough across the country - linkages between predicted and actual effects not being made - adaptive management not done as often - lacking cumulative effects monitoring which is present in other northern regimes - broad based monitoring important in the Yukon given lack of land use plans - little follow-up is carried related to who is financially responsible - a more reactive model as oppose to a adaptive approach - adaptive management encouraged in YESAA legislation but provisions limit its application and it costs money - EA still remains a separate one-time process that needs to be carried out, while monitoring is ongoing and considered another hassle - important for large projects such as forestry and mining, but small type projects are often overlooked such as agricultural projects - only carried out if stipulated on the decision 	<ul style="list-style-type: none"> - not the responsibility of YESAB can only recommend it , as per Sec 1.10 in the act - monitoring is a good principle in EA - considers monitoring to be one of the weakest part in the act - lacks a feedback system into assessment process so that it can re-adjust and improve - YESAA and monitoring separate processes - some monitoring recommendations by YESAB can be too prescriptive and unrealistic 	<ul style="list-style-type: none"> - without monitoring what is the point of EA? - important in both north and south, but particularly in north given new technology - adaptive management – establish key variables and monitor in regards to triggers and thresholds so that adaptations and changes can be implemented that reflect changing circumstances - ensures mitigation is successful and ensures compliance and feedbacks into system to improve system and future recommendations and establish best practices for management and operation planning - what is point of EA without monitoring ? 	<ul style="list-style-type: none"> - concern over who pays for it - in north importance of datasets - need a good database to compare new data collected from monitoring, and understand system functions and components - therefore need for quality data for proper and effective monitoring - need a feedback process - need political will
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<p>7 - Monitoring and Adaptive Management (continued)</p>	<p>document</p> <ul style="list-style-type: none"> - monitoring information is not being shared with First Nations governments, if it is being carried out in their traditional territory - monitoring is very important - capacity issue for First Nations should monitoring need to be carried out on traditional territories - initiative needs to be established to feedback into system - legacies of poor monitoring in Yukon's landscape also northern issues such as climate change, permafrost, etc. make monitoring important - government departments are weaker than others in enforcement - socio-economic impacts should be monitored also 	
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