The Conference Board of Canada
Insights You Can Count On

Setting the Pace for Development

An Economic Outlook Report for the Northwest Territories

November 2002

Prepared by *The Conference Board of Canada*

Report

Acknowledgements

The study was made possible through funding by the Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. Special appreciation is extended to the various contibutors listed at the end of the report.

The research was conducted by Gavin Hales and Graeme Clinton, Senior Economists, Stephen Vail, Senior Research Associate, Cathleen Knötsch, Research Associate and Marie-Christine Bernard, Associate Director, under the direction of Luc Bussière, Director of the Economic Services Group.

About The Conference Board of Canada

The Conference Board of Canada is the foremost independent, not-for-profit applied research organization in Canada. We help build leadership capacity for a better Canada by creating and sharing insights on economic trends, public policy issues, and organizational performance. We forge relationships and deliver knowledge through our learning events, networks, research products, and customized information services. Our members include a broad range of Canadian organizations from the public and private sectors. The Conference Board of Canada was formed in 1954, and is affiliated with The Conference Board, Inc. that serves some 3,000 companies in 67 nations.

About the Economic Services Group

The Economic Services Group is a research division at The Conference Board of Canada. The Group's purpose is to address the specific information requirements of the Conference Board's Associates by conducting financed research. Services include customized economic forecasting at the municipal, provincial, and national levels; economic impact analysis; custom-tailored econometric models; consumer and business attitudes surveys; and analysis of the economic implications of changes in public policy.

TABLE OF CONTENTS

Executive Summary

INTRODUCTION

The last few years have seen an explosion of economic activity in the Northwest Territories (NWT). Canada's first diamond mine has opened, a second one is under construction, large-scale natural gas production has begun in the southwest and a number of firms are busy exploring other sources of natural gas and oil in various parts of the Territory. These developments have helped the NWT's citizens maintain their position as those with the highest levels of GDP per capita in the country. In addition, a range of further opportunities has been identified in both non-renewable and renewable resources that could intensify the transformation of the NWT economy already underway.

In developing these and other resources the NWT faces a number of substantial and unique challenges. Remoteness from markets, insecure property rights and a complex regulatory environment all work against economic development in the NWT. In some cases, the necessary physical and human capital and support services are scarce. These problems may be compounded when government lacks the means or incentive to promote potential developments.

Another key element governing the path and scale of economic development in the Territory is the desire that such developments be sustainable, diversified, and lead to improvements in the living standards of all residents. In the past, developments have not always respected the unique cultural and social aspects of the Territory's small but diverse population. They have also often harmed the local biological and physical environment, one that is particularly sensitive to disturbances. In addition, the course of economic development in the NWT has been subject to the unsettling effects of boom-and-bust cycles linked to non-renewable resources and sudden changes in the level of federal government transfers. As a result, NWT residents are keen that new developments should not lead to a repetition of the negative social and economic impacts that have been associated with such cycles in the past.

PURPOSE

The purpose of this report is to provide an independent assessment of the prospects for the NWT economy and of the structural issues that underlie its economic performance over the long term. The study has sought to identify the main factors influencing the economic competitiveness of the Territory and its industries within a framework that examines the broad capacity of an economy to generate wealth and improve the quality of life of its citizens.

This report builds on previous reports produced for the Government of the Northwest Territories (GNWT) and has benefited from discussions held with a variety of stakeholders in the NWT including government, business, and the non-Aboriginal and Aboriginal communities. This report is not intended to provide a list of solutions but rather to serve as a tool to assist the government and people of the NWT in making some key decisions about their socio-economic future.

Study Approach

In line with other work undertaken by the Conference Board, this analysis has been carried out within a context that considers economic growth to be only one determinant of quality of life. This approach also recognises how a society's values concerning this balance, and how the degree of cohesion in a society, can influence the pace and scale of economic development.

Our analysis of the NWT economy included an examination of four broad forms of capital necessary for wealth creation:

Natural capital: This includes the raw materials required for economic activity, such as land, wildlife, minerals, energy, as well as natural services provided by the environment, such as waste management.

Human capital: This includes a society's level of literacy, health and social wellbeing, education and skills status, and knowledge.

Physical capital: This includes the infrastructure or capital required for business and industrial purposes, such as investments, transportation infrastructure, power generation capacity, communications systems as well as housing, recreational facilities and hospitals.

Social/organisational capital: This encompasses the business and social environment within which economic activity takes place and explains how a society is organised to create wealth (e.g., system of governance, the regulatory system).

In general, the extent of wealth-creating capital in an economy dictates how an economy can develop, and also influences the success of this development. In the context of the NWT, it would be hard to examine the prospects for individual industries and the economy as a whole without an understanding of the resources available to generate growth. For example, the prospects for the mining industry depend in part on having a readily available pool of skilled labour. Similarly, the degree of trust between the various parties and the regulatory regime will affect the decision whether or not to proceed with building a major natural gas pipeline up the Mackenzie Valley.

Overview of the NWT

Chapter 3 of the report provides an overview of the NWT including a description of its people and history as well as the present economy and its performance. The Territory is the third largest jurisdiction in Canada in terms of landmass behind Nunavut and Quebec. Yet, the Territory is sparsely populated (42,000) with two fifths of the population centred in Yellowknife, another third in six smaller regional centres, and the remaining quarter of the population living in small, isolated communities. The population is split roughly in half between Aboriginal and non-Aboriginal people, with the majority of the non-Aboriginal population concentrated in the Yellowknife area. Although Yellowknife is the single largest centre of Aboriginal population in the NWT, most Aboriginal people live outside the city, and comprise a majority of the population in these areas. The Aboriginal population is comprised of several distinct peoples including the Inuvialuit along the Arctic coast and islands, the Dene—consisting of the Gwich'in, Sahtu, Deh Cho and Dogrib nations, and the Métis.

Aboriginal peoples have successfully negotiated land claims in respect to various parts of the NWT and are actively pursuing self-government. In recent years, political developments in the NWT have increasingly come to be a three-sided affair involving the federal government, the GNWT and Aboriginal governments. A formal forum for negotiations between the three parties, the Intergovernmental Forum, was set up after the division of the Territory with Nunavut. In addition, there are various other governmental bodies that have an influence on development in the Territory, such as the National Energy Board (NEB) and the Mackenzie Valley Environmental Impact Review Board (MVEIRB).

The beginnings of the modern NWT economy lie in the fur trade of the colonial period. Gradually the base of the economy has shifted to non-renewable resources and government as the fur trade declined and mineral and fossil fuels were discovered in the Territory. The size of the public sector continued to increase until the early and mid-1990s when the NWT was affected by the same fiscal retrenchment experienced by governments across Canada.

For two years in succession, the NWT has experienced the fastest rate of Gross Domestic Product (GDP) growth in the country. Measures of real GDP represent the scale of economic activity after the effects of inflation are removed. The year 2000 saw real GDP increase by 8.8 per cent, followed by an even steeper rise of 20.8 per cent the following year totalling $2,725 million in 2001. The largest contributors to GDP growth were the government sector and the construction work at the Diavik mine site. Oil and gas exploration together with increased diamond, gas and other mineral production have also boosted the level of economic activity in the Territory.

Another feature of the NWT economy is that the people and businesses of the NWT consume a much greater amount of goods and services than they produce. This resulted in a sizeable trade deficit of $412 million in real terms in 2001, or about 15 per cent of total output. A large part of this deficit is due to the resource sector's need to bring in specialised equipment and services from outside the NWT. As construction work draws to a close and production begins the size of this deficit can be expected to fall.

The NWT's unemployment rate compares favourably with the rest of Canada. The number of unemployed as a share of the labour force averaged 8.7 per cent for the last eleven months of 2001. While this was a little above the rate for the country as a whole it has fallen substantially as the pace of economic activity has picked up in the last few years. There have been significant differences in employment patterns between the more rural Aboriginal and more urban non-Aboriginal communities. Over the 1984-99 period about four fifths of the non-Aboriginal population of working age was employed. Rates for Aboriginal people were much lower, although they did rise steadily from 38 to 48 per cent over the period. In part this depends on the size of the informal economy and the extent to which Aboriginal people pursue traditional lifestyles. There has been some closure of this gap in recent years as employment opportunities outside the capital have increased, especially as many of the recent projects have been subject to provisions guaranteeing positions for Aboriginal people.

Since 1999 most employment gains have been in the goods-producing sector in line with the changing face of the NWT economy. The mining sector accounts for over a thousand of the total 20,800 employed in the NWT, not including those at the Diavik site. However, the public sector remains the most important overall employer providing jobs for about 7,200 people. Federal transfers have long driven the size of the public sector in the NWT. This high level of dependence means that the GNWT's spending plans are vulnerable to changes in federal government spending priorities.

Average personal income in 2000 in the NWT was $35,715, or about 32 per cent higher than in Canada as a whole. This difference is even more marked when various income taxes and social security contributions are removed. In 2000 average personal disposable income in the NWT was over two fifths higher than the national average. It is important to bear in mind the differences in living costs between the NWT and the rest of Canada when making such comparisons. Average incomes tend to be highest in those parts of the Territory where government and resource jobs are found, such as Yellowknife, Norman Wells and Inuvik, places where living cost differentials are also relatively low.

THE NWT'S FOUR FORMS OF WEALTH-GENERATING CAPITAL

Chapter 4 addresses the opportunities and challenges facing economic development in the Territory. This analysis includes an examination of values toward economic growth and industrial advancement and a detailed review of the Territory's four forms of capital necessary for wealth creation: physical capital, human capital, natural capital, and social and organisational capital.

Values play an important role in shaping the amount of wealth-generating capital in economies and, thereby, the potential for economic development in jurisdictions. Specifically, values influence our behaviours and the policy choices that a society makes. There are many values that are widely shared across the Territory, such as an attachment to the natural environment and a desire for greater local control over development. However, there does appear to be a divergence of views across the Territory in terms of the pace and nature of economic development that is acceptable based on differences in priorities of values. The values of the people of the NWT are not necessarily fixed and will continue to shift in response to changing socio-economic and environmental circumstances.

Closely tied to the issue of values is the concept of social cohesion. Although there is no universally accepted definition of this term, social cohesion usually involves a sense of trust present in society based on the coexistence of shared values and a respect for diversity. Social cohesion ultimately serves as the "glue" that keeps society and networks functioning properly. The level of social cohesion in a society can be a factor in economic outcomes. For example, increased levels of trust between members of a society may reduce uncertainty and the costs of doing business.

The Northwest Territories appears to have its own set of issues affecting levels of social cohesion. These issues include a lack of a territorial wide identity; a historical lack of political control by NWT residents and a lack of participation by the Aboriginal

communities in the NWT's economy, and significant income gaps among regions. However, in recent years, improvements have been made in these areas.

The Conference Board's examination of the NWT according to the four forms of capital revealed the following findings:

Natural capital: The NWT possesses abundant non-renewable and renewable resources. The degree of knowledge about the extent of these natural resources also appears to be reasonably good, although more resources for geoscience would be welcomed. The Territory's resources are spread across a vast area and provide the basis for many potential industrial developments. However, the uncertainty affecting the investment arising from unsettled land claims in some areas may delay some of these projects. Another more direct factor that poses unique challenges on development is the cold, dry arctic and sub-arctic climate of the Territory. Over the longer-term the potential impact of global warming on the NWT's renewable resources represents a major unknown risk.

Human capital: The population of the Territory is relatively young, and this should help the NWT maintain good labour force growth at a time when Canada as a whole will be experiencing a relative dearth of available workers. However, falling birth rates and rising life expectancy means the population has begun to age rapidly. The non-Aboriginal population appears to be relatively transient, a factor that influences the rate of net-migration into the NWT (in the past, migration has been a very important determinant of population growth). Many of the labour shortages that exist at present are restricted to those areas where development has been most rapid in recent years and pulled in temporary workers from outside the NWT.

In terms of health status, NWT residents are very close to the national rates for many health indicators such as life expectancy, weight at birth and level of physical activity. However, NWT features higher levels of communicable disease and rates of smoking, as well as a much higher level of deaths due to unintentional injuries. NWT residents also experience a relatively greater extent of social problems such as fetal alcohol syndrome, substance abuse and family violence. However, in most cases, these social conditions have either stabilised or are showing signs of improvement. Higher health care costs can be expected as the Territory's population ages in conjunction with the move to a more sedentary lifestyle and the presence of other risk factors such as smoking.

The overall level of education among NWT residents also compares favourably with national levels, while regions with lower levels of education are making substantial progress. Increases in education and training levels for residents of smaller communities will be important if these communities are to have the skills and attributes needed to deal with the likely downloading of responsibilities that will be part of the devolution and self-government processes.

Physical capital: The Conference Board's review of the NWT's physical capital suggests there are numerous areas in which investments are required. There are several small-scale strategic investments, such as the bridge-building program in the Mackenzie Valley and road upgrading, which could help industry and residents alike. Improving access to Internet services is another example of a strategic physical capital priority.

One immediate problem facing the NWT is the lack of housing in key centres (e.g., Yellowknife) and other areas where the resource industry is flourishing. This is having a short-term impact on the Territory's ability to attract labour as well as on quality of life. Many of the cost disadvantages that derive from the Territory's physical infrastructure stem from the small size of the local market, which precludes the realisation of economies of scale in many areas. Although NWT's lack of physical capital requires serious attention and will affect the pace of development, it is not expected to act as the critical barrier to economic and social development in the Territory.

Social/organisational capital: Social/organisational capital is seen as an area requiring a considerable amount of attention for the NWT. The investment climate of the NWT appears to suffer from a lack of clarity over the respective roles of governments and regulatory bodies. This uncertainty is compounded by the unknown form of governance structures that will emerge from the (lengthy) cycle of negotiations on devolution, Aboriginal self-government, and regionalisation.

There is a widely held view in the NWT of the need for more responsible government. Northerners feel that they lack control over the development, especially economic, of their territory and that those responsible are not accountable or do not exercise their mandate. The GNWT also has fewer fiscal powers than provincial governments, especially with regard to resource revenues, which reduces its ability to fund development projects.

Since the creation of the territorial government there has seen a gradual transfer of powers and responsibilities to it from the federal government. The GNWT is responsible for health, education, forest management, housing, municipal bodies, social services and taxation. The federal government retains control over land and resource administration. As such, it is responsible (sometimes in conjunction with the territorial government, Aboriginal and other bodies) for determining the scale of non-renewable resource development, sub-surface water rights, fishing and much of the regulatory process in the NWT with respect to the natural environment. Negotiations for a transfer of the administration and management of petroleum resources in onshore parts of NWT to the GNWT began in 1987, but have yet to be completed. There are many in the NWT who would like to see some acceleration of the gradual devolution of powers and responsibilities from the federal government to help overcome these potential barriers to development. The development of a devolution framework agreement between the federal government and GNWT is planned for the next two years. The framework agreement would then serve as the basis for negotiations of a final agreement between the two parties.

It is important to bear in mind that devolution is set to occur in conjunction with the settlement of Aboriginal land claims and self-government negotiations. To date three land claim agreements have been made between Aboriginal groups and the federal government: the Inuvialuit, the Gwich'in and the Sahtu. In 1995 the federal government made a decision to recognise the right of aboriginal self-government under the Canadian Constitution. As a result, the Dene, Métis and Inuvialuit began to seek recognition and implementation of their own governments.

Another important element in the NWT's organisational capital is regionalisation. The Northwest Territories is comprised of several regions. During the 1980s and 1990s, the GNWT worked towards regionalisation whereby government and other services would be made available in each of the regional economic hubs. While bringing services "closer to the people," there are many issues that arise such as flexible funding arrangements to meet local needs while ensuring each region's programming meets territorial standards, and supporting regions to make the necessary decisions while ensuring the accountability of local decision making. The devolution of powers and responsibilities from the federal to the Territorial and Aboriginal governments is set to reinforce the move towards regionalisation. Although the manner in which this will occur is not yet clear, this raises concerns as to how governments will co-ordinate policies and the delivery of services without increasing duplication of services and the complexity and size of government in the NWT. There is also a question of the capacity of small communities to manage the downloading of such an array of powers and responsibilities. Regionalisation must work toward more effective decision making rather than simply creating another layer of administration with little added value.

The regulatory system of an economy forms another aspect of public social and organisational capital, and can make an important contribution to the shaping of the investment climate. A well-run regulatory system can ensure that development meets the requirements of sustainability that appear to be prized by the people of the NWT. However, there is also concern about duplication within the regulatory system and about duplication of the consultation processes that regulators often require. Added to this is the potential for environmental assessment and environmental assessment review to delay a project.

In the NWT, any one of a number of regulatory bodies that are required to licence a project can refer the project for environmental assessment and/or review if the matter is felt to raise environmental or other concerns to the public. In all parts of the NWT, except for the Inuvialuit region, these referrals are made to the MVEIRB. The MVEIRB's mandate is to ensure that development is broadly sustainable. As such it encourages firms to consider the costs and benefits of development at the outset and so avoid potential large clean-up costs in the future.

Another aspect to the regulatory process in the NWT is the socio-economic and impact benefit agreements that firms sometimes make with governments and communities to ensure that projects are accepted. These often focus on ensuring employment quotas, financial compensation, social and other benefits to communities close to development sites. Over time the nature of these agreements have tended to move away from ensuring local employment, as the pool of available labour has shrunk, in favour of financial compensation. Such agreements have brought substantial employment and other benefits to local communities. Nonetheless, there is concern that the scale of previous agreements may shape expectations about future ones, expectations that not all projects will be able to meet.

In general, the fixed nature of the costs of regulation, environmental assessment and impact benefit agreements tend to weigh against small firms. This is particularly important in the case of the mineral explorations sector. Facing the same costs as larger firms, many smaller- and medium-sized firms feel that they are being pushed out.

The need to pay upfront deposits for site clean up can also impact more on smaller firms.

However, it does appear that firms operating in the NWT tend to accept the need to build trust, ensure developments are sustainable and garner local support, and that this relation-building and due-diligence will mean developments occur at a slower pace than in other jurisdictions. Nonetheless, it appears that there is potential for some streamlining of processes. “One-stop shopping” may not be feasible but better co-ordination may be. Rationalisation may also reduce the time-, financial- and human-resource burden on regulators and smaller communities.

SECTORAL OUTLOOK

Chapter 5 provides an outlook for the key sectors and sub-sectors of the NWT economy over the next several years. It considers the major factors that affect development in each sector in light of the availability of the four forms of capital previously detailed.

Non-Renewable Resources

Non-renewable resources will continue to be the focus of economic activity in the Territory in the years to come. Diamond mining, the natural gas industry and mining exploration have already breathed new life into many communities bringing income and employment and providing revenues for governments.

Mining

Mining for non-renewable minerals, both metallic and non-metallic, and mineral fuels, such as oil and gas, is one of the NWT’s largest income-generating industries. In 2001, the mining industry as a whole contributed $585 million, or 24 per cent, to the Territory’s GDP. This contribution consists of two direct activities: mineral exploration and mineral extraction. The NWT mining industry has been revitalised by the discovery of diamonds in the Slave Geological Province in 1991, which started one of the largest staking rushes in Canadian history. The rest of the 1990s in the NWT saw the discovery of several diamond deposits with economic potential and, in October 1998, North America’s first diamond mine was opened at the Ekati site in the Lac de Gras region northeast of Yellowknife. Construction of a second mine in the area at Diavik has begun and production is due to start in the first half of 2003. Furthermore, plans have been submitted to regulators for approval of a third development at Snap Lake, to the south of the other two mines. The scale of these developments is vast and the presence of the NWT’s diamonds is already being felt in world markets. Over the medium term the NWT still appears to be ahead of its competitors in the diamond-mining sector. However, diamonds have been discovered in other parts of Canada where operating costs are lower and investment regimes are seen as friendlier. On balance, the Conference Board feels that the probability of development of a third diamond mine in the NWT at Snap Lake site is fairly high. The prospects for development of additional sites over the medium to longer term, however, appear less certain.

As well as diamonds, the NWT possesses deposits of many other base and precious metals and minerals. There are two small gold mines operating in the Territory and some other sites, where production facilities were mothballed, are being reactivated.

However, price levels and the scale of identified deposits have not been strong enough to warrant serious development proposals of new sites up to now. At present, it would seem Con and Giant gold mines will close unless production costs can be greatly reduced.

Despite the richness of mineral resources found in the NWT, there are several major barriers to the mining industry in the NWT. The harsh climate, imperfect information on the potential of mineral resources, the relatively small skilled labour force, the relative paucity of local infrastructure and high transportation costs all make the NWT a high cost environment to operate in. However, it would appear that the chief matter of concern for the investment climate for the NWT non-renewable resource sector revolves around questions of governance. Strict and potentially overlapping regulatory requirements, the slowness of the regulatory process add to normal operating costs, as do the costs associated with impact benefit agreements. The importance of the role that costs play for the mining industry is amplified by the fact that commodity prices are determined on world markets.

Natural gas

The NWT is home to a small but prosperous natural gas industry with enormous potential. Current activity in southwestern parts of the NWT, Norman Wells and Inuvik will continue for at least twenty more years. The southwestern activity will also see some expansion with the gradual extension of pipelines tapping into newly found reserves throughout the Ft Liard and Cameron Hills regions. The potential lies in the development of a multi-billion dollar pipeline up the Mackenzie Valley from the Arctic Ocean to northern Alberta. This pipeline would link 60 trillion cubic feet (tcf) of natural gas in the Mackenzie Delta region to the North American market, with the potential of tapping into northern Alaska's 100-160tcf of reserves with a further pipeline running along the bottom of the Arctic Ocean. Construction and field development of the Mackenzie Valley Pipeline and the Mackenzie Delta reserves alone could contribute between $3.6 billion and $5.4 billion to Canada's overall GDP and add between 52,000 and 76,000 jobs (person-years). It is extremely important to note that NWT will not be the only benefactor of this investment, and that significant impacts will be felt in BC, Alberta, Ontario and Quebec, and by the federal government through income taxes and resource royalties.

There are factors that are causing uncertainty in this project’s future. First, market conditions in North America must be right for such an outlay of capital. Currently, prices are somewhat suppressed, but our long-term forecast suggests demand over the next twenty years will grow and prices will follow. Second, the existence of Alaskan natural gas reserves adds to the equation. Alaskans want the pipeline built along the Alaskan Highway and thus reap all the direct and indirect rewards of the project. Even though this route is considerably longer, suggesting it is less economic, other factors such as the environment, Aboriginal land claims, government and government lobbying clouds the picture. Because one route favours NWT and the other Yukon, the federal government has not backed either route.

This uncertainty surrounding the pipeline’s construction has created some interesting dynamics within the NWT. It has fostered greater cooperation between all levels of

government (federal/territorial/aboriginal) on issues of land claims, environmental assessment, other regulatory processes, and governance. It has also prompted the creation of the Mackenzie Valley Aboriginal Pipeline Corporation (MVAPC), which formed to present a united Aboriginal voice to the pipeline negotiations. The Group accepts that there is a lot at stake if governance and land claim issues are not dealt with. The potential development is also forcing the GNWT and Aboriginal groups to address issues of human capital. The project offers a tremendous employment opportunity during its construction and through continued exploration. However, if the Territory is to benefit, local residents have to be involved, meaning there must be a marked improvement in levels of skills among the working age population that will allow them to participate.

Renewable Resources

Hydroelectricity
The NWT possesses abundant hydroelectric resources. However, some uncertainty concerning its future development exists. There is some potential for small-scale hydro projects to serve individual communities. However, with the Territory's energy requirement largely met, large-scale expansion would be developed for the export market. To move in that direction, the public utility may require reorganisation in order to raise the necessary capital. Industrial users in northern Alberta and Saskatchewan would be the most likely purchasers of exported power. A long-term contract to these markets would be needed for justification of this spending. The potential supply of natural gas from the Mackenzie Delta and the Kyoto Accord represent positive and negative risks to future development of hydroelectric power generation in the Territory.

Forestry
The NWT's forestry sector is a small component to the Territory's overall economic outlook. Almost all of the exported timber is softwood, and travels to the US for value-added processing. The market is dictated by changes in North American demand and prices, which have been slumping in recent years. And like most industrial activity in the North, costs associated with the NWT's logging industry are greater than in other jurisdictions and therefore require higher prices to ensure profitability. Lately, as economic activity throughout the Territory has intensified, additional costs have had to be endured, such as increased labour shortage and higher wages.

Hunting/Fishing/Trapping
Hunting and fishing activities are important to many residents of the Northwest Territories. The overall involvement in fishing and hunting activities is high in both urban and rural areas, ranging regionally between 40 and 45 percent of the total population. And while it remains an important element of the cultural life of Aboriginal communities, it is becoming more of a lifestyle choice than an occupation. Mixed attitudes to development, high infrastructure costs and the lack of a solid supply base for establishing a reliable export industry tend to work against commercial development.

The wild fur trapping industry, once the mainstay of the NWT economy, is relatively small-scale in nature, dependent on fashion trends and animal population cycles. It faces product competition from abroad and from ranch-farms, as well as competition for labour from more remunerative forms of activity. Fur harvesting has been comparatively

low during the 1990s (generating, on average, less than $1 million in economic activity annually), and it appears that the economic prospects of the industry are limited.

Other Industries

Tourism

The economic contribution of tourism is modest at present. Recent growth in the industry has occurred through the growth of one single segment, the Aurora viewing industry, with the urban centre of Yellowknife being the main benefactor. Building on one individual segment for industry growth creates high vulnerability.

The Territory's cultural and geophysical diversity offers more than just outdoor experiences but an opportunity for its inhabitants to co-operatively manage land and resources in a sustainable way. Tourism, including related industries, can play a bigger part in the economy than they do now by taking advantage of niche markets and seasonal and part-time patterns. At present, the potential for a tourism market in the Northwest Territories, created by existing natural capital, cultural diversity and existing demand in the tourism market is offset by limited infrastructure, little community involvement in rural areas, and untapped opportunities in specific target markets.

Manufacturing

The long distance of the NWT from major centres of economic activity, combined with its low population, put it at a disadvantage in developing industries that rely on low transport costs and economies of scale. As such, manufacturing in the NWT is likely to remain small-scale filling specific niches and furnishing some of the needs of the resource sector. Diamond manufacturing is being promoted by the territorial government as a source of wealth-generation in the NWT. Growth prospects for the industry are dependent on the government’s ability to secure raw diamonds from the Diavik and Snap Lake mines.

Construction

The last few years have been ones of unprecedented boom for the NWT construction industry with the construction of the Ekati and Diavik mines and mineral exploration being the major driving force behind this. In 2001, the share of total output accounted for by construction shot up to over 17 per cent as building work at Diavik stepped up. In fact, construction accounted for nearly half of the total increase in real GDP in the Territory. The problems the industry is facing in the NWT at present mostly concern the relative lack of human capital in terms of education and skill levels as well as the available workforce. Many jobs in the industry require significant technical expertise and shortages of skilled labour are reported to pose a significant problem, one compounded by competition from Alberta and Saskatchewan. These pressures show no sign of letting up with the next year also set to be a busy one for the industry.

Arts and Crafts

The production and sale of arts and crafts employ a large number of people relative to the population but its economic value is not well documented. Aboriginal women in rural areas dominate production activity, representing about 85 per cent of all individuals involved in making northern crafts. Male participation is higher in selling arts and crafts, however, only 36 percent of producers are involved in selling the products. The sector is

fragmented and lacks product identity, presenting a challenge as well as an opportunity for the future. Demand for Aboriginal culture products has been established for several key European markets as well as the American and Canadian markets. Nevertheless, there are still significant information gaps associated with understanding the demand for these products.

Service sector

The prospects for the service sector are generally sound, given a reasonable outlook for resource development and the public sector. Improvements in communications technology are reducing the importance of location and may favour the development of exportable services from the NWT. However, there are several factors working against placing too much reliance on the high-tech sector and other business services as a mainstay of growth. These include a lack of persons with the necessary specialized skills and a dense network of high-tech firms and educational institutions in other regions of Canada.

CONCLUSIONS/STRATEGIC CONSIDERATIONS

The Conference Board has identified three strategic considerations affecting the shape of economic development in NWT. These observations will influence the long-term growth of the NWT and therefore should receive attention by all stakeholders.

Choosing an acceptable pace for developing NWT's economy

There are diverging views of how and at what speed the Territory should proceed with the development of its rich store of natural resources. Some believe that the current market is ripe for further resource extraction and that the Territory should take advantage of it while it can. Others believe that the Territory is already operating at or near full capacity and suggest slowing things down until local resources become available.

There are benefits and costs to both approaches, and they both hinge on the fragile nature of the outlook itself. It is possible that some of the anticipated projects such as the natural gas pipeline up the Mackenzie Valley and the diamond mine at Snap Lake may not take place. The outcome will depend in part on external events but also on decisions made by the people of the NWT. The challenge is to proceed in such a way as to maximise the benefits (secure all of the prospective projects along with the direct and indirect benefits) and minimise the costs (environmental, social, and opportunity costs) of the developments that currently exist.

The Conference Board of Canada cannot identify the acceptable level of economic development for the residents of NWT. We can only suggest that mechanisms be in place for residents to have an informed debate and to choose options based on a clear understanding of the tradeoffs associated with the pace of development chosen. In order for this to occur, there must be a sufficient level of trust in the Territory among stakeholders.

Laying a foundation for sustainable growth

Presently, the NWT economy is performing well, particularly with the addition of the new diamond mining industry. Can the NWT capitalise on the current boom to institute

improvements and services that will cushion the next economic downturn and lead to sustainable growth? This would involve dealing with problems related to human capital and social/organisational capital that hinder economic development in the NWT as well as determining an acceptable approach to physical capital deficiencies. The current success in the NWT should not mask these underlying socio-economic problems in the Territory, but rather take advantage of the current economic conditions to work constructively to tackle these issues. By doing so, the NWT will be better prepared to withstand its next economic downturn when it occurs. In addition, the NWT should seek greater natural resource diversification. Not only should the NWT work toward promoting and ensuring vertical integration of resource developers, mine suppliers and manufacturers within the Territory as it has done, but it should also promote a structure that allows for all sizes of operators to do business.

Achieving Effective Governance

Devolution to the GNWT, Aboriginal self-government and decentralisation to the regions (regionalisation) must all fit together in a coherent manner or risk building an organisational framework that is unstable or unworkable from the outset. The Territory cannot afford to be over-governed. *Common Ground* was meant as a focal point for the NWT at a time when there is a real probability of further Balkanisation. In its past, the Northwest Territories has undergone repeated divisions. Regionalisation, settlement of land claims agreements and the establishment of seven Aboriginal self-governments have the potential to divide the region further if they are not undertaken within a territorial wide context. This "common ground" should be sought, recognising the advantages of sharing a common vision most often outweigh those of acting independently, and dispelling concerns of further governance complications.

This report is an independent assessment of the NWT economy and of the structural issues that will likely influence its economic performance over the long term. A holistic approach was taken that allows for an analysis of several forms of capital that are required to support high economic performance and a high quality of life. Unlike many other jurisdictions, including its northern neighbours, the NWT is in the midst of considerable economic growth. The challenge is to ensure this growth can be sustainable over the long term while improving the quality of life of NWT residents.

1 Introduction and Purpose of Report

The last few years have seen an explosion of economic activity in the Northwest Territories (NWT). Canada's first diamond mine has opened, a second one is under construction, large-scale natural gas production has begun in the Southwest and a number of firms are busy exploring for other sources of natural gas and oil in various parts of the territory. These developments have helped the NWT's citizens maintain their position as those with the highest levels of GDP per capita in the country. In addition, a range of further opportunities has been identified in both non-renewable and renewable resources that could intensify the transformation of the NWT economy already underway.

In developing these and other resources the NWT faces a number of substantial and unique challenges. Remoteness from markets, insecure property rights and a complex regulatory environment all work against economic development in the NWT. In some cases, the necessary physical and human capital and support services are scarce. These problems may be compounded when government lacks the means or incentive to promote potential developments.

Another key element governing the path and scale of economic development in the territory is the desire that such developments be sustainable, diversified, and lead to improvements in the living standards of all residents. In the past, developments have not always respected the unique cultural and social aspects of the territory's small but diverse population. They have also often harmed the local biological and physical environment, one that is particularly sensitive to disturbances. In addition, the course of economic development in the NWT has been subject to the unsettling effects of boom-and-bust cycles linked to non-renewable resources and sudden changes in the level of federal government transfers. As a result, NWT residents are keen that new developments should not lead to a repetition of the negative social and economic impacts that have been associated with such cycles in the past.

1.1 Purpose of the report

The purpose of this report is to provide an independent assessment of the short-term prospects for the NWT economy and of the structural issues that underlie its economic performance over the long term. In line with other work carried out by the Conference Board, this is done within a framework that examines the broad capacity of an economy to generate growth and improve the quality of life of its citizens. At the same time, this approach considers economic growth to be only one determinant of quality of life and how a society's values concerning this balance can influence the pace and scale of economic development.

This approach has particular relevance for the NWT. Businesses, governments and communities appear to entertain differing views on what type and pace of development they find comfortable. Some see it as vital that assurances are made about minimising the impact on the social and natural environment and that the retention of local benefits be ensured before developments are allowed to go ahead. Others would not like to see potential opportunities go unrealised. In line with these differences, there is also a

divergence of opinion on just what are the main obstacles or opportunities to development in the NWT and how they should be overcome or encouraged. Nonetheless, it is important to note that the various key players in economic development in the NWT do share a variety of common concerns and a recognition of the importance of economic growth.

One of the main roles of this report is to analyse these issues from an external viewpoint and suggest some areas where consensus policies may be forthcoming. In doing so it builds on previous reports produced for the Government of the Northwest Territories and has benefited from discussions held with a variety of stakeholders in the NWT including government, business, the non-Aboriginal and Aboriginal communities.

Within this context, the study seeks to identify the main factors influencing the economic competitiveness of the Territory and its industries, especially those where potential major development projects have been identified, such as the oil and gas and mining sectors. These factors range from specific determinants, such as commodity prices, to broader aspects of the investment climate, such as the nature of the regulatory system. A detailed sectoral outlook will also take into account the impact that developments will have on other sectors of the economy, government revenues and the demographic structure of the NWT.

It should be noted that the report is not intended to be a decision-maker—it will serve as a tool to assist the government and people of NWT in making some key decisions about their socio-economic future.

2 General Approach and Methodology

In examining the prospects of an economy the Conference Board strongly believes that it is necessary to look beyond traditional macro-economic measures such as projected increases in Gross Domestic Product (GDP). Instead, it is necessary to undertake a broader examination of the overall ability of an economy to generate wealth-creating opportunities that can lead to improvements in the quality of life of its citizens. For example, the Conference Board's annual *Performance and Potential*[1] report tracks a broad range of socio-economic indicators in order to build up a picture of the success of the Canadian economy. Some of these indicators are strictly economic in nature, others look at Canada's performance in decreasing poverty and improving literacy, health care and innovation. This approach has also been used to assess the economic prospects of Canada's other two territories, Yukon and Nunavut.

Behind this approach is the belief that the ultimate goal of economic development is to ensure a high and sustainable quality of life. This goal puts people at the forefront of thinking about the economy and clearly identifies economic development as a means of achieving this goal, not just an abstraction associated with the "bottom line". Likewise economic success is an important part, but only one part, of what it takes to create a society that has a high and sustainable quality of life. Social outcomes, preservation of the environment, the existence of networks of family and friends, the extent of civic engagement are also important parts of determining what makes a society successful.

Nor is it enough merely to achieve a high quality of life, it is also necessary that this quality be sustainable over the long term. The concept of sustainability is broadly concerned with notions of viability and has evolved recently to encompass economic, environmental, and social issues.[2]

The Conference Board also recognises that economic and non-economic factors are not only important in jointly determining quality of life, but are also highly interdependent. For example, successful economic performance can generate the resources to provide for high-quality social programs that are important to citizens. Similarly, healthy, well-educated citizens living in vibrant communities are usually those best placed to deliver economic success. Thus, a society needs to perform well in both the economic and social spheres if it is to achieve a high quality of life.

The values a society holds also play an important part in determining the course of economic development. In the case of the NWT, the values held by individuals and communities will determine what constitutes a high quality of life and the policies that will be chosen to achieve this goal. These values will also determine the relative importance of economic outcomes within the overall range of factors that determine a high quality of life. In the NWT, for example, the strong attachment of Aboriginal

---

[1] The Conference Board of Canada's *Performance and Potential* report is released each year and provides an overall assessment of Canada's social and economic performance. This includes a comparison of Canada with six other industrialised countries. See http://www.conferenceboard.ca for more information on this report.

[2] "*The vision of sustainability for Rottnest Island*," I-Lyn Loo, Philosophy Department, University of Western Australia, Lecture Review Series.

communities to the land will help dictate the importance placed on establishing environmental safeguards. It will also affect the degree of labour mobility through the willingness to leave ancestral lands in search of employment opportunities. Likewise, the ability to live a traditional lifestyle or to enjoy the wilderness may be more valuable to some individuals than increasing their monetary income. However, it is important not to confuse the lifestyles that individuals actually lead with those that they would choose. For example some individuals may be forced into a subsistence lifestyle because of their inability to find a job in the labour market, others may have to take a job in order to support their hunting activities.

2.1 The four forms of capital

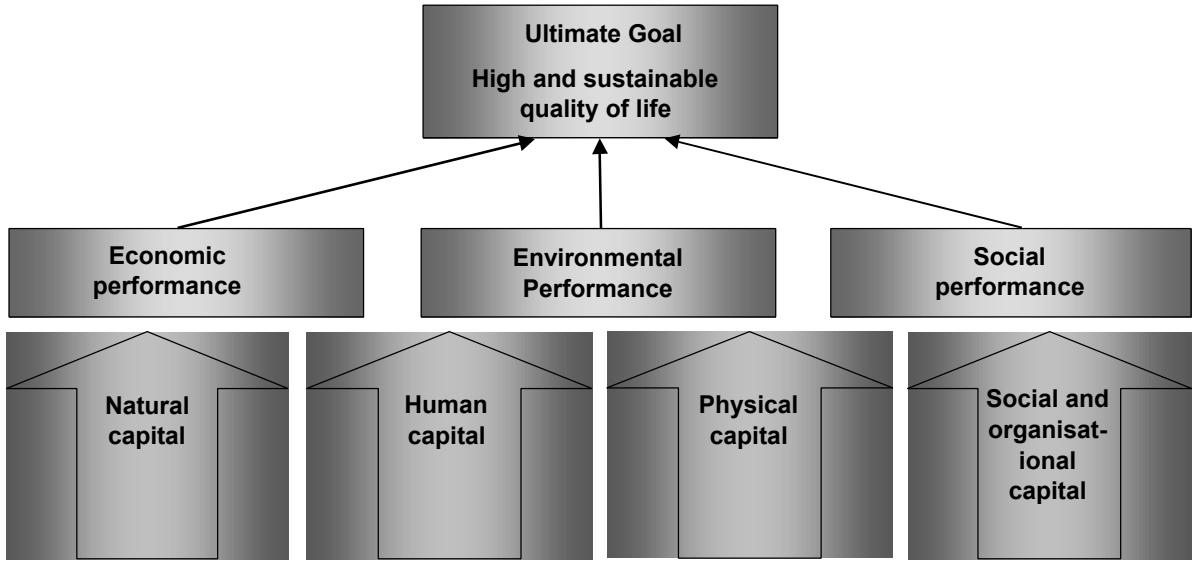
The variety of factors that contribute to determining the overall quality of life and the interdependence of economic and social factors in determining the success of an economy is reflected in the approach that the Conference Board has taken to assess the NWT. This approach considers four broad forms of capital necessary for wealth creation:

> *Natural capital* – This includes the raw materials required for economic activity, such as land, wildlife, minerals, energy, as well as services provided by the environment, such as waste management. Another aspect of natural capital is "natural knowledge" or the knowledge maintained within biological systems, such as ecological relationships that have evolved to support life in harsh regions.
>
> *Human capital* - This concept encompasses not only the quantity of human labour, but also its quality. Factors affecting this include a society's level of literacy, education and skills status, and knowledge. Health status and general well-being come into consideration, as do attributes such as personal motivation and discipline.
>
> *Physical capital* – This refers to the infrastructure needed to support economic production. This includes capital required for business and industrial purposes, such as transportation infrastructure, power generation capacity, communications systems and so on. It also includes other elements such as housing, recreational facilities and hospitals and investments that serve to reduce draw down from the stock of natural capital such as pollution-reduction systems.
>
> *Social and organisational capital* – This encompasses the business and social environment within which economic activity takes place and explains how a society is organised to create wealth. For example, the degree of openness to trade, the policies and fiscal actions of government and the nature of the regulatory system all play a role in economic development. Similarly, the size and efficiency of institutions, the nature of disparities of income and the social cohesion of a society are also relevant factors.

In general, the extent of wealth-creating capital in an economy dictates how an economy can develop, and also influences the success of this development. Take for example an economy with no natural capital; i.e., no renewable or non-renewable resources. In this case, wealth creation must come from secondary or tertiary markets, such as manufacturing, technology, or the service industry, whereby manufacturing

Exhibit 2-1

A Framework for Understanding Economic Development



Source: The Conference Board of Canada

relies heavily on well-developed infrastructure and technology-based goods and services rely on well-developed human capital.

In the context of the NWT, it would be hard to examine the prospects for individual industries in the NWT and of the economy as a whole without a solid understanding of the resources available to generate growth. For example, the prospects for the mining industry depend in part on having a readily available pool of skilled labour. Similarly, the degree of trust between the various parties and the regulatory regime will affect the decision whether or not to proceed with building a major natural gas pipeline down the Mackenzie Valley. Thus, it is important to consider the range of capacity of the NWT to generate growth. It is also important to note that one form of capital cannot be substituted for another, but rather they are often compliments. For this reason, it is considered essential that investments in society be broad based to ensure improvements in standard of living are sustainable over the long term.

This discussion echoes the growing recognition by economists, developers, and community leaders that achieving sustainable growth is a complex matter. "Creating community wealth is about more than making money; it includes the riches of family and friends, healthy workplaces, vibrant neighbourhoods, and the preservation of natural areas."[3] Whole wealth has become a broad notion that embraces human, social, natural and economic capital, and balancing the long-term growth of all forms of capital is the best way to ensure a community will reach a viable and sustainable standard of living (see Exhibit 2-1).

[3] "*On practising community capitalism*" Tyler Norris, Community Initiatives, January 1, 2000.

SUSTAINABLE DEVELOPMENT

One way of assessing the sustainability of growth is to consider the full impacts of growth on all four factors of wealth production. For instance, in the case of physical capital stocks conditions for economic growth are established when their expansion takes place. This expansion occurs when an economy's consumption is less than total production, leading savings to be, in theory, invested into capital.

To address sustainability here requires a consideration of savings and investment to apply to all four of the factors of wealth creation. When expansion of physical capital comes at the cost of present day or future environmental impacts, then the erosion of natural capital may erase the bottom-line value of the apparent savings. Similarly, an increase in the labour force (human capital) that comes at the cost of family well-being (social capital) may result in no net savings to be applied toward expanding productive potential.

Following this argument, the United Nations has suggested that sustainability can be achieved "in the context of 'genuine savings' — when the per capita consumption of a society, fully accounted for, is less than the total per capita output of the society, fully accounted for."[4] Here, "consumption" and "output" includes natural and environmental goods and services, as well as human, social and cultural factors. It is a challenge of sustainable development to integrate the value of these non-monetary factors into all levels of political and commercial decision-making. Considerable efforts are currently underway in Canada and in other jurisdictions to identify measurable indicators that can be used to assess the state of these factors.[5]

This report uses this framework of the four forms of capital to assess the Northwest Territories' economic future. This will bring to light the areas in which immediate success can be found, and those where further investment is needed. Where available, the study draws on examples of best practice from other jurisdictions in encouraging specific industries. This assessment will then serve as a basis for examining the prospects of the individual sectors of the NWT economy. Before all this though the report will provide a brief overview of the NWT and describe its position within the national and global economy.

2.2 Methodology

This study benefited from a wide review of existing literature on the NWT, including a variety of economic strategy papers already developed for the GNWT. Where necessary this review was supported by the Conference Board's own quantitative analysis.

---

[4] As quoted in the Conference Board's *Performance and Potential 2000* report, p. 11.

[5] For example, the Bellagio Principles for Assessing Progress Toward Sustainability, identified a range of generic text criteria for sustainability. These principles call for holistic thinking, considering the full range of both positive and negative implications of an activity over multiple time horizons, addressing issues of equity and disparity both within present-day populations, and between generations, along with a range of other dimensions. The Bellagio Principles are fully presented by Peter Hardi and Terrence Zdan in a 1997 paper, *"Assessing Sustainable Development: Principles in Practice"* available at the International Institute for Sustainable Development web site: http://iisd.ca/measure/1.htm

Another essential element of the overall analysis of the potential for economic development in the NWT was a series of interviews conducted with a variety of stakeholders. The input received from representatives of government, business and aboriginal organisations helped the Conference Board gain an insight into a variety of aspects of the economic development process in the NWT.

2.3 Layout of the report

This report is presented in six chapters. After the introduction and this chapter, Chapter 3 presents an overview of the NWT and its economy. This chapter also discusses the importance of developments at the national and global level for the NWT's economic outlook.

Chapter 4 moves on to address the potential for economic development in the Territory, and the constraints it faces, based on its endowment of the four broad factors of wealth creation (physical capital or infrastructure, human capital, natural capital, and social and organisational capital). This chapter also includes a discussion on values and how they have and will continue to shape the NWT's socio-economic development.

Chapter 5 examines the development potential of individual industrial sectors of the territory's economy. These sectors have been broadly divided into non-renewable industries, such as mining and oil and gas, and industries based on renewable resources, such as tourism and hydroelectric power generation.

The final chapter summarises the discussion and identifies the key issues that need to be considered in the NWT. Various appendices, acknowledgements and references are attached to the end of the report.

3 Where We Stand Today

3.1 Overview of NWT

Covering 1.172 million square kilometres, or nearly 13 per cent of Canada's landmass, the sheer size of the NWT is immense. Only Nunavut and Québec cover larger parts of the Federation. The Territory is bounded by the Arctic Ocean to the north, Nunavut to the east, Saskatchewan, Alberta and British Columbia to the south and Yukon to the west (see Exhibit 3-1). The NWT is drained by Canada's longest river, the Mackenzie, and also contains two of the world's largest lakes, the Great Slave and Great Bear lakes.

Geologically the Territory comprises seven zones, many of which are rich in renewable and non-renewable natural resources. The largest of these is the Taiga Plains eco-region that roughly coincides with the Mackenzie Valley. It also contains the northern part of the Western Sedimentary Basin, a basin that contains significant deposits of fossil fuels. Deposits of oil and natural gas and other minerals, including gold, diamonds and base metals, can also be found in the regions above the tree line. The Slave Geological Province in the east is also the site of significant mineral deposits and is the home to the gold mines of Yellowknife and the diamond mine at Ekati.

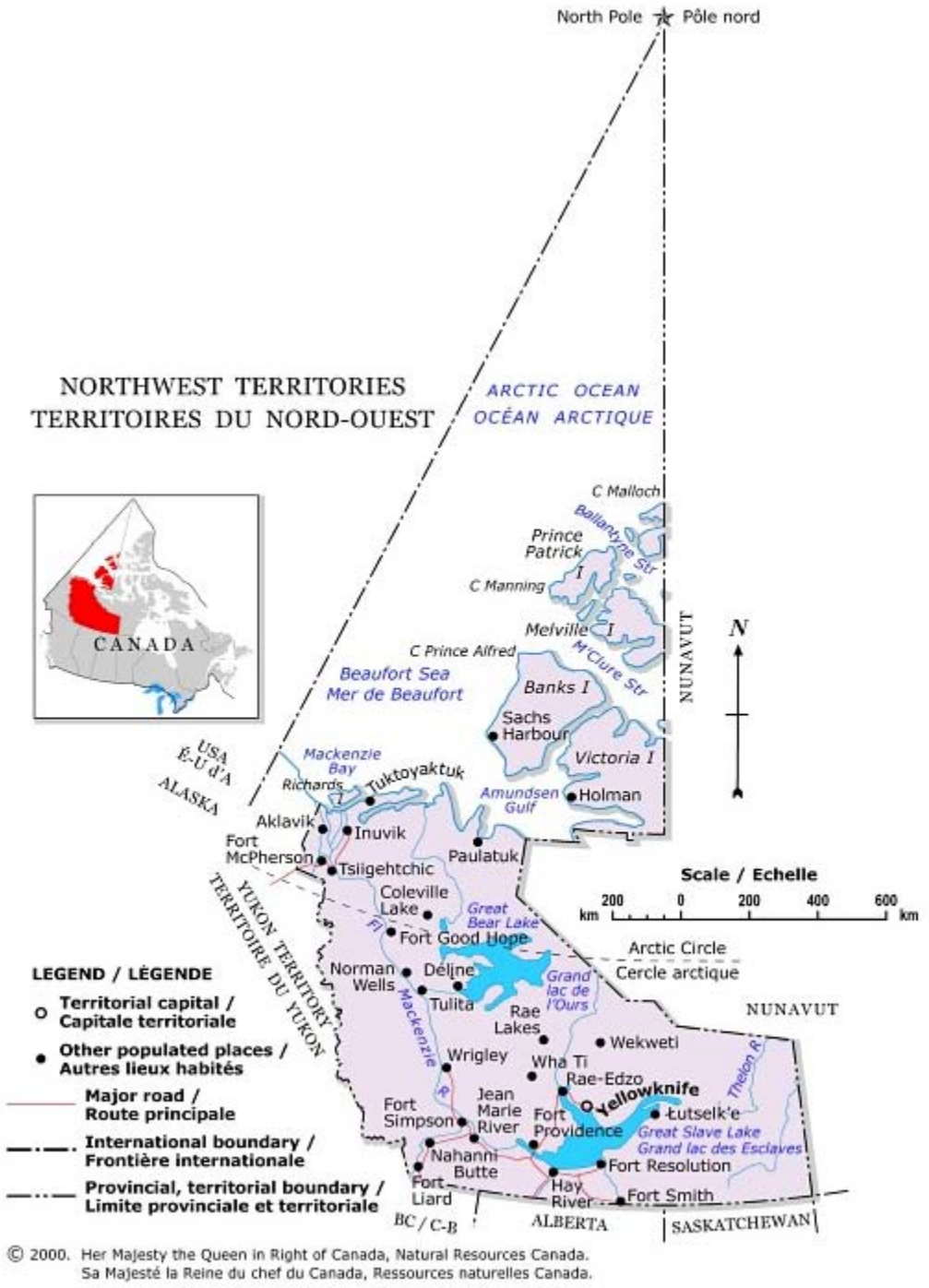
While the geographical area of the NWT is immense, it is only sparsely populated. In July 2000 the total population was estimated at about 42,000, over two fifths of whom live in the capital, Yellowknife. Another third of the population lives in one of six other regional centres (Hay River, Inuvik, Fort Smith, Rae-Edzo, Fort Simpson and Norman Wells), none of which has a population greater than 4,000. Most of the remaining quarter of the population lives in one of 26 other scattered small communities.

The population of the NWT is young compared to the rest of Canada. However, it has begun to age rapidly in recent years and the Territory is beginning to face some of the same demographic challenges facing other societies. The people of the NWT, in particular the Aboriginal community, also continue to be challenged by other problems, such as relatively heavy rates of drug addiction, domestic violence and fetal alcohol syndrome and fetal alcohol effects. Many also lack the employment and life skills necessary for work in the wage economy.

In terms of its ethnic composition, the overall population is split almost half-and-half between non-Aboriginal people, concentrated largely in Yellowknife and other principal centres, and Aboriginal people concentrated largely outside the capital. Although Yellowknife is the largest centre of Aboriginal population in the NWT, most Aboriginal people live outside the city, and comprise a majority of the population in these areas. By contrast, the majority of the non-Aboriginal population lives in Yellowknife. In recent years, the share of the Aboriginal population has been rising as heavy out-migration reduced the number of non-Aboriginals in the Territory. In 1996 48.2 per cent of the population was Aboriginal. By 2000 this share had risen to 50.7 per cent.

Exhibit 3-1

The NWT



Source: Natural Resources Canada

While the ethnic composition of the population of the NWT is usually described in terms of Aboriginal and non-Aboriginal, it is important to note that the Aboriginal population is not a homogeneous group, being composed of a diverse number of peoples. The Dene form the largest grouping of Aboriginal peoples in the NWT and are spread across most of the Territory south of the Arctic coast. This loose grouping consists of a number of Aboriginal peoples including the Gwich'in, Sahtu, Deh Cho and Dogrib. The Inuvialuit form the western branch of the Inuit people and live mostly in the Inuvialuit Settlement Region along the Arctic coast and islands. There is also a sizeable Métis population in the NWT.

The diversity of the Territory's population is reflected in its cultural and linguistic characteristics. The NWT recognises eleven official languages. These include Chipewyan, Cree, Dogrib, Gwich'in, North and South Slavey, and three Inuit languages (Inuktitut, Inuvialuktun and Innuinaqtun), in addition to English and French. Nonetheless, English dominates in most spheres and Aboriginal languages continue to face a struggle to maintain their existence. The 1996 census showed that just over half of those who had an Aboriginal language as their mother tongue spoke it at home.

HISTORY

The present area of the NWT has been a home to Aboriginal people for thousands of years. Up to and following the arrival of Europeans, Inuit and Dene bands lived a largely nomadic lifestyle based on hunting. The first European presence came in the eighteenth and nineteenth centuries as fur traders established a network of trading posts across the North. Missionaries reinforced this presence from the mid-nineteenth century and the first RCMP presence was established in 1903 at Fort McPherson.

The foundation of the Dominion of Canada marked another major milestone in the history of the region. The Northwest Territories first become part of Canada in 1870 with the Territory covering all of present-day Alberta and Saskatchewan and parts of the current NWT, Nunavut, Manitoba, Québec, Ontario and Newfoundland and Labrador. Since then, however, the boundaries of the Territory have been shifted substantially on numerous occasions. In 1880 the Arctic islands were added to the Territory and the NWT's borders were pushed further northwards in 1925 in accordance with the extension of Canadian control to the North Pole. Apart from these additions, however, the NWT has seen its extent successively reduced as other territories and provinces have been formed and extended. The Yukon Territory was established in 1898 and the provinces of Alberta and Saskatchewan in 1905. In 1912 Manitoba, Ontario and Québec were extended northwards to their present borders. The last major change to the map of the NWT came in 1999 when the new territory of Nunavut was formed from the northern and eastern two thirds of the Territory.

The first half of the twentieth century saw the government of Canada gradually extend its presence in the area of the current NWT, in particular as the region's resource potential became more apparent. Two treaties were signed with Aboriginal groups, namely Treaty 8 in 1899 and Treaty 11 in 1921. However, encroachment on traditional hunting grounds and the decline of the fur trade made the late nineteenth and early twentieth centuries a difficult period for Aboriginal peoples in the NWT. Starvation and disease regularly affected their communities. Mission-run schools were established to

educate Aboriginal children, an arrangement that often involved children being separated from their families for extended periods. After the Second World War church-run schools were replaced by government ones, and many parents of Aboriginal children settled into permanent communities for the first time in order to be near their children. Meanwhile, the non-Aboriginal population shot up as the discovery of gold at Yellowknife led to the rapid development of the town in the 1930s. The run-up to the Second World War also saw the discovery of oil at Norman Wells in the Sahtu region.

Exhibit 3-2

Important Dates

1870 NWT joins Canada

1925 Last major change to NWT's boundaries prior to creation of Nunavut

1947 First northerner appointed to the Territorial Council

1951 First elected members join the Territorial Council

1966 Yellowknife made capital of NWT

1969 GNWT created

1975 Fully-elected Territorial Council takes power

1977 Berger Commission report

1982 Plebiscite in favour of creation of Nunavut

1984 Official Languages Act passed

1984-93 Settlement of Inuvialuit, Gwich'in and Sahtu land claims

1999 New territory of Nunavut created from eastern and northern two thirds of the NWT

The post-war period saw significant changes in the way the NWT was governed. For the first part of the century the Territory was run from Ottawa by an appointed council. Gradually elected representatives were added to the council until a fully-elected body took power in 1975. The Government of the Northwest Territories (GNWT) had been created a few years earlier at the end of the 1960s with Yellowknife as its capital. At the same time Aboriginal people also began to take on a higher political profile and the first fully-elected Council contained a majority of Aboriginal members. In 1983 the first Aboriginal premier, Richard Nerysoo, took office and the following year saw the passage of the *Official Languages Act* recognising Aboriginal languages.

Aboriginal groups also began to make land claims in respect to various parts of the NWT and pursue the idea of self-government. To date these moves have resulted in the settlement of the Inuvialuit, Gwich'in and Sahtu claims in the lower Mackenzie Valley. The largest settlement by far, though, involved the Inuit of the eastern Arctic. In 1977 the NWT Inuit Land Claims Commission proposed splitting the NWT to create a new territory of Nunavut, a proposal confirmed in a 1982 plebiscite. This, in turn, started a process which resulted in the settlement of the Nunavut land claim in 1994 and set out the path that lead to the creation of the new territory in 1999.

In recent years, political developments in the NWT have increasingly come to be a three-sided affair involving the federal government, the GNWT and Aboriginal governments. A formal forum for negotiations between the three parties, the Intergovernmental Forum, was set up after the division of the Territory. The Aboriginal governments are represented by an umbrella organisation, the Aboriginal Summit, while the federal government is represented by the Department of Indian Affairs and Northern

Development (DIAND), who acts as the lead federal department in the NWT. Outside of these bodies there are various other governmental bodies that have an influence on development in the Territory, such as the National Energy Board (NEB) and the Mackenzie Valley Environmental Impact Review Board (MVEIRB). The roles and responsibilities of the various branches of government will be explored further in the next chapter.

3.2 NWT Economic Overview

The beginnings of the modern NWT economy lie in the fur trade of the colonial period. Gradually the base of the economy has shifted to non-renewable resources and government as the fur trade declined and mineral and fossil fuels were discovered in the Territory. The 1970s and 1980s saw the opening of new mines and the development of the Norman Wells oilfield. In 1985 a pipeline was built to transport oil from the oilfield to Alberta. The 1970s also saw the first launch of a plan to build a pipeline down the Mackenzie Valley to ship natural gas from the Mackenzie Delta. This proposal was shelved after the 1977 Berger Commission recommended a ten-year moratorium on development in the Mackenzie Valley reflecting Aboriginal concerns about development and the unsettled nature of Aboriginal land claims. The idea has been relaunched in recent years as attitudes towards development have changed and the price of natural gas increased. Events took a step further at the start of 2002 when two groups representing producers and Aboriginal communities, the Mackenzie Valley Producers Group (MVPG) and the Mackenzie Valley Aboriginal Pipeline Corporation (MVAPC), came to an agreement allowing for the initial regulatory groundwork to be laid.

The same underlying factors that led to the revival of interest in the pipeline have also led to an upsurge in prospecting for oil and gas along the Mackenzie Valley and the Mackenzie Delta-Beaufort Sea region. This has already resulted in the start of natural gas production in the Ft Liard region from where gas can be shipped out using extensions to the existing pipeline grid “south of 60”.

The mining sector has also seen a revival after the mine closures of the 1990s. The discovery of diamonds in the NWT in 1991 led to a prospecting rush in the Slave Geological Province and in 1998 North America’s first diamond mine was opened at Ekati. This mine alone accounts for about 6 per cent of world production by value and a second major mine is under construction at Diavik. Other deposits have been identified that may be developed in the future. A tungsten mine and a lead-zinc mine have been recently reopened.

The NWT also possesses a variety of renewable resources. At present, it has some hydroelectric power generating capacity and the GNWT is currently investigating the feasibility of developing these resources further. The Taltson, Bear and Mackenzie rivers have been identified as sources of immense potential for hydroelectric power generation. The NWT also has a small but flourishing tourist industry catering to campers, hunters and visitors coming to see the Northern Lights. In recent years the construction sector has benefitted from the boom in mine and house building and mineral fuel prospecting. Forestry, agriculture and manufacturing, and traditional economic activities also play modest roles in the territorial economy.

In addition to the resource sector, the public sector has historically accounted for a major share of economic activity in the NWT. The apparatus of government and the services it delivered also increased significantly before and after the creation of the territorial government. The size of the public sector continued to increase until the early and mid-1990s when the NWT was affected by the same fiscal retrenchment experienced by governments across Canada. This coincided with a downturn in the fortunes of the mining sector and saw the overall NWT economy suffer. The upturn in the mining sector in the latter part of the 1990s coincided with the relaxation of government spending controls.

GROSS DOMESTIC PRODUCT

The measure most commonly used to assess the scale of economic activity in a region is Gross Domestic Product (GDP). GDP is the sum of the dollar value of all final goods and services produced in an economy over a given year. Measures of real GDP represent the scale of economic activity after the effects of inflation are removed. Statistics exist for the three years since the division of the Territory and show that real GDP in the NWT amounted to $2,725 million in 2001. Nominal GDP stood at $2,920 million.

For two years in succession, the NWT has experienced the fastest rate of GDP growth in the country. The year 2000 saw real GDP increase by 8.8 per cent, followed by an even steeper rise of 20.8 per cent the following year. Table 3-1 provides a breakdown on an expenditure basis, in real (1997 basic) prices, of the NWT's GDP for the two years. This shows the importance of the government sector and the impact of construction work at the Diavik mine site on the Territory's economy. Oil and gas exploration together with increased diamond, gas and other mineral production have also boosted the level of economic activity in the Territory.

The boom in investment spending has had a significant impact on the structure of the NWT economy. In nominal terms, some $1,122 million was spent by businesses on non-residential structures in 2001, up from $575 the previous year and $295 million in 1995. As a result, business investment spending on buildings and machinery excluding housing amounted to 38 per cent of final domestic demand in real terms, compared with 14 per cent at the national level. In per capita terms, this represents the highest rate in the country and is close to seven times the national average. However, this heady pace of growth cannot be

Table 3-1

Real GDP at market prices, expenditure-based
(in millions of 1997 dollars)

	2000	2001
Personal Expenditure	887	913
Goods	433	445
Services	454	468
Government Expenditure	969	1,017
Goods and Services	893	918
Fixed Capital Formation	76	99
Business Fixed Capital Formation	722	1,273
Final Domestic Demand	2,578	3,203
Inventory investment	24	12
Exports	1,151	1,321
Imports	1,482	1,733
Statistical Discrepancy	-16	-78
Total GDP	**2,255**	**2,725**

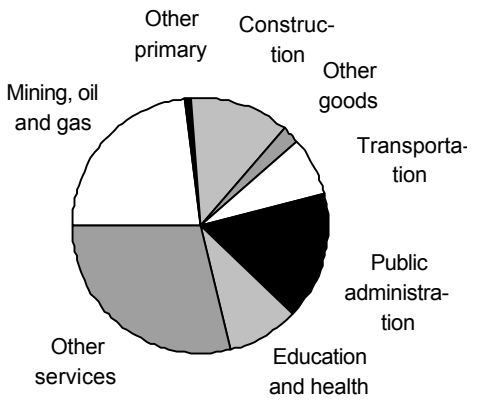
Source: Statistics Canada

maintained indefinitely, especially as construction at Diavik nears completion. Spending on structures can be expected to fall, although that on machinery and equipment can be expected to increase for a while before it too tails off in the absence of any further major construction projects. Investment intentions data show that firms and governments intend to spend another $1,268 million in 2002.

Despite the large scale of private investment spending, the government continues to occupy an important place in the Territory's economy. In real terms, total government spending on goods and services – which includes spending by federal, territorial, and municipal bodies – amounted to an average of a third of total domestic demand for the 1999-2001 period, compared to about 19 per cent for Canada as a whole. Chart 3-1 shows the average contribution of the different sectors of the NWT economy to total GDP between 1999 and 2001. Oil and gas production amounted to almost a tenth of the economy's output with the rest of the mining sector contributing a further 13.5 per cent. Most of the remaining output of the goods-producing sector was accounted for by construction activity. Manufacturing output amounted to less than one per cent of GDP. The public sector, by contrast, made an important contribution to overall GDP. Public administration, health, social services and education accounted for just over a quarter of total output. The GNWT accounts for about half of all public administration output and also provides a major share of the income of the education and health sectors. The federal government accounts much of the remaining sector output followed by local governments.

Chart 3-1

Real GDP by industry



Source: Statistics Canada

This breakdown confirms the relative concentration of the NWT economy in resources and government compared to the rest of Canada. Over the first three years that the new NWT has been in existence, 23 per cent and 25 per cent of output in the NWT came from the primary and public sectors, respectively. By contrast, these two sectors accounted for just 6 and 16 per cent of total output in Canada as a whole.

Another feature of the NWT economy, apparent from Table 3-1 and Chart 3-1, is that the people and businesses of the NWT consume a much greater amount of goods and services than they produce. This resulted in a sizeable trade deficit of $412 million in real terms in 2001, or about 15 per cent of total output. A large part of this deficit is due to the resource sector's need to bring in specialised equipment and services from outside the NWT. As construction work draws to a close and production begins the size of this deficit can be expected to fall. The NWT runs a substantial international trade surplus through the export of minerals, one that

amounted to $310 million in 2001. By contrast, the NWT ran a deficit of some $705 million with the rest of Canada. Data from Statistics Canada for 1999 show that about a third of the NWT's imports from other provinces came from Ontario with Alberta accounting for a further 27 per cent. Québec and BC each accounted for about a sixth.

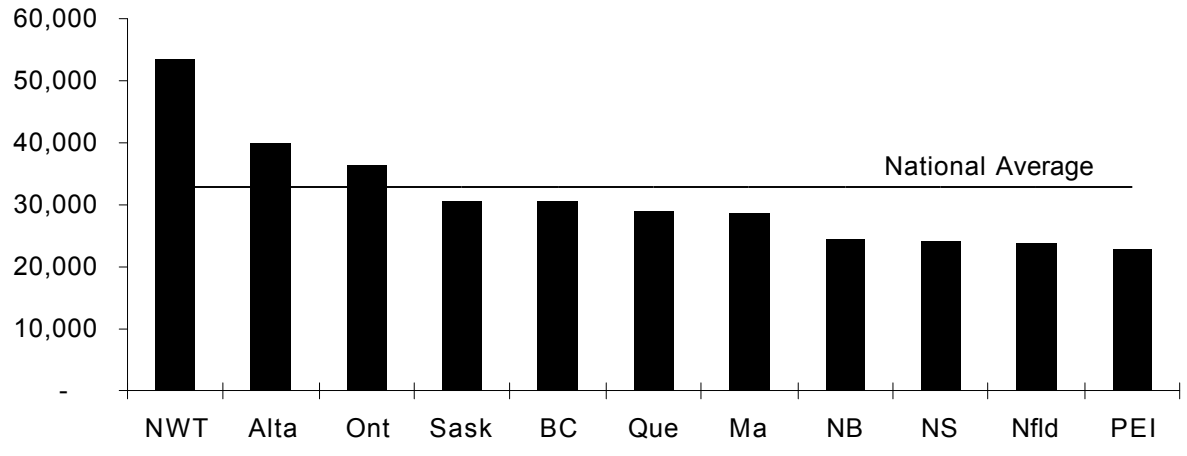
In order to make comparisons of economic wellbeing GDP is often expressed in per capita terms. Chart 3-2 shows that at $53,600 the people of the NWT enjoyed the highest real GDP per capita in the country for the year 2000. This figure is 63 per cent higher than the average for Canada as a whole, which stood at $32,800.

The use of GDP as an indicator of wellbeing has many shortcomings. For example, the mining sector contributes a considerable amount to the Territory's GDP but a good share of this is paid in the form of profits to shareholders outside the NWT. In 2000, profits accounted for 24.5 per cent of GDP at market prices in the NWT. By contrast, the same ratio for Canada as a whole was only 12.1 per cent. In addition, GDP does not measure economic activity done outside the market. A caribou caught and consumed by a hunter and their family is not counted as part of GDP whereas meat purchased in a store does. The NWT, like many rural areas, has a large informal economy that is not captured by standard economic statistics.

Another factor complicating comparisons between the NWT and other jurisdictions south of 60 is the relatively high cost of living in the North. Most goods have to be shipped in from outside the Territory and the long distances to be travelled add to the cost of these goods to consumers. Much of the services consumed by NWT residents also come from outside. In 1997, living costs in Yellowknife were estimated to be about a fifth higher than in Edmonton. These differences become even greater outside the capital and as distance increases from the principal transportation corridors, being highest in those communities with no road access.

Chart 3-2

Real GDP per capita, 2000



Source: Statistics Canada; NWT Bureau of Statistics

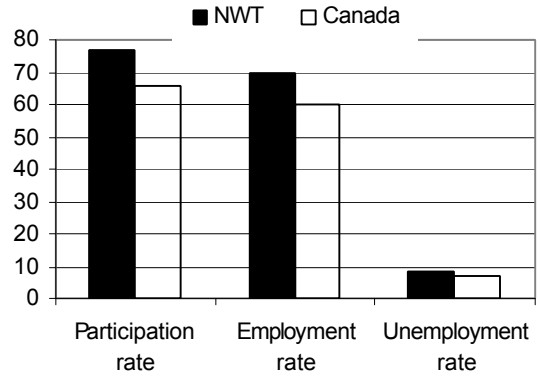
EMPLOYMENT AND UNEMPLOYMENT

Measures of employment and unemployment provide important indicators of the state of an economy. In the NWT a monthly survey of about 400 people tracks information on the state of the labour market across the Territory except for the smallest communities. This shows that the unemployment rate, the number of unemployed as a share of the labour force, averaged 8.7 per cent for the last eleven months of 2001. While this was a little above the rate for the country as a whole it has fallen substantially as the pace of economic activity has picked up in the last few years. A 1999 survey showed that the unemployment rate stood at 13.7 per cent at that time. This fall in unemployment has not come as a result of people withdrawing from the labour force. Over the same period the employment rate, the number employed as a share of the total population aged 15 or over, rose from 67.5 to 69.8 per cent.

Chart 3-3

Labour force activity[1], 2001

(per cent)



[1] For first eleven months of the year for NWT.

Source: NWT Bureau of Statistics, Statistics Canada

A much higher proportion of the population of working age is in work compared to Canada as a whole (see Chart 3-3), where only 61.2 per cent of the population aged 15 or over was in work in 2001. This difference is even more marked in the case of women. Similarly, labour force participation rates are higher in the NWT than in Canada. This situation of high employment and participation rates largely reflects a relatively younger population and fewer seniors in the NWT's population.

There are significant differences in employment patterns between the larger and smaller communities. In part this depends on the size of the informal economy and the extent to which people pursue traditional lifestyles. Employment rates in Yellowknife have averaged over 80 per cent with those rates outside the capital city ranging between 50 and 60 per cent. There has been some closure of this gap in recent years as employment opportunities outside the capital have increased. This state of affairs is also reflected in differences in employment rates between the more rural Aboriginal and more urban non-Aboriginal communities. Over the 1984-99 period about four fifths of the non-Aboriginal population of working age was employed. Rates for Aboriginal people were much lower, although they did rise steadily from 38 to 48 per cent over the period. This figure has most likely increased further given the general improvement in the labour market situation in the Territory since 1999. More importantly, many of the recent projects have been subject to provisions guaranteeing positions for Aboriginal people.

Since 1999 most employment gains have been in the goods-producing sector in line with the changing face of the NWT economy. The mining sector accounts for over a

thousand of the total 20,800 employed in the NWT, not including those at the Diavik site. However, the public sector remains the most important overall employer providing jobs for about 7,200 people.

WAGES, INCOMES AND INCOME DISTRIBUTION

The major source of income for most people in Canada and the NWT is the money they earn from employment, and is directly related to their living standards. Average wages and overall annual income are higher in the NWT than in Canada as a whole. In January 2002, average weekly earnings stood at $871 for the NWT compared to $672 for Canada. This partly reflects the high proportion of the Territory's labour force in relatively higher paying jobs in government and resource sector. The same is true for annual income. Average personal income in 2000 in the NWT was $35,715, or about 32 per cent higher than in Canada as a whole. This difference is even more marked when various income taxes and social security contributions are removed. In 2000 average personal disposable income in the NWT was over two fifths higher than the national average.

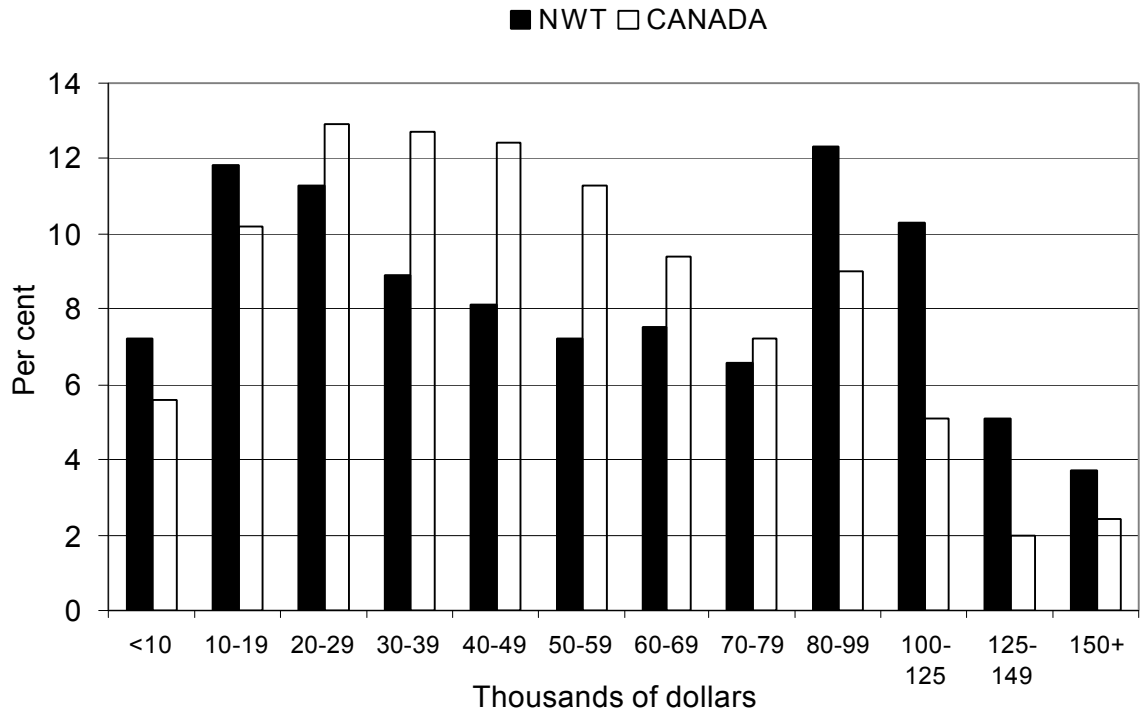
Again it is important to bear in mind the differences in living costs between the NWT and the rest of Canada when making such comparisons. This becomes more important when considering the distribution of income across the NWT. Average incomes tend to be highest in those parts of the Territory where government and resource jobs are found, such as Yellowknife, Norman Wells and Inuvik, places where living cost differentials are also relatively low. In 1999 average employment income in Yellowknife was estimated at $41,870 compared to $19,822 in Paulatuk, a small community on the Arctic coast with no road access and where living costs are estimated to be 50 per cent higher than those in the capital.

This picture of a relatively uneven distribution of income in the NWT is reinforced when considering overall family income in the NWT and Canada. According to the 1996 Census, median family income in the NWT was $53,218 compared to $46,951 for Canada. However, this hides substantial disparities in income. Chart 3-4 shows the income distribution in Canada and in the NWT in 1996. It shows that the NWT has relatively more higher income families, with 31.4 per cent having a family income of $80,000 dollars or more, compared to only 18.5 per cent in Canada. However, the Territory also has a relatively higher number of lower income families; 19 per cent of families in the NWT had incomes of less than $20,000 in 1995. The figure for Canada was 15.8 per cent. Thus, income appears to be more evenly distributed in Canada than in the NWT where family incomes are more concentrated at either end of the spectrum.

The rise in employment opportunities in the NWT spurred by developments in the resource sector may, however, have had a positive effect in relieving some of these disparities. One indicator of this trend is the reduction in the numbers of people receiving income support. In 1995 10.6 per cent of the population was receiving income support benefits. Five years later this figure had fallen to 7.2 per cent. In the smaller communities of the Territory the fall was even sharper with the share of the population receiving benefits falling from 19.6 to 12.2 per cent between 1996 and 2000.

Chart 3-4

Income Distribution, Canada and the NWT, 1996



Source: Statistics Canada

3.3 Putting the NWT economy in a global and national context

The NWT's long history of fur trading and more recently of exporting its mineral resources underline the integration of the NWT into the global economy and the importance of trends in the global economy for its success. The importance of the outside world for the NWT will provide both threats and opportunities in the years ahead. Globalisation, the increasing integration of the North American economy and changes in technology have a bearing on development in the NWT. In addition, many of the prices of key commodities for the NWT are determined in world markets.

Trends at the national level also have an impact on the NWT. They help determine the size of the market for the NWT's products and have a bearing on the NWT's ability to attract labour from other areas. The importance of transfers from the federal government to the NWT means that the outlook for fiscal policy is also of interest to the Territory. This section will explore the shorter- and longer-term issues at play in both the global and Canadian economies.

PROSPECTS FOR THE WORLD ECONOMY

In 2001 the world experienced one of its weakest growth rates in the past two decades as all three of the world's largest economies experienced slow periods of growth. The US was already suffering from the aftermath of the downturn in the technology sector when the September 11th terrorist attacks struck. At the same time Japan continued to suffer from deep-rooted structural problems while weak domestic demand and high unemployment hampered growth in Germany.

Recent developments in the US support the view that its economy should rebound in 2002. Consumer confidence is on the rise, energy prices have fallen from their highs and the impact of eleven successive interest rate cuts appears to be having an effect. Fiscal stimulus is also forthcoming. A recovery in business investment appears to be a little further off, though. Many firms still have excess capacity after the investment boom of the late 1990s. Nonetheless, there are some signs that the market for technology products is beginning to pick up, a factor that should help some of the smaller Asian economies, which are heavily reliant on exports to the US. As growth in the US increases interest rates will rise to head off any inflationary pressures.

The start of 2002 also witnessed the birth of the Euro as twelve countries of the European Union abandoned their separate currencies for a common one. The European Central Bank has been keen to keep inflation under control and has not cut interest rates as deeply as the US Fed. As a result, growth in the "Euroland" countries is expected to be more sluggish than that in North America, but will pick up over the course of the year.

The problems facing Japan, particularly its banking sector, are more deep-rooted. The country continues to suffer from deflation and the government has exhausted its fiscal and monetary policy levers in trying to get the economy back on track.

Overall, the global economy should recover gradually from the slowdown in economic activity that was experienced last year. Over the next decade, economic growth will improve as both Asia and Latin America recover. With this recovery will be a rise in the prices for many commodities, which is certainly good news for Canada and the NWT. Another positive is that inflation is expected to remain subdued in most industrialised economies.

There are numerous other longer-term changes taking place in the global economy that will affect the NWT economy. Arguably one of the most important of these changes taking place is the process of globalisation. Globalisation is the process whereby markets for goods, services, capital and labour are becoming increasingly integrated around the globe. The process of globalisation was illustrated only too well during the creation of the worldwide bubble in the technology sector and its subsequent deflation. For Canadians, trade agreements with the United States and in multilateral forums has given a big boost to both trade and investment. It has also meant lost jobs in certain sectors, as some industries were no longer able to compete.

On balance, though, the record of increased international trade and investment on growth and living standards is positive - the respective paths followed by South and North Korea serve as a good example. Increased trade promotes competition and

allows firms and regions to exploit their comparative advantage, benefit from economies of scale. It can also lead to a diffusion of knowledge as firms and individuals are exposed to new goods, processes and technologies. In order to benefit from these possibilities it is important for jurisdictions to have regulatory, taxation and infrastructure settings that are attractive to domestic and outside investors.

Closer to home, the North American economy has become increasingly integrated in recent years. In 2001, Canada exported $351 billion worth of goods to the US, equivalent to 32 per cent of total (nominal) GDP, up from 14 per cent in 1986. The importance of this North-South trade is made clearer when considering that between 1986 and 2000 the share of interprovincial trade in output rose from 17 to only 20 per cent of GDP. The increasing integration of industries is also evident from the nature of the auto industry in the Great Lakes region to the *maquiladoras* of the Mexican borders. The construction of the Alliance pipeline to ship natural gas from the Canadian Rockies to US markets serves as an example of increasing integration in the energy sector. While European-style integration is unlikely in the years ahead, the pace and scale of economic integration is set to continue. It is likely that the future will also see increasing integration of labour markets and in the environmental and social policy arena.

Another important change in the global economy has been the rise of the service sector. One by-product of globalisation has been the transfer of some labour-intensive manufacturing operations to low wage countries. As the manufacturing base of many industrialised economies has been eroded, the service sector has risen in prominence. The service sector includes industries such as financial services, restaurants and government. In some industrial economies today, the service sector can account for up to three-quarters of total employment.

The computer age has also had an important impact on economic activity around the globe. Increasingly we are living in a knowledge-based economy. It used to be that a high-school dropout could find a good job in the trades but that era is rapidly drawing to a close. Trade occupations themselves are becoming themselves technically more demanding. Today's knowledge worker is required to have strong literacy and mathematical skills in order to obtain a well-paying job. In addition, training and education—either on the job or at an educational institution—is seen as critical to success.

Linked to the rise of the knowledge-based economy is the increasing importance of information technology. The impact of new communications and other information technology is staggering—witness the geometric growth of the Internet. Communications has allowed new work arrangements such as telecommuting, teleconferencing and many other activities that we take for granted. It has also been associated with improved productivity. The impact of information and communications technologies on economic activity around the world has already been astounding and this rapid pace of technological change is set to continue for years to come. Nonetheless, the high-tech revolution is not likely to continue for ever and rapid rates of investment in machinery and equipment cannot be extended in to the long term without having bizarre implications for the underlying structure of economies such as those of the US and Canada. Although any forecast of technological change has to be treated with a large degree of caution, current physical limits suggest a maturing of central

processing unit technology towards the end of this decade and of applications, especially in the communications field, in the middle of the following decade. Provided these structural changes unwind in an orderly fashion, growth in investment and other categories of aggregate demand should return gradually to trend levels.

With their abundant natural resources, Canadians have been known around the world as “hewers of wood and drawers of water”. Around 40 per cent of Canada’s exports are still resource-based. As a result, one of the more worrying trends for Canada and the NWT has been the long-term decline of commodity prices. However, increasing demand for both oil and natural gas over the next two decades should bolster prices for these two commodities in real terms. Similarly, the NWT is well placed to take advantage of declining reserves in other parts of North America and the increasing viability of currently unprofitable reserves as extraction techniques improve.

PROSPECTS FOR THE CANADIAN ECONOMY

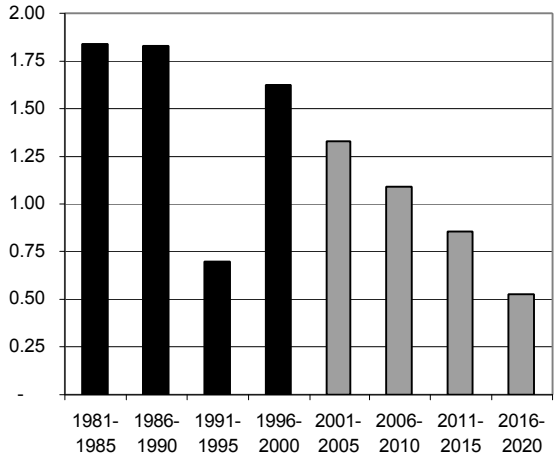
The performance of the Canadian economy in recent years has been stellar. During the latter part of the 1990s, the unleashing of pent-up demand, a vibrant US economy and the completion of major structural changes pushed average real GDP growth to 4.4 per cent. However, monetary tightening in 2000, a crash in investment spending and falling business and consumer confidence, reinforced by the September 11th terrorist attacks led to a considerable slowing of growth. However, there are already signs that the economy has begun to recover and the sound structural base to the economy should ensure healthy economic performance over the medium term. Employment has risen sharply in the first few months of 2002 and consumer confidence has been increasing. As a result, growth is expected to rise to 3.6 per cent for the year as a whole, up from a mere 1.5 per cent in 2001. Between 2003 and 2006 the Conference Board expects GDP to grow at an average rate of about 2.9 per cent.

Over the long term, growth is expected to weaken to an average rate of 2.7 per cent in the 2007-10 period before easing further to 2.4 per cent in the following decade. The main reasons behind this are a general slowing in the pace of technological change, which will weaken investment spending, and an increasing labour shortage (see Chart 3-5) associated with the ageing of the population. Pressure on labour markets across Canada will increase as the baby-boom generation begins to retire and a simple extension of historical labour force participation

Chart 3-5

Labour force growth in Canada

(per cent)



Source: The Conference Board of Canada, Statistics Canada

rates would result in a forecast shortfall of a million workers by 2020. Clearly some things will have to change. Increasing labour shortages are likely to push up real wages providing an incentive to replace costlier humans with relatively cheaper machines, a move that should also lead to increases in productivity. Higher wages should also encourage some workers to remain in the workforce who would have otherwise retired. Population ageing will also put pressure on the health sector.

Inflation is not expected to exceed levels outside target zones set by the Bank of Canada. The Bank is set to maintain its attachment to price stability, something that will lead to a tightening of monetary policy over the near term. As the baby-boomers begin to retire and the pool of available savings is reduced real interest rates will rise once more. After 2012, though, interest rates are set to remain fairly stable.

In addition to these trends, one must keep in mind governments' fiscal situation for the next several years. First, from the federal perspective, it would appear that there is some financial room to support increased federal spending on programs if so chosen. A recent Conference Board of Canada report has estimated that without any changes in spending, the federal government is expected to have its surplus grow steadily to almost $20 billion in 2010 and rising to over $85 billion by 2020.[6] Much of the surplus funds, at least in the short term, will likely be directed to health care following federal government statements related to the release of the final report of the Romanow Commission on the Future of Health Care. On the provincial/territorial level, however, the fiscal outlook appears quite different. Barring any structural changes to spending or taxation, most provinces/territories will face budgetary deficits through to 2010 and beyond.

[6] The Conference Board of Canada, *Vertical Fiscal Imbalance: Fiscal Prospects for the Federal and Provincial/Territorial Governments* (Ottawa: The Conference Board of Canada, 2002).

4 The NWT's wealth-generating capital

4.1 Values

Values play an important role in shaping the amount of wealth-generating capital in economies and, thereby, the potential for economic development in jurisdictions. Specifically, values influence our behaviours and the policy choices that a society makes.

Values are strong beliefs that reflect our expectations about how people in a system should behave. Values are usually slow to change. More often than not, what occurs is a change in priority among values rather than outright changes. For example, there could be a decrease in support for following a collective approach to economic development over time and an increase in individual responsibility or vice versa. Changes or shifts in values can be caused due to changes in environmental, social or economic conditions.

It is also possible for societies to hold conflicting values or values that appear to conflict. For example, people may express support for more jobs but at the same time be opposed to further development in their region.

All citizens in a jurisdiction may not share the same values—NWT is no different in this respect than any other jurisdiction. But there may be some values shared by large segments of populations within the jurisdiction. Knowing more about widely shared values can help public policy makers understand the types of policy choices acceptable to their constituents. In essence, these common values can be used as a foundation for economic development in NWT.

How does one measure values? There is no universally acceptable method to identifying societal values. Examples of methods include surveying the population on attitudes, reviewing government and other public documents from the community in question, or using focus groups where people are asked questions designed to identify dominant values at play. A key question is whether values are changing with each generation, particularly with the large youth cohort in most Aboriginal communities.

A previous Conference Board of Canada report found that Canadians' values, like those of citizens in many other industrialised countries, have shifted over the past thirty years. These shifts include:

- a decline in trust and confidence in government over the past several years;
- the emergence of fiscal responsibility and government accountability as high priority for most Canadians; and
- support for greater personal responsibility and self-reliance as well as policies that promote equality of opportunities rather than equality of outcomes. This has resulted in government programs and policies being redirected towards providing people with

equal opportunities to succeed based on personal effort rather than re-balancing income differences.[7]

A review of the literature and our discussions with key stakeholders revealed a number of prominent values at play across communities in NWT that are likely to influence economic development. These include:

- *Attachment to the natural environment*. For many residents, a connection to the land is strongly associated with their identity and a high quality of life. Harvesting off the land is still undertaken by a significant portion of the Territory's population. Harvesting not only provides a source of healthy food and income (e.g., furs) but also serves an important cultural and social role for many Aboriginal residents. Given the importance of the natural capital for so many residents and the fragile nature of the northern ecosystem, there is a strong commitment by many to the notion of sustainable development.
- *Recognition that economic development is also an important factor influencing quality of life*. The Aboriginal community is now receptive to industrial development, accepting that there is "no return to a self-sufficient living on the land". Support for economic development among Aboriginal people does not mean an abandonment of the traditional way of life or placing greater importance of development over the environment. For many, there is a strong desire to achieve an acceptable balance between the two. A quote from the 2002 GNWT budget captures this point:

  > *We have heard people throughout the Northwest Territories stress the importance of a balance between the environment and the economy. Residents say, "We want jobs. We want business opportunities and growth to continue. We want new revenues for Aboriginal and public governments. But we also want clean water, clean air, unspoiled land, and healthy fish and wildlife."*[8]

- *Self-determination*. There is a strong desire by the people of NWT to have greater control over how NWT's economy is to develop. Self-determination can take on various forms within the Territory. From the a territorial wide perspective it can mean having greater control by the people and the Government of Northwest Territories over decision making related to resource development. From an Aboriginal perspective, self-determination can mean Aboriginal groups having political control that can then serve as the basis for control over other sectors such as natural resources.
- *Respect for local community decision making*. People appear to identify more with their local community than to the Territory. Subsequently, communities need to have the latitude to make their own choices.
- *A collective approach to socio-economic development and the sharing of economic wealth*. For many Aboriginal communities, economic development projects that are

---

[7] *"Canadian Values Challenge the Canadian Way"*, Stephen Vail, The Conference Board of Canada, 2000.

[8] "*Budget Address Northwest Territories, 2002-2003*", Northwest Territories Department of Finance, February 2002, p.7.

seen as “community-owned” are more acceptable than those that are individually owned . However, this tendency for collective action and shared responsibility for the socio-economic security of others may be waning as the wage economy takes hold.[9] Furthermore, the impact of a growing class of Aboriginal entrepreneurs may challenge the dominant collective approach, particularly as many government programs are targeted to the individual entrepreneur rather than the community as a whole.

There are certainly other prominent values held by the various societies residing in NWT. For example, many Aboriginal people support the use of traditional knowledge. Traditional knowledge is a continuous knowledge base covering all aspects of daily life including living off of the land. This knowledge has been handed down from generation to generation.

But there also appears to be a divergence of views on the pace and nature of economic development that is acceptable based on differences in priorities of values. The Aboriginal community is keen to avoid past experiences that resulted in damage to the environment and where benefits of development bypassed them. As a result, Aboriginal communities tend to place a heavy weight on ensuring that they will share in the benefits of any developments and that due respect is paid to their heritage, languages, traditional knowledge and high regard for the land in the regulatory and environmental assessment process.

At the same time, other individuals are not anxious to let go current (risky) opportunities and would be willing to see several major projects go ahead. The resultant royalty and other revenues could then be used to provide benefits to all NWT residents.

However, it is important to note that these divisions are not clear-cut. Many non-Aboriginals place a heavy weight on environmental protection. Likewise, there are differences within the Aboriginal community. For example, those with settled land claims appear generally more comfortable with promoting development. Although, even within groups without settled land claims, there are differences of opinion.

With the NWT running at more-or-less full employment, some people appear content with the current pace of development. Others are not overly anxious to see the way of life of the NWT change through an influx of migrants. Again this viewpoint needs to be contrasted with those who would indeed like to see developments occur and have no objections to these goals being achieved by increasing the territory’s existing human resources.

The above values have been and will continue to face tension as socio-economic and environmental changes occur in NWT. For example, is there support for pursuing economic development on a regional level rather than on a community level so that costs and benefits are shared among communities? How will today’s children of the NWT come to define a high quality of life?

---

[9] “*State of Knowledge Report: West Kitikmeot/Slave Study Area*”, prepared for West Kitikmeot/Slave Study Society, April 1999, p.142.

SOCIAL COHESION

Social cohesion is a concept that has received considerable attention nationally and internationally in recent years. It has no universally accepted definition but social cohesion usually involves having on the one hand, some common values and on the other hand, a tolerance for diversity leading to a sense of trust that ultimately serves as the "glue" that keeps society and networks functioning properly.[10] According to Jenson, social cohesion includes five dimensions:

- *Belonging/isolation:* social cohesion signifies sharing values, a sense of being part of the same community
- *Insertion/exclusion:* social cohesion supposes a largely shared market capacity, particularly with respect to the labour market
- *Participation/passivity:* social cohesion calls for involvement in the management of public affairs, in partnerships and in the voluntary/non-profit sector, as opposed to political disenchantment
- *Recognition/rejection:* social cohesion considers pluralism not just a fact but a virtue, that is, the tolerance of differences
- *Legitimacy/illegitimacy:* social cohesion supposes the maintenance of public and private institutions that act as mediators in conflicts.[11]

The level of social cohesion in a society can play a role in economic outcomes. For example, increased levels of trust between members of a society can reduce uncertainty and the costs of doing business. Alternatively, low levels of trust, ethnic tensions, wide disparities of income leading to low social cohesion can have a negative impact on the economy. There is concern among some policy makers and academics around the world that social cohesion within jurisdictions is weakening due in part to globalisation and a perception that income and knowledge gaps are increasing within societies.

The Northwest Territories appears to have its own set of factors that may affect levels of social cohesion in the territory. First, identity based on a territorial-wide level appears to be weak. As stated in *Common Ground*:

> *Aboriginal people in the North have a much stronger identity, but in relation to their traditional land. They identify with that land, but they do not necessarily identify with the territory as a whole*.

This lack of a territorial wide identity is due to many factors, including the various changes in the extent of the Territory, the changing economic and political structure of the NWT and the relatively rapid pace of development of recent decades. In its present

---

[10] A recent Canadian Heritage paper defines social cohesion as being "based on the willingness of individuals to co-operate and work together at all levels of society to achieve collective goals." M. Sharon Jeannotte et al., Buying in or Dropping Out: The Public Policy Implications of Social Cohesion Research (Hull, Quebec: Department of Canadian Heritage, February 2002).

[11] "*Mapping Social Cohesion: The State of Canadian Research*", Jane Jenson, CPRN Study No. F/03, 1998.

guise, the Territory is a relatively new political entity with part of its land and identity being removed with the recent formation of Nunavut. There are several different regions in the NWT comprising distinct Aboriginal peoples including the Dene, the Inuvialuit, the Métis, along with many people of Western or European heritage and people from other regions around the world. In addition, there are a number of people who work in the territory but who reside outside of NWT.

Low levels of social cohesion can also be attributed to the lack of political control by NWT residents and to the lack of participation by the Aboriginal communities in the NWT's economy. It is less than a century since Aboriginal people have made the transition from a semi-nomadic lifestyle to permanent settlements, a move that brought substantial social dislocation in its wake. Aboriginal communities have also had negative experiences with economic development in the past, such as in Inuvik in the 1970s, and some communities continue to experience problems, such as in the Ft Liard region. These concerns might be expected to result in a cautious approach to development. In addition, as identified in Chapter 3, there are significant income gaps in the NWT that could also potentially contribute to problems in social cohesion among populations in the Territory.

However, in recent years, the Aboriginal community has developed greater capacity to confront such issues. Aboriginal people are now in positions of power, are recognised as separate partners in inter-governmental negotiations in the NWT, have substantial control regarding environmental assessment, and a greater degree of control over their own lands than in the days of the Berger Commission.

There are many current examples demonstrating a willingness among different peoples in NWT to co-operate:

- An Aboriginal Summit has been established representing eight tribal Inuit, Métis and Dene governments to focus on common issues. It participates in the Inter-Governmental Forum as part of a desire to see government-to-government-to-government agreements. The four main themes it is working on involve economic development, capacity building, devolution, and resource revenue sharing.
- The MVAPC was formed in Ft Liard in January 2000 by a group of Aboriginal leaders who are seeking up to a third ownership in the proposed pipeline. This attempt at ownership is in line with Aboriginal leaders' movements in the sphere of revenue-sharing, devolution and self-government. These developments are also aimed at building capacity and ensuring that Aboriginal groups maximise their share of the benefits of development.
- The City of Yellowknife and Yellowknives Dene have been working on a Memorandum of Understanding (MOU) for a more communicative relationship between the two parties. Among other things, the MOU calls for annual joint council meetings, the formal sharing of budgets and planning documentation, and the creation of a joint working committee to negotiate contentious issues.[12]

[12] "*City, Yellowknives draft a better relationship*" Nathan VanderKlippe, Northern News Services, April 17, 2002.

The way in which the benefits of development are distributed regionally can also affect the degree of social cohesion. In the NWT, socio-economic and impact benefit agreements concluded for a variety of developments have played a major role in determining how economic benefits have been distributed among the local population. They have contributed to rising incomes and employment and falling social assistance rates. Recent agreements have tended to focus on equity participation rather than employment guarantees, especially as the pool of available labour has shrunk.

It is important to note, however, that these agreements are local in nature and tend to favour those living closest to the developments. This desire for the retention of local benefits, and the attitudes it shapes towards development, has to be balanced against the desire for wider distribution of benefits. These issues are compounded somewhat by a limited willingness to move to where opportunities exist. Some have suggested extending mine catchment areas. However, firms have little incentive to do so, nor do those who benefit from existing arrangements. Similarly, there appears to be a need to co-ordinate regional development plans.

4.2 Natural Capital

Natural capital is one of the bases of an economy's wealth-generating capital. Natural resource endowments are not only essential to natural resource extraction industries, but also are important to industries that need to attract tourists and new residents to the Territory. Natural capital includes the raw materials required for economic activity, such as land, wildlife, minerals, energy, as well as the natural services provided by the environment, such as waste management. Another aspect of natural capital is "natural knowledge" or the knowledge maintained within biological systems, such as ecological relationships that have evolved to support life in harsh regions.

Conservation of natural capital is also important if economic development, in both the wage and non-wage economies, is to be sustainable. Preservation and improvement of the environment can also impact directly on quality of life. Global warming, hazardous waste dumps, contaminated natural resources and the loss of traditional knowledge are of concern to NWT residents.

4.2.1 LAND

The availability and suitability of land for development and the degree of access to that land are important factors in determining the extent of an economy's natural capital. For example, although the area of the NWT is vast only a very small proportion of it is suitable for agricultural purposes. About 4.3 million hectares of land in the southern regions of the Territory, or 3.7 per cent of the total area of the NWT, falls within Classes 1 to 3 of the Canadian land classification system,[13] which are considered as being able to support some arable or pasturage-based activities. However, the geological structure and variety of different eco-zones in the NWT means that the Territory possesses rich deposits of mineral fuels, base and precious metals. The Territory is also rich in forest cover, an obvious prerequisite for the timber industry. The NWT also possesses the

[13] "*Common Ground*", Economic Strategy Panel Final Report, GNWT, June 2000, p.29.

basis for a hydroelectric power generation industry in the form of several major rivers. The presence of large tracts of unspoiled wilderness and major parks also make the NWT an attractive place to visit and live in, although the Yukon does offer stiff competition in this area.

In terms of access to the land, most of the NWT comes under the control of the federal government and, to a lesser extent, Aboriginal groups with settled land claims. A large share of the remaining parts of the Territory are subject to ongoing land claims by Aboriginal groups such as the Deh Cho, Dogrib and the Akaitcho. Until these claims are settled there will remain questions as to the title to these lands, a factor that may delay potential industrial development projects.

In the NWT the land also plays an important role in subsistence hunting and trapping, and ensuring community well-being. This can have an effect on setting the pace of economic development, for example through concerns over the fragile nature of the northern environment and the level of environmental contaminants.

4.2.2 NATURAL RESOURCES

The NWT is relatively rich in mineral resources and mining has been a traditional mainstay of the Territory's economy. These resources include oil and natural gas along the Mackenzie Valley and into the Beaufort Sea (see Table 4-1), which fall within the Western Canada Sedimentary Basin. The Arctic Sedimentary Basin covering most of the NWT's arctic islands also contains considerable reserves. In addition to mineral fuels, the NWT also possesses substantial reserves of base metals such as, lead, zinc and tungsten, and precious minerals, most notably gold and diamonds. These metals tend to be found in the Slave Geological Province north and east of the Great Slave Lake and in the Mackenzie Mountains along the border with Yukon. Several of these identified mineral resources are economically viable and in production or being developed. There is also substantial exploration activity taking place.

Table 4-1

Natural gas and oil reserves
(natural gas measured in trillion cubic feet, oil measured in billions of barrels)

	Gas	Oil
Existing Projects	1.0	0.107
New Projects	14.9	-
Possible Projects	47.4	1.65
Total	63.3	1.76

Source: GNWT Non-Renewable Resource Strategy

Forests in the NWT cover about 600,000 square kilometres or about half the total land area. However, only about a quarter of this is considered as potentially productive timberland[14] as climate and soil conditions mean that forests in the Territory are not as productive as those in the South. In addition, the proportion that can be developed economically in a sustainable manner is even smaller. Distances from markets, as well as the lack of clear land tenure have also hindered development of the industry.

[14] "*Common Ground*", Economic Strategy Panel Final Report, GNWT, June 2000, p.27.

The NWT is drained by several major rivers, including the Taltson, Bear and Mackenzie rivers, which offer the potential for hydroelectric power generation. These rivers also offer an alternative means of transportation to areas that have no road access. Barge services along the Mackenzie River are used to resupply local communities and can transport equipment to exploration and construction sites.

The NWT's abundant wildlife population includes caribou, moose, bears, wolves, muskrats, coyotes, beavers, Arctic foxes, muskox, seals, whales, river and lake fish and many other species. This resource is the basis of several industries including localised commercial fisheries, trapping, subsistence and big game outfitting. While trapping has shown serious long term declines in its role in the territory's cash economy, it continues to be important in the subsistence economy, particularly for Aboriginal communities. Given the low density of population of the NWT, wildlife and fish stocks remain fairly healthy. However, overexploitation of some resources, such as Arctic char in some areas, has caused some problems in the past. The harvesting of many species is subject to local management plans that take into account the need to maintain populations, traditional attitudes to resource harvesting and the potential for commercial uses. For example, the Dall's sheep of the Mackenzie Mountains provide a small subsistence resource for local communities as well as the basis of a game hunting industry.

The spectacular scenery, wildlife, remoteness and Northern Lights also act to attract visitors to the NWT. The NWT is home to a large number of territorial parks and six national parks that also serve to attract tourists as well as conserving the environment and promoting community wellbeing. The Nahanni National Park Reserve was the first natural site included on the UNESCO World Heritage List and is popular with white-water canoers. The NWT also shares Wood Buffalo National Park, home to a large bison herd, with Alberta. The GNWT has established a Protected Areas Strategy in 1999 with the aim of protecting various areas of natural or cultural importance.

4.2.3 Climate and Environment

One of the challenges to the NWT's natural endowments is its climate. The Territory's cold and dry sub-arctic and arctic climate places constraints on economic development, especially on those industries that depend on natural resources. Because of the slow growth of trees, forestry and forest renewal needs to be approached with some care. Similarly, the short growing season and lack of natural precipitation severely limits agricultural development, although this is somewhat compensated by longer daylight hours. The long and severe winter forces a number of industries to be highly seasonal. Reduced water flows in the winter months mean that hydro-electricity generation goes down even as demand rises. While there is some potential for increased winter tourism, most tourists want to come in the few warmer months. The cold climate also imposes additional costs, not only for heating, but also often in reduced life of equipment that cannot stand temperatures below -40º Celsius. In addition, industries can face additional costs associated with ensuring that waste is safely disposed of. In many areas burying waste is not possible and waste that is left to decompose can take much longer to do so than in warmer regions.

With all the difficulties associated with this cold, dry climate many people might welcome the higher temperatures and moisture that global warming might bring. Environment Canada reports that temperatures in the region have risen by 1.5°C over the last century.[15] Even higher temperatures could reduce heating costs, some offshore oil and gas drilling costs, increase the scope for agriculture and allow for longer shipping seasons in the Arctic and a longer barge season on the Mackenzie River. However, there are many potential drawbacks. The maintenance of all-weather roads could increase and the winter-road season shorten as ice cover on lakes thins. Onshore drilling costs could also rise as a result of increased flooding and instability in permafrost coverage. The commercial timber industry might also suffer as a result of more forest fires and the northward push of insect pests such as the white pine weevil, an insect that reduces forests' regenerative capacity.

Global warming could lead to substantial changes to local vegetation and wildlife populations over the long term. While all changes would not necessarily be negative, it is likely that the altered balance of local habitats in themselves would have serious social and economic impacts. For example, higher temperatures and moisture levels could shift the tree line northwards reducing the tundra range available to the NWT's large caribou herds such as the Bathurst herd. It is likely that the caribou would also lose weight as they contend with deeper snow and increased harassment from insects. Caribou further north in the Arctic islands would face difficulties migrating from island to island as sea ice coverage is reduced. The muskox and polar bear could even face extinction. Whether or not matters reach this point, changes in the composition of wildlife populations might affect the ability of Aboriginal people to hunt and trap as well as the game hunting industry. Global warming could also nullify some of value of traditional knowledge of local wildlife populations, precipitation patterns and ice and snow cover.

Another concern involves the increasing presence of persistent organic pollutants in the NWT, especially the most northerly regions. Elements of these have been found in high levels in Arctic animals and also in local human populations that rely in part on country foods.[16] Before 1972 there were few rules governing land use in the Arctic and waste was dumped at abandoned exploration and mine sites and at military sites.[17] Air and ocean currents also bring pollutants from the industrialised regions of Eurasia and North America to the Arctic.

---

[15] "*Responding to Global Climate Change in Canada's Arctic: Vol. II of Canada Country Study: Climate Impacts and Adaptation*", Maxwell, Barry, Environment Canada, 1997, p.22.

[16] In one community in Nunavut, over 60 per cent of Inuit children under the age of 15 and almost 40 per cent of Inuit women of childbearing age were found to have PCB body burdens exceeding Health Canada's "tolerable" guidelines. Health Canada*, A Second Diagnostic on the Health of First Nations and Inuit People in Canada*, November 1999.

[17] "*Pressures on the Arctic Ecosystem from Human Activities*", Northwest Territories Department of Resources, Wildlife and Economic Development, March 1998.

4.2.4 PUBLIC GEOSCIENCE AND NATURAL RESOURCES SCIENCE

Geoscience is an important source of knowledge about the land and its subsurface that supports many activities and industries. Geoscience knowledge is the foundation upon which mineral and energy industries plan and conduct exploration. It can also provide a means by which the NWT can diversify its economy within the natural resources sector through the identification of new deposits of minerals not currently mined. Better knowledge on what mineral potential exists will allow the GNWT or other organisations to make a case for investment or financial support. As such, it represents an important public investment. Topographic mapping also supports the management of renewable resources, tourism planning, land claims negotiations and regulatory bodies' needs.

Several of those interviewed by the Conference Board mentioned that increased resources to improve the level of geoscience knowledge would be beneficial for economic development in the NWT. Although the existing state of such knowledge was not identified as a major impediment, additional studies would be welcomed. Others also gave the impression that while current moves to enhance the scale of public geoscience knowledge in the NWT are positive, additional resources are needed.[18]

Current activities include the joint public-private four-year "Extech" program to provide co-ordinated mineral deposit studies, geological research and a comprehensive digital geoscience knowledge database. However, this program only covers the Yellowknife area. Other initiatives include bedrock mapping, oil and gas assessments and geochemical surveys in other areas where potential mineral deposits have been identified. Many of these are conducted at the CS Lord Northern Geoscience where the GNWT, DIAND and Geological Survey of Canada have co-located their geoscience programs in the NWT. Work has also begun on the NORMIN database of mineral showings and geological and exploration references. However, work has been slow due to funding problems. The National Round Table on the Environment and the Economy (NRTEE) states that current resources devoted to public geoscience in the NWT are insufficient and recommends that the federal government allocate $100 million over ten years to developing a geoscience database for the NWT. [19]

Better knowledge of natural resource stocks in the NWT can help improve conservation and provide the basis for sustainable hunting, trapping and fishing industries within a precautionary framework. Knowledge of the status of species can also be used to inform other processes associated with economic development such as environmental impact assessments. With regards to fish, it can also lead to the discovery of new or larger stocks and an increase in potential harvesting capacity. The status of NWT's principal wildlife and fish species is described in the government's publication, *General Status of Wild Species in the Northwest Territories*.

Traditional knowledge of wildlife populations, population cycles, habits and habitats is also a valuable asset in managing local wildlife populations and informing firms and

---

[18] "*Report on NWT Geoscience Needs Workshop 2000*", C.S. Lord Northern Geoscience Centre, January 2001.

[19] The National Roundtable on the Environment and the Economy, *State of the Debate: Aboriginal Communities and Non-Renewable Resource Development*, 2001.

environmental impact review bodies of the potential impacts of economic development projects. Co-management boards are in control of managing local wildlife populations. The knowledge provided by local hunters, trappers and fishers plays an important role in their work. There are some concerns, though, that this knowledge is not being passed on to younger generations.

4.3 Human Capital

The existence of a well-educated, highly skilled and flexible workforce is an important determinant of the long-term economic success of any economy. Thus, the concept of human capital encompasses the volume of labour available, but extends beyond this to include a society's level of literacy, education and skills status. Health status and general well-being come into consideration, as do attributes such as personal motivation and discipline. This section will review some key social indicators that shed light on the extent of human capital that people of the NWT possess.

It appears that significant strides still have to be taken to increase the health and skills of the Aboriginal community if is to benefit from current economic opportunities and generate future ones. Ongoing problems with the transition to the wage-economy have been identified as one of the causes of the considerable differences in the levels of human capital endowments of the Aboriginal and non-Aboriginal communities of the NWT. While substantial steps have been taken to resolve some of the problems facing the Aboriginal community various factors still pose significant barriers to development. These include a lack of the basic life skills necessary to work in the wage economy, literacy and numeracy problems, lack of parenting skills, high incidence of FAS/FAE, loss of language skills and low self-esteem.

The current Premier of the NWT, among others, has noted that many Aboriginal people undervalue the need for formal education and training, and the territorial government is now seeking to address this need. This need to appreciate the benefits of education and training and upgrade human capital is particularly important if Aboriginal communities are to have the skills and attributes needed to deal with the likely downloading of responsibilities that will be part of the devolution and self-government processes.

4.3.1 POPULATION

Demographic trends and lifestyle choices play a major role in determining the long-term availability of labour and the balance in the population between those who work and those they support. While the NWT's population is young it is ageing rapidly. Another perennial issue concerns the encouragement of migration into the NWT. This section will examine the demographic structure of the NWT and the main factors driving changes in this structure.

One of the most noticeable aspects of the structure of the NWT population compared to that of Canada is its relative youth compared to the rest of Canada. Table 4-2 shows that the NWT has more young people and fewer seniors compared to the country as a whole. In 2001, over a quarter of the population was aged under 15 years, while only 4.2 per cent were aged 65 or over. This compares to 18.8 and 12.6 per cent, respectively, for Canada as a whole. The share of 15 to 64 year olds, those who generally support the young and the elderly, is almost the same in both jurisdictions. Moreover, birth rates in the NWT continue to exceed those of the rest of the country by a healthy margin. This has positive implications for maintaining labour force growth rates over the next twenty years, a time when the rest of Canada will be experiencing a relative dearth of available workers. This age structure also means that relatively fewer resources have to be devoted to health care and pensions than in the rest of Canada. By contrast, education and training require more resources

The NWT population has, though, begun to experience the ageing process that started earlier in other parts of the country. Although the share of the population aged 65 and over has remained relatively small, total numbers in this age group rose by over 40 per cent between 1991 and 2001. Even greater increases have occurred in the 45-64 age group, whose share of the population shot up from 12.6 to 18.2 per cent over the same period. This process is set to continue and means that over the next two decades, the age structure of the NWT population should move more in line with that of the Canadian population as a whole. There are two major factors contributing to the growth in the older age group: increasing life expectancy and less out-migration of elders as an increasing number of non-Aboriginal retirees are electing to remain in the NWT.

Rapidly declining birth rates will accelerate the ageing of the population. In line with demographic trends elsewhere, the birth rate has been falling rapidly over the last decade. Between 1992 and 2000 the crude birth rate fell from 21.3 to 16.7 per 1,000 people. Increasing education and employment opportunities for younger women (birth rates in the NWT and Canada are similar for women aged 25 or over) should place even greater downward pressure on birth rates in the future and they can be expected to gradually approach national levels. At the same time the increasing numbers of elderly will push up currently very low death rates.

Historically, inter-provincial migration has played a critical role in determining the size and structure of the population and labour force in the NWT. With a relatively small population of just 42,000, economic and other issues that spur migration can take on an importance that would not be felt in other more populous jurisdictions. In the late 1990s, for example, the downturn in the gold mining industry and the separation of the old NWT into the current territory and Nunavut led to significant out-migration. Over 2,600 people left the NWT for other parts of Canada between 1996 and 2000. As a result,

Table 4-2

Population: by age, 2001
(percentages)

	NWT	Canada
Aged 15 or under	26.7	18.8
Aged 15 to 24	15.5	13.5
Aged 25 to 44	35.3	31.2
Aged 45 to 64	18.2	23.9
Aged 65 or over	4.2	12.6

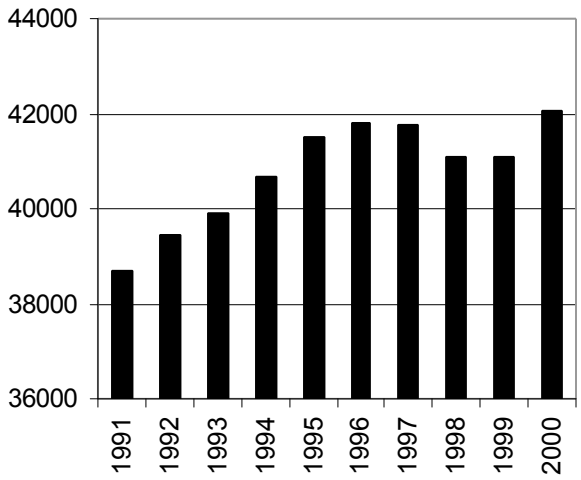
Source: Statistics Canada

the total population hardly grew over this period, despite a healthy rate of natural increase (see Chart 4-1). The recent upturn in the Territory's economic fortunes appears to have stemmed the tide of out-migration. Nonetheless, with a non-Aboriginal population that appears to be quite transitory, overall growth in the population in the NWT will likely remain closely linked to the pace of economic development. The relative importance of migration as a source of population growth will be compounded by the decreasing rate of natural increase of the population.

During the course of its research the Conference Board found that some sections of the population appear to be strongly in favour of boosting the population by attracting residents from other parts of Canada. This point of view is also encouraged by the financial incentives provided by the federal fiscal transfer system and by the labour shortages currently being experienced in Yellowknife and some other communities. Others are much less anxious to see any substantial changes to the existing size and delicate balance of the population between the Aboriginal and non-Aboriginal communities, especially in the absence of settled land claims and Aboriginal self-government agreements.

Chart 4-1

Population of the NWT
(on 1 July each year)



Source: NWT Bureau of Statistics

4.3.2 LABOUR FORCE

The previous chapter described how unemployment rates have been falling, and employment and participation rates rising in the NWT in recent years. Although unemployment rates are still high enough to suggest some slack in labour markets, the Conference Board has heard from various sources how the NWT is facing labour shortages, especially in the case of skilled labour, and that the remaining unemployed are either unemployable or do not wish to work. The Board repeatedly heard the phrase “Anybody who wants a job has a job”. There are also anecdotal accounts of the difficulty of hiring contractors and finding employees for the retail sector, problems compounded by a lack of available housing and the high cost of living. In addition, the booming economy of Alberta provides tough

Table 4-3

NWT Labour Markets

	Unemployment Rate	Participation Rate	Employment Rate
2001	8.7	76.5	69.8
1999	13.7	78.3	67.5
1996	12.9	73.4	64.0
1991	13.3	73.2	63.5
1986	14.0	69.8	60.0
1981	8.2	64.6	59.4

Source: NWT Bureau of Statistics, Statistics Canada

competition for those wanting to hire labour from outside the NWT.

Certainly, the unemployment rate has fallen rapidly in recent years (see Table 4-3) and the employment rate risen. However, most of the bottlenecks that have arisen are restricted to those areas, such as Yellowknife and Inuvik, where developments in the mining, oil and gas industries have attracted workers and temporarily overloaded the carrying capacity of local infrastructure. As such, these bottlenecks are likely to ease as new infrastructure is built. One matter complicating this is the fact that significant numbers of those working in the resource sector, particularly in oil and gas exploration, do so on a temporary basis. This means that expanding existing infrastructure in response to temporary bottlenecks may not be economic. In addition, such "job tourists", being only temporary residents, contribute relatively little to the local economy or tax base.

As well as differences in the employment situations of different regions there are also substantial ones in the employment patterns of the Aboriginal and non-Aboriginal communities. Over the last ten to fifteen years employment rates for non-Aboriginals have hovered around the 80 per cent mark, while less than half of the Aboriginal people have been in full-time employment. There has been some closure of this gap in recent years and the Aboriginal employment rate rose from 38 to 48 per cent between 1984 and 1999, the last year for which data are available. This figure has most probably risen further with the boom in resource sector employment. The Ekati mine has a hiring target of 31 per cent for northern Aboriginals and Diavik of 40 per cent. The socio-economic agreements concluded by the mines with the GNWT also contain hiring and purchasing targets for Aboriginal contractors.

In the longer term, participation rates are unlikely to rise much further and may even decline as the population ages. Increasing uptake of educational opportunities by young people in the Aboriginal community may also push them down. However, increasing the human capital skills of the labour force will ultimately increase the supply of the employable. Increasing labour force attachment and integration into the wage economy should also act to increase labour supply. Many of those who recently reduced the ranks of the unemployed were entering paid employment for the first time. The increase in income and spending power that these jobs bring also raises the relative cost of not working. There may, though, be some social costs associated with these changes. For example, the "two-weeks-in, two-weeks-out" work pattern common in the mining industry may place stress on families. On the other hand such work patterns allow people to engage in traditional economic activities, albeit on a part-time basis. Higher incomes also allow people to meet the high entry costs in terms of fuel and equipment that hunting and trapping often entail. Increased income can also spur the development of local markets.

The previous section showed that in the longer term, the natural increase in the population is set to decline as a source of labour force growth. Immigration is another possibility, but there are other ways in which to augment the size of the labour force in the Territory. These include increasing the participation of the Aboriginal population, moves to narrow the gap between female and male participation rates in some age cohorts and encouraging the continued attachment to the labour force by older workers.

Another factor affecting the availability of human capital is the degree of labour mobility within the NWT. Despite some movement to medium-sized communities, the strong attachment of Aboriginal people to land and to their community generally serves to limit the degree of labour mobility in the NWT. This may also limit the nature and efficacy of training. On the other hand, Aboriginal labour is less likely to move to other jurisdictions, other than maybe those south of the Great Slave Lake to adjoining areas. This reduces the potential for labour turnover and the attendant costs that have to be borne by employers.

4.3.3 HEALTH

Our state of health, or health status, greatly affects our quality of life. As such, a healthy population is a worthy goal in its own right. But a population that is in poor health can also harm other factors influencing quality of life. First, in economic terms, productivity depends in part on the health status of its workforce. A physically and mentally healthy population is usually one better placed to generate economic wealth that can afford high quality public services. Second, an unhealthy workforce can lead to an increase in demand for health and social services, taking up public funding that might be used for other public priorities such as education.

This section will examine various indicators of the physical health of the NWT population such as life expectancy, potential years of life lost, infant mortality rates, self-reported health status and smoking rates. In addition, this section examines broader health indicators related to mental health and social conditions. Many of the indicators discussed in this section are presented in Table 4-4.

Comparisons of health and social indicators between the NWT and Canada can be difficult given the NWT's small population. For example, an outbreak of a disease in one community in the NWT can alter the territorial average. Another issue affecting health indicators for the NWT is the formation of Nunavut and a loss of approximately one-third of its population. Generally, the health status of Nunavut's population has been lower than that of the residents of the current NWT.

PHYSICAL HEALTH

A comparison of health indicators between the residents of the NWT and Canadian rates reveals that the health status of NWT residents has been improving over the past twenty years and is generally similar to those of other Canadians. Some notable exceptions include deaths due to injuries and poisonings, the rate of communicable diseases, and substance abuse.[20]

Life expectancy at birth: Life expectancy at birth—how long someone is expected to live based on mortality trends—remains lower than the Canadian average despite improvements over the past decade. Latest figures find that life expectancy for NWT males is now 73.6 years compared to 76.3 years for Canadian men. Similarly, life expectancy for NWT women is 79.5 years compared to the national rate of 81.7. There

[20] Much of the data and analysis of this section comes courtesy of the GNWT's report, *The NWT Health Status Report – 1999.*

is, however, a more significant difference in life expectancy rates between Aboriginal and non-Aboriginals in the NWT. Non-Aboriginal males have approximately 3.6 more years than their Aboriginal counterparts while non-Aboriginal females are expected to live 4.7 years more than Aboriginal females.[21]

Table 4-4

Health and Society Indicators

	NWT	Canada	Yukon	Nunavut	Alberta
Total population	42,083	30,750,000	30,655	27,000	2,669,195
Aboriginal population (per cent of total population) 1996	52	3	20	85	5
Life expectancy at birth, males (years)*	73.6	76.3	74.5	67.7**	76.6
Life expectancy at birth, females, (years)*	79.5	81.7	79.0	70.2**	81.7
Infant mortality rate (per 1,000 live births, 500 grams or more)*	10.5	4.6	5.4	16.3	4.9
Low-birth weight rate (percentage of live births less than 2,500 grams)*	4.8	5.6	4.5	6.9	5.5
PYLL Unintentional injury deaths per 100,000 (injuries due to causes such as motor vehicle collisions, falls, drowning, burns and poisonings)*	1,309	697	1,907	3,089	925
Suicides per 100,000 population (age-standardised) 1995-97	75.5	28.3	68.6	75.7	33.6
Lung cancer (mortality rate per 100,000 population)*	70.9	49.3	69.0**	173.5	44.1
Acute Myocardial Infarction (mortality rate per 100,000 population) *	46.4	63.5	40.5**	39.0	56.0
Self-assessed health status (per cent reporting “very good” or “excellent” health), 2000-01.	54	61	62	53	61
Alcohol consumption (per cent indicating they consumed five or more drinks at a time, 12 times a year), 2000-01	41	20	30	30	23
Cigarette smoking (per cent of population 12 years and over that are daily smokers), 2000–01	36	22	26	50	23
Physical activity (per cent reporting "physically inactive"), 2000-01	48	49	47	47	53

*These rates were created by averaging three years of data (1997, 1998, 1999). The figures for Alberta are for 1999 only.

** 1999 rate

Sources: CIHI; Statistics Canada (Canadian Vital Statistics Database, Canadian Community Health Survey, 2000/01)); NWT Department of Health and Social Services; Yukon Health and Social Services; Alberta Health an Wellness; 1994–95 National Population Health Survey.

[21] “*2001 NWT Socio-Economic Scan*”, NWT Bureau of Statistics.

Infant mortality: Infant mortality refers to the number of infants who die in the first year of life. It provides a reflection on the health status and health care of the population, the effectiveness of preventive care, and the attention paid to maternal and child care. It can also be related to broader social trends such as maternal education, smoking and relative deprivation.[22] The rate per 1,000 live births for NWT was 10.5 compared to 4.6 for Canada. While lower than the rate for Manitoba, Saskatchewan, Yukon and Nunavut, the NWT's rate is significantly higher than the Canadian average.

Low birth weight: This indicator is given considerable attention by health authorities as a low weight at birth has been found to be associated with many health problems for infants and even in later childhood and adulthood years. For example, low birth weight babies have a greater chance of dying within their first year than those with higher birth weights. Factors that are associated with low birth weight are very much related to the health status and practices of the mother including whether or not she smokes, her diet and her weight. Low birth weight has been defined as those weighing less than 2,500 grams or less at birth. According to Statistics Canada and NWT Bureau of Statistics, the rate of low birth weights for the NWT and Canada are very similar with the NWT showing an improving trend over the past several years.

Major causes of death: The major causes of death for residents of the NWT are cancer, circulatory and respiratory diseases, injuries and poisonings. These causes of death mirror the Canadian causes except for one major difference — the rate of deaths due to injuries and poisonings in the NWT is over double the national average. We point this out since "injuries and poisonings" are preventable deaths unlike many diseases, and that the largest proportion of deaths by injury and poisoning are among the younger segments of the population. However, on the positive side, residents of the NWT are much less likely than other Canadians to die of acute myocardial infarction — in fact they have one of the lowest rates in the country. There are several factors for this but a contributing factor could be diet and the greater reliance on country or traditional foods among residents of the NWT. Country food is highly nutritious and historically has been shown to be capable of providing all of the necessary nutrients for nutritional health.[23] A very high proportion of Aboriginal households consumes country foods, particularly those with large families. For example, 70 per cent of Aboriginal households with seven or more members reported that most or all of their meat and fish was obtained through hunting or fishing.[24]

Potential Years of Life Lost (PYLL): PYLL is used to measure premature death in a jurisdiction. It counts the number of years of life lost when a person dies prematurely before the age of 75. A jurisdiction with a high PYLL usually means a lot of people are dying below the age of 75 and/or a considerable number of young people are dying since a person dying at age 25 would represent 50 years of life lost (75-25=50). PYLL

---

[22] Government of Northwest Territories, Health and Social Services, *Report to Residents of the Northwest Territories on Comparable Health and Health System Indicators*. September 2002.

[23] Draper, H. H (1978) Nutrition Studies: The Aboriginal Eskimo Diet – A Modern Perspective. In Jamison, PL, Zegura SL, and Milan FA (eds): *Eskimos of Northwestern Alaska: A Biological Perspective.* Stroudsburg, Pennsylvania: Dowden, Hutchinson, and Ross, Inc., pp. 139-145.

[24] West Kitikmeot/Slave Study Area, p. 81.

rates are generally higher in NWT than Canada as a whole. The PYLL rates due to unintentional injuries is much higher in the NWT than the Canadian rate reaffirming that many deaths in the NWT are preventable and are occurring among the younger portions of the population. This is no doubt influenced by the fact that the NWT's population is younger than the rest of Canada.

Communicable diseases: These are diseases that can be passed from one person to another and are often related to socio-economic and environmental conditions.[25] Examples of communicable diseases include sexually transmitted diseases, AIDS and the flu. A review of some of the incidence rates for communicable diseases shows that the NWT tends to have much higher rates than the rest of Canada. For example, the average rate in the NWT for chlamydia infection — a sexually transmitted disease — for 1999 and 2001 was 1,167 cases per 100,000 people compared to 150 per 100,000 for the Canadian population.[26] The significant difference between the two populations suggests that residents of the NWT are "not taking precautions to protect themselves from the risk of infection."[27]

Smoking: Smoking levels among NWT residents are much higher than the Canadian average. Latest figures indicate that approximately 36 per cent of the NWT population smokes on a daily basis compared to 22 per cent of the Canadian population.[28] Furthermore, 21 per cent of NWT adolescents between the age of 12-14 years reported to smoke daily or occasionally compared to 8 per cent for those in the rest of the country.[29] Smoking levels among Aboriginal residents have been higher than non-Aboriginal residents—54 per cent of Aboriginal residents over 15 years of age smoke compared to 30 per cent of non-Aboriginal residents. Aboriginal adolescents 15-17 years of age in the NWT are almost three times likely to smoke than non-Aboriginal adolescents.[30] Almost 70 per cent of pregnant women reported to have smoked during their last pregnancy compared to approximately 50 per cent of women in Canada. Not surprisingly, approximately 25 per cent of all deaths in the NWT/Nunavut between 1991 and 1996 have been attributed to smoking.[31]

Self reported health status: As with many of the above health indicators, there is little difference between NWT residents and Canadian residents regarding self-reported health status: approximately 60 per cent of both populations rated their own health

---

[25] Government of Northwest Territories, *The NWT Health Status Report – 1999*. P. 21. www.hlthss.gov.nt.ca

[26] GNWT, *Report to Residents of the Northwest Territories on Comparable Health and Health System Indicators*.

[27] "*The NWT Health Status Report – 1999*", GNWT, p.22.

[28] *Canadian Community Health Survey, 2000/2001*, Statistics Canada.

[29] 1999 NWT School Tobacco Use Survey in "*Smoke Alarm: A Summary Report on Smoking in the Northwest Territories*", GNWT, April 2001, and 1996 National Population Health Survey.

[30] 1999 NWT School Tobacco Use Survey in "*Smoke Alarm: A Summary Report on Smoking in the Northwest Territories*", GNWT, April 2001.

[31] *"Estimated Smoking – Attributable Mortality in Former NWT 1991-96",* Daojun Mo,", EpiNorth, Volume 11, Summer 1999.

status as “excellent” or “very good”.[32] The biggest difference in self-reported results was that those NWT residents between the ages of 12 and 24 years and those people 65 years and over were less likely to rate their health as “excellent” or “very good” than their Canadian counterparts. Finally, approximately the same proportion of NWT residents and Canadians reported that they are physically inactive (just under 50 per cent).

This review has shown that NWT residents are very close to the national rates for many health indicators. In some cases, NWT residents have a lower burden of disease. In other cases, NWT residents have some ground to make up. But it is clear that there should be no reason why the NWT cannot strive to meet and surpass the Canadian rates for most if not all of these health indicators.

Yet some cause for concern is still very much warranted. An increasing life span accompanied by high smoking rates, a growing reliance on imported southern processed foods and a more sedentary lifestyle—due in part to greater participation in the wage economy—will likely result in higher rates of chronic illnesses such as diabetes and heart disease. These illnesses can negatively affect quality of life and place increased demand for health care services.

MENTAL HEALTH AND SELECT SOCIAL CONDITIONS

Mental health is an equally important part of one’s overall health. A review of NWT reports suggests that mental health is a priority health issue needing to be addressed, particularly given the presence of such factors as Fetal Alcohol Syndrome and high levels of substance abuse, family violence and crime.

Substance Abuse: Substance abuse has been identified by some as the most pressing issue facing the residents of the NWT.[33] A 1996 survey found that 15 per cent of the NWT population used marijuana or hash in the past year compared to only 7 per cent of the Canadian population.[34] As shown in Table 4-4, 41 per cent of NWT respondents reported drinking five or more drinks at a time, twelve or more times a year (this frequency is considered an indicator for people with drinking problems) compared to only 20 per cent for the Canadian population as a whole. The highest level of alcohol consumption in both the NWT and at the national level has been among men between the ages of 25-44 years.

Fetal Alcohol Syndrome: Fetal alcohol syndrome is a medical diagnosis of developmental abnormalities of a fetus due to the consumption of alcohol by the mother during her pregnancy. FAS can lead to serious long-term problems in a child’s development such as brain damage and learning difficulties. Fetal Alcohol Effects (FAE)—a milder form of FAS that has no visible physical abnormalities but produces many cognitive impairments found with FAS—are anecdotally reported as a major problem in NWT. Unfortunately, there is little survey or medical data that captures the

---

[32] “*National Population Health Survey*”, NWT Bureau of Statistics

[33] “*Our Communities Our Decisions*”, Final Report of the Minister’s Forum on Health and Social Services, Yellowknife, January 2000.

[34] Statistics Canada, 1996 Alcohol and Drug Survey

extent of the problem. A 1993 NWT breast feeding survey found that one-quarter of women reported drinking while they were pregnant. Although amounts were not measured, the results suggest that "a high proportion of pregnancies are at risk for an FAS/FAE outcome, given that research has yet to show that there is a safe level of alcohol that can be consumed while pregnant."[35]

Family Violence: It is very difficult to statistically capture, in an accurate manner, the extent of family violence but it appears to be a serious issue in the NWT. A report by the Canadian Centre for Justice Statistics found that the rate of women and children seeking shelters was four times higher in the NWT than the rate for Canadian women.[36]

Teen births: Another dramatic difference between the NWT population and that of Canada is found with the rate of teenage births. Teenage births are strongly associated with low income and subsequently place these families at higher risk for health and social problems. While the rate has been dropping, the rate of teen births in the NWT in 1996 was more than double the national average.[37]

Crime rates: Crime rates are significantly higher in the NWT than in Canada. While property crime has been decreasing, violent crimes have not decreased over the past two decades and remain significantly higher than Canadian rates.[38]

Suicide: Like Nunavut, suicide rates in NWT are high. Suicide rates per 100,000 people (age standardized) in NWT are well above the Canadian rate (see Table 4-4).

Many community leaders and researchers have noted the immense impact that the wage economy has had on social conditions in northern communities. For example, the transition to a wage-based economy has involved more permanent year round settlements, greater individualism and less use of community supports, and weaker family units.[39] The review of indicators suggests that many social conditions have either stabilised or are improving. Nevertheless, these social problems will not disappear quickly and will be costly in terms of their impact on quality of life and in terms of being able to make full use of NWT's human capital.

4.3.4 EDUCATION

While education levels in the NWT have been lower than the national rates they have been steadily improving. The proportion of the NWT population with less than grade 9 education has been dropping while the proportion of those receiving post-secondary education training has been increasing. The proportion of NWT residents earning a university degree over the past decade has remained constant at 14 per cent (see Chart 4-2).

---

[35] "*The NWT Health Status Report – 1999*", GNWT, p. 52.

[36] Canadian Centre for Justice Statistics, Transition Home Survey, 1997-98, Statistics Canada and GNWT Bureau of Statistics.

[37] Statistics Canada and GNWT Bureau of Statistics

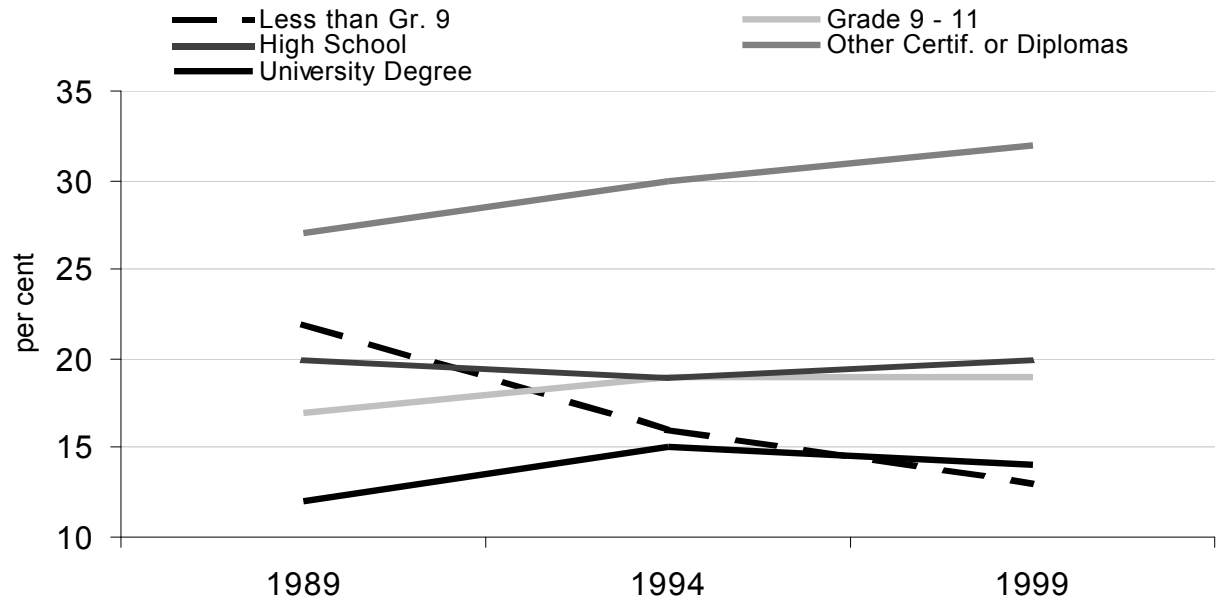
[38] "*2001 NWT Socio-Economic Scan*", NWT Bureau of Statistics, May 2001.

[39] "*State of Knowledge Report: West Kitikmeot/Slave Study Area*", prepared for West Kitikmeot/Slave Study Society, April 1999.

Chart 4-2

Population 15 & over by highest level of schooling

(Northwest Territories, 1989 — 1999)



Source: Statistics Canada Census

How does the NWT now compare with the rest of the country? The NWT's education levels are very comparable to the national levels with two minor exceptions: the NWT has fewer people with high school diplomas as their highest level of schooling than Canada but more people who have completed post-secondary diploma and training programs. The proportion of NWT residents with a university degree is just above the national average.

A key issue is the variance in education levels across the Territory. Are there still any significant gaps among the communities? The statistics suggest that while residents of smaller communities continue to have lower levels of education than residents of Yellowknife and the regional centres, they have made substantial progress in improving their education levels. Only 32 per cent of residents in small communities had less than grade nine education in 1996 compared to 44 per cent in 1986.[40] These education trends are a welcoming sign given that wage employers are increasingly requiring workers to have as a minimum a high school diploma plus additional training and/or education. In addition, higher levels of education are associated with higher quality of life including increased levels of income and health status. For example, higher levels of education are associated with lower levels of smoking regardless of one's ethnicity.

A considerable amount of national and international research has shown that the early years of a child's life (0-6 years) are crucial years in human development (i.e., brain

[40] "*The NWT Health Status Report – 1999*", GNWT.

development, behaviour development). Attention is therefore being given to how societies can better support children in these early years. An important step is the development of indicators that can be used to monitor the healthy development of children, for example, the testing of children prior to entry into the formal education system (as opposed to only testing during schooling). Presently, there are few reliable indicators for measuring the healthy development of a society's young children but it is an area that NWT should follow closely given its large young population and the benefits that can arise from healthy childhood development.

4.4 Physical (or Economic) Capital

One of the key requirements for economic growth is physical capital or infrastructure. This includes capital required for business and industrial purposes, transportation infrastructure, power generation capacity, communications systems and so on. It also includes other elements, such as housing, recreational facilities and hospitals that can improve the stock of human capital. Investments that serve to reduce draw down from the stock of natural capital such as pollution-reduction systems also form a part of the economic capital of an economy.

This section provides a brief overview of the NWT's physical capital. It is not an exhaustive assessment but is intended to highlight the contribution of sound infrastructure to economic and social development. The essential issue is whether NWT's physical capital is adequate to support economic growth or if deficiencies exist that are preventing growth and harming the other three factors of wealth creation.

There are several areas where NWT's physical capital requires improvement. In particular, there are various small- to medium-scale investments that should be made in the short-term to support certain sectors. Federal funding, through the Infrastructure Canada Program, is now available for provincial and territorial infrastructure projects. However, funding is allocated largely on a per capita basis. NWT's share of federal funding, through the Canada-NWT Infrastructure Program is just over $4 million.[41] Priority for this funding will go towards green municipal infrastructure. The funding formula obviously favours provinces with larger populations. Moreover, critics argue that the funding formula is more in tune with regions that already have established infrastructure and the amount will not support the size of investments required to establish new infrastructure as required in Canada's northern communities.

4.4.1 Transportation and Communications Infrastructure

The ease of access to markets and sources of inputs has historically been one of the chief factors determining the development of industries in certain areas. While transportation and communications costs have been greatly reduced in recent years, the importance of distance from markets and suppliers still plays an important role in the location decisions of many industries.

[41] After the initial completion of this Outlook, the GNWT along with Canada's other territories each received $20 million through the Canada Strategic Infrastructure Fund, which is a component of the overall Infrastructure Canada Program and is not tied directly to a jurisdiction's population.

The long distance of the NWT from major centres of economic activity, combined with its low population, puts it at a disadvantage in developing industries that rely on low transport costs and economies of scale. These great distances would preclude the development of any large-scale manufacturing activities. However, distance can help in developing the kind of tourist industries that thrive on the advantages of remoteness and unspoiled wilderness. In addition, a number of high technology industries, especially business services, are less dependent on transportation costs and the presence of local markets. However, such firms also require a well-developed communications infrastructure, among other requirements.

Apart from determining access to markets, the existence of transportation infrastructure plays an important role in the economic development of the resource industry. It can reduce the costs of construction and re-supply of mines, wells and pipelines making such sites economically viable. It can also help exploration activities increasing the probability that new deposits can be found. New infrastructure can also reduce the operating costs of existing facilities and extend their operating periods. Some of these factors also apply to non-renewable resource industries. For example, increased road access can open up new tourist sites or help logging firms.

Better land and marine access may also reduce the cost of re-supplying local communities in the NWT. It can help with the development of local industries that have been unable to export their products – arts and crafts, commercial hunting and trapping, for example – due to prohibitive transport costs.

Against these economic costs and benefits of new transportation infrastructure have to be weighed the social and environmental costs and benefits of such developments. On the one hand, new transport links may help with increasing access to employment opportunities, health and social services and other amenities. New roads and the like may, however, bring in outside influences that can disturb the delicate social state of isolated communities. New transportation infrastructure may also bring hunters, tourists and other outsiders to previously unspoiled areas as well as having direct environmental impacts such as habitat destruction, the disruption of caribou and other land animal migration routes and the disruption of the migratory patterns of marine animals. Construction materials may be taken from local sources creating further damage to local habitats and hazardous materials may be spilled by vehicles using roads, sea or air corridors and from pipelines. Thus, it is important to take into account a variety of factors when considering the question of expanding existing transportation infrastructure.

ROADS

The NWT is served by a 2,200km all-weather road system supplemented by a 1,425km seasonal network of winter roads (see Exhibit 1 for explanation of both and Exhibit 4-2 for a route map). In comparison to its northern neighbours, this level of infrastructure is far superior to that of Nunavut, but lags behind that of Yukon where nearly all communities have some form of road access. The 1996 census showed that only about a fifth of the NWT population has year-round all-weather road access. The main reason behind this is the temporary closure of the Mackenzie River crossing at Fort Providence. This leaves Yellowknife and areas north of the Great Slave Lake cut off for a month or so during the spring thaw and winter freeze when the winter ice road and summer ferry are out of operation. All-weather roads servicing Fort Simpson, Wrigley and the Beaufort Delta region also suffer temporary closures due to spring thaw and winter freeze up conditions.

Exhibit 4-1

NWT Road Types

Winter Road:

A winter road is constructed annually on ice over water bodies and/or compacted snow over frozen terrain and is commonly open to traffic from early January till late March.

All-Weather Road:

An all-weather road is constructed with a loose or stabilised gravel surface and is available to traffic throughout the year. All-weather roads require a greater initial capital cost as well as higher operations and maintenance costs relative to winter roads.

Source: The Northwest Territories Department of Transportation

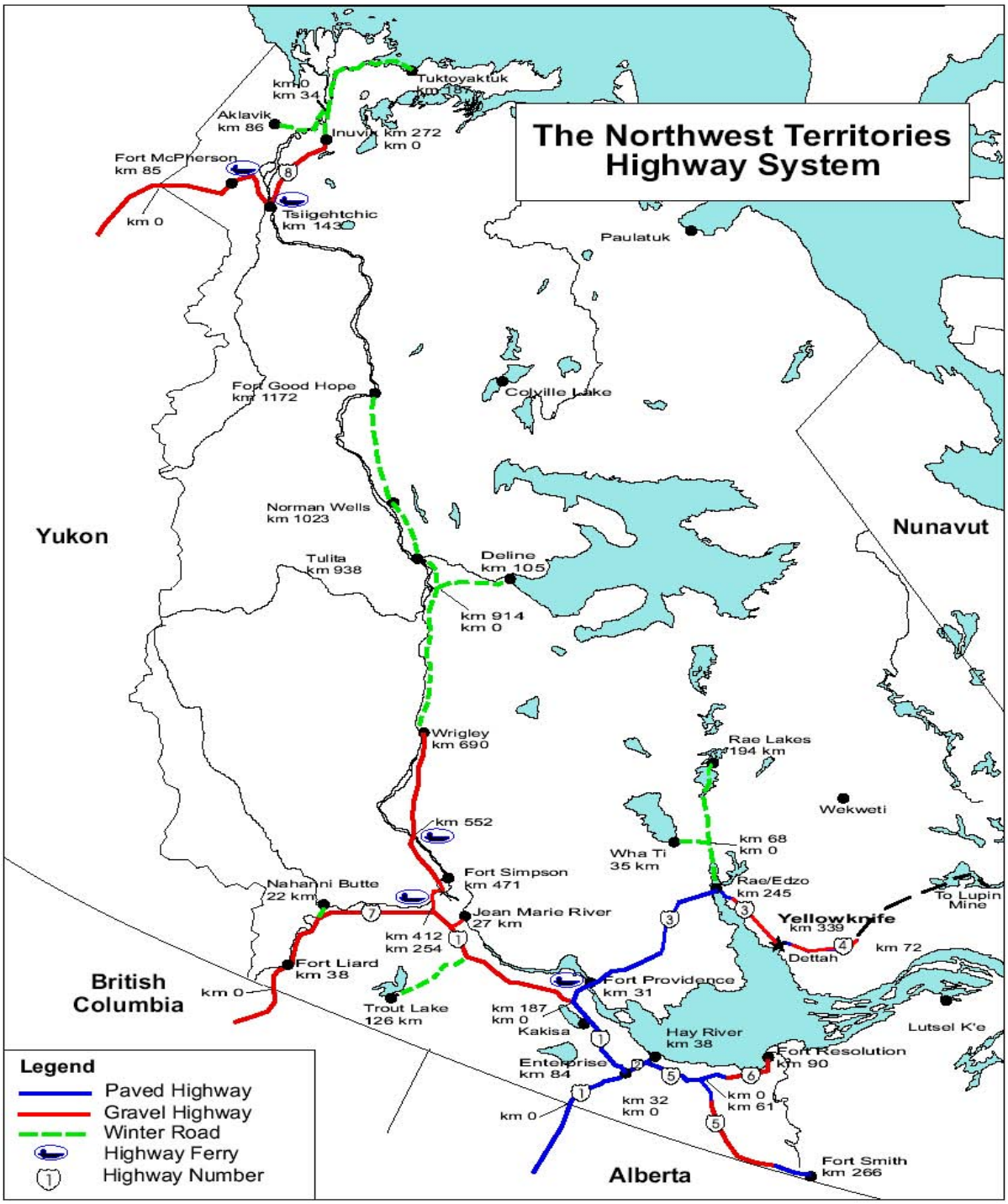
Winter roads serve another 13 per cent of the population. The longest of these is the 480km Mackenzie Highway extension from Wrigley to Fort Good Hope. Other winter roads serve communities north of Yellowknife and in the Mackenzie Delta. There is also a privately run winter road through the Slave Geological Province that serves the diamond mines and the Lupin gold mine just over the border with Nunavut.

In considering investments in transportation links, it is important to distinguish between maintaining and making minor upgrades to existing roads, and undertaking major road projects such as building a new road or upgrading a winter road to an all-weather road.

In the first instance, increased industrial traffic associated with oil, gas and other mineral exploration and development has sharply increased maintenance requirements and safety concerns for the existing road system. These concerns are highest for Highways 3 and 4 in the Yellowknife area and the Liard Highway in the southwest corner of the Territory. The federal and territorial governments have been working to extend the operating season of the Mackenzie Highway extension by improving the road and building bridges across seven streams. These upgrades benefit not only local communities but also oil and gas exploration companies. Another twenty-two minor river crossings are said to require upgrades. Meanwhile, Transport Canada reported that upgrades to the winter road just past the Ingraham Trail east of Yellowknife could extend the operating season of that winter road by up to six weeks and suggests that

Exhibit 4-2

The NWT Road System



Source: The Northwest Territories Department of Transportation

costs be recovered by making an investment surcharge on users.[42] This stretch of road faces the greatest risks associated with climate change.

Exhibit 4-3

Current Winter Road Seasons

Mackenzie Highway	8 weeks
Rae Lakes	10 weeks
Inuvik-Tuktoyaktuk	16 weeks
Lupin Mine	10 weeks

Source: Common Ground, GNWT

These incremental improvements can provide significant return on the investment. The bridge-building program on the Mackenzie Highway has already extended the winter drilling season and further extensions would help industry there and in the Mackenzie Delta (see Exhibit 4-3). Previously, heavy loads could only use the road for five weeks raising the cost of transportation in relation to time spent exploring. Foreseen improvements to the system could soon bring this to eight weeks.

In terms of major road projects, the GNWT's *Investing in Roads for People and the Economy* identifies two in the territory's long-term plans. First, consideration has been given to upgrading the privately run winter road through the Slave Geological Province to an all-weather road. This would reduce the transportation costs of serving the mines, increase the probability of making new mineral discoveries, and improve the economics of some known deposits. It also may improve safety. The reported cost estimate for this road was $250 million.[43] Secondly, the government's strategy also includes the development of an all-weather road from Wrigley to Tuktoyaktuk. This project would include the conversion of the existing winter road from Wrigley to Fort Good Hope to an all-weather road at an estimated cost of $220 million, and then new infrastructure for the remaining distance at an estimated cost of $280 million.[44] This road would service several communities and provide greater access to the resources in the Mackenzie Valley. The GNWT, in its *Non-Renewable Resource Development Strategy* suggests this road would also attract tourists to the region.

On a smaller scale, an extension of the highway north of Yellowknife has been identified as a project that may help increase access to the Snare hydro development. It is also possible that other winter roads will eventually need to be upgraded to all-weather roads due to the effects of climate change that can reduce their operating season.

In terms of industrial development the absence of the two major new roads does not appear to form a major obstacle over the short to medium term. In the course of its interviews with key stakeholders the Conference Board found that industry generally views the proposed projects as being largely unnecessary for their operations. If a

---

[42] "*Northern Territories Transportation Systems Study*", Transport Canada, February 1999.

[43] "*Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories*", Northwest Territories Department of Transportation, November 2000. This cost is that of the all-weather road from Yellowknife to the Nunavut border, but does not include the extension to Bathurst Inlet or to the Izok Lake zinc deposit.

[44] "*Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories*", Northwest Territories Department of Transportation, November 2000.

pipeline were built up the Mackenzie Valley, materials would be shipped by barge along the Mackenzie River. The absence of a road reduces security risks and environmental concerns. The Lupin Mine road is currently operating below capacity. If the Snap Lake site is developed and Lupin remains open, the industrial traffic would increase to approximately 75 per cent of the road's capacity. While new roads would save on industry transport costs, their high cost of construction remains a barrier. Other benefits such as additional tourism and reduced community re-supply costs are likely to be relatively minor, as are the benefits of increased safety. Social costs and benefits stand to be more substantial, but are much more difficult to quantify. All-weather roads are also more costly to maintain.

Cost-benefit analyses performed by the Conference Board[45] and others for the Northwest Territories Department of Transportation confirm that the direct costs of the road construction along the Slave Geological Province corridor outweigh that of the benefits. However, in some scenarios the losses are not unduly large, in particular, if one includes the multiplier effects of unquantified benefits.[46] Such benefits for both road projects would be largely social and include the increase in community access as well as any skills training and indirect business development that would take place as a result of the construction activities. Adding in these benefits would improve the viability of the projects. It is also important to recall the negative social and environmental impacts that new roads can have.

Under the existing division of federal and territorial powers in the NWT, the federal government is responsible for building new roads and the territorial government for maintaining the existing system. Nevertheless, the territorial government has shown itself eager to encourage the proposed new roads. It and others in the NWT have sought federal government funding claiming that the federal government will benefit from the royalty and tax revenues generated by various major resource development projects; projects that will be facilitated by the new roads.

At the same time, the territorial government's ability to cope with the increasing burden being placed on the existing road infrastructure is limited. While the GNWT reaps some benefits from the new economic activity taking place, the revenues it loses through the lack of resource royalty sharing with the federal government and through job tourists working in the NWT but residing elsewhere limits the Territory's ability to cope with the increased costs of maintaining the existing road system. Much of the additional tax revenues generated are clawed back by the federal government under the terms of the existing system of intergovernmental transfers. This system allows the funds transferred to meet the Territory's overall spending requirements to rise in line with population

---

[45] *The Slave Geological Province: Transportation and Economic Development*, the Conference Board of Canada, 2001.

[46] It should be noted that The Conference Board of Canada's study on the Slave Geologic Province transportation corridor did not include a scenario where road construction was limited to the section from Yellowknife to the Nunavut border. All scenarios included the development of Izok Lake, construction of a port at Bathurst Inlet and a road from that port to the mineral deposits to the south. None of the scenarios studied returned positive outcomes, though as stated there were numerous unquantified benefits and costs such as the benefits of employee skills training and the costs to the environment. Included, these factors could alter one's conclusion as to whether the project was viable.

increases and economic growth in Canada as a whole. In recent years growth in the NWT's economy has outstripped national rates by a considerable margin.

In its *Non-Renewable Resource Development Strategy*, the GNWT identified a program of incremental improvements and some new construction that would cost $170 million over four years. The 2002-03 GNWT budget was able to commit additional one-time funding of $15 million for that fiscal year, bringing the five-year projected funding to $91 million. This plan also allows for the building of a 165 km winter road from Fort Good Hope to Colville Lake. Sources for the remaining funds still have to be sought, with the GNWT's previous controversial plan of introducing a user fee system to pay for $100 million of improvements having been abandoned. The National Highway Program was one potential source, and did result in a transfer of $4.5 million through the Strategic Highway Improvement Program, while the oil and gas industry may be willing to contribute to some projects from which it benefits directly. The willingness of the federal government to budget additional resources was uncertain given that upgrades to existing infrastructure remain within territorial jurisdiction. However, as mentioned earlier, the Territory did receive a $20 million transfer from the Canada Strategic Infrastructure Fund.

Innovative solutions are being proposed in other areas. The GNWT is investigating a proposal from the Fort Providence Combined Council Alliance[47] to build a bridge over the Mackenzie at Fort Providence using private and public funds. A permanent crossing would eliminate the isolation of Yellowknife when the current crossing is out of commission.

In conclusion, it would appear that the NWT should continue with its incremental approach to extending road coverage in the Territory by focussing on maintenance and upgrades, particularly in light of competing infrastructure and investment priorities and limited financing options.

PIPELINES

Perhaps one of the most publicised economic opportunities in the NWT is the Mackenzie Valley Pipeline Project. This multi-billion dollar project is seen by some as the future mainstay for the Northern economy. However, the reality of the development is that it is still at least five years before any pipe is laid and there are a lot of challenges to overcome before the first well is tapped. This project is discussed in greater depth in Chapter 5, which focuses on the sectoral outlook for the Territory.

With or without the Mackenzie Valley pipeline, the NWT already has a healthy energy sector that is expanding every year. There are currently five oil or gas pipelines in operation in the Territory employing a small number of people directly. Each project was developed separately and experienced varying challenges in developing resources in the NWT. However, what is similar in all cases is the eventual co-operation between Aboriginal, environmental, government and industry groups.

---

[47] A group consisting of the Fort Providence hamlet, along with the Deh Gah Got'ie First Nation and the Fort Providence Metis Association.

The Territory's oil patch infrastructure consists of one 869-km pipe from Norman Wells to Zama, Alberta operated by Enbridge. Originally slated for delivery to Whitehorse along the Canol Trail during the Second World War, this oil reserve, owned by Imperial Oil was not tapped until the mid-1980s. At the time of the development, there was considerable objection from the Sahtu Nation, who felt the lack of a land claims agreement justified the postponement of this development. The construction went ahead and by 1994 the Government of Canada and the Sahtu signed the Sahtu Comprehensive Land Claims Agreement that recognised the Sahtu's ownership and provided financial compensation and royalty shares from the oil extraction. This is a good example of how economic development and good governance can lead to a mutually beneficial solution even if one does not occur contemporaneously with the other.

Imperial Oil estimates there are 15-20 years of reserves remaining if no further discoveries are made. This would suggest a shutdown date around 2020. The organisation is now directing significant resources ($2-4 million per year) toward remediation of the site, and less and less toward exploration.

In conjunction with the one oil pipeline, there are four natural gas pipelines in service across the Territory. Recently, Enbridge partnered with the Inuvialuit Petroleum Corporation and Alta Gas Services to bring natural gas to Inuvik. This 50-km pipeline services 500 homes in the northern community. In the Liard Plateau/Trout Lake region, a number of pipelines have been built to link NWT natural gas to the North American natural gas transportation grid. Westcoast Energy has extended natural gas pipelines north from Fort Nelson, BC into the region, with Fort Liard Producers adding a tie-in to this line. Also, Paramount Resources have brought a line from Maxhamish, BC just 15 km over the border into NWT to tap into reserves there. These tie-ins with the BC pipelines and the North American grid are the beginning of what will likely be a slow northward expansion of the lines. More reserves have been discovered throughout the area, as well as in the Cameron Hills region, north of western Alberta. Through the consultation process with key players in this field, it seemed probable that this expansion will continue well ahead of any mega-project down the Mackenzie Valley.

Other Transportation Infrastructure

The limited road network in the NWT means that alternative means of transportation for moving people and freight, chiefly by air and water, take on added significance. The NWT has a comprehensive network of airports serving nearly all communities. The Ekati and Diavik mines and some private hunting lodges also have their own airports. The increasing popularity of polar routes for international flights means that NAV CANADA is investing in new air traffic control infrastructure in the NWT and is upgrading Yellowknife to a flight information centre. The main problem in terms of air infrastructure appears to be an inability to handle the larger planes that are associated with high volume international flights at Yellowknife, the main entry point for air traffic from outside the NWT.

The high cost of air transport in the north places an additional barrier in the way of economic development and raises the cost of living of residents. The small population

base, high fuel and maintenance costs and the fact that freight planes often return to the south empty all push up airfares.

The importance of this barrier is somewhat reduced, though, by the presence of a well-developed and relatively cheap commercial marine system that faces relatively few capacity problems.[48] The marine system started off servicing Hudson Bay posts and the fur trade. It is now used mainly to ship bulk fuel by barge down the Mackenzie River and into the Arctic from the rail and road head at Hay River. This facility, operated by the Northern Transportation Company, is the largest inland shipyard in Canada. There is another smaller truck-based system run out of Fort Simpson by Cooper Barging.

COMMUNICATIONS INFRASTRUCTURE

While transportation infrastructure is an important element of physical capital, a well-developed communications infrastructure can serve to improve access to markets and suppliers. It can help in the development of a number of high technology industries, especially business services and e–commerce operations, that are less dependent on transportation costs and the presence of local markets. Enhanced connectivity, in terms of telephone service and Internet access, can also play an important socio-economic role, not only in linking scattered communities, but also by improving access to information and services, such as telehealth and increasing distance education opportunities.

The world of communications is a fast-moving one, but change to the communications infrastructure of the NWT has generally lagged that to the south. However, major changes to the telecommunications system came with a ruling by the Canadian Radio-television and Telecommunications Commission (CRTC) that opened up the long distance telephone market to competition from the start of 2001.[49] The former monopoly, NorthwesTel, continues to provide basic telephone service and be regulated on a rate-of-return basis. The CRTC decision, though, broke the inherent cross-subsidy between basic service and long-distance users. While no other service providers have as of yet entered the market, this change has allowed long-distance charges to come down towards southern levels. Basic service charges have risen as a result. The CRTC decision also freed up funds for system improvements that have expanded digital network coverage.

Cellular phone service is provided in the main centres and areas where oil and gas exploration activity is high by NMI Mobility, a NorthwesTel subsidiary. New North Networks Ltd operates a small network in the Beaufort Delta region. Both networks allow users to patch in directly to other cellular networks. Satellite coverage is available for areas outside the network areas. Prices in all areas remain relatively high compared to other parts of Canada.

---

[48] Marine and air transportation systems address largely separate markets.

[49] "*CRTC approves plan to reduce long distance rates and improve phone service for Northwestel customers*," Canadian Radio-television and Telecommunications Commission, News Release, November 30, 2000.

Another NorthwesTel subsidiary, Northwestel Cable, provides cable television service in larger centres. Economies of scale considerations mean that it is being withdrawn from smaller centres. Many communities rely on satellite television.

Given the huge size of the NWT and the isolation of many communities, the Internet offers a vital means of communication and delivery mechanism for services for the Territory's people. The NWT does possess a high-speed digital data network, but access may be expensive for users outside the main centres. Local dial-up Internet access tends to be available only in larger communities, as is Internet via cable. Similarly, ADSL high speed Internet services are now available, but only in Yellowknife, Hay River and Inuvik. Nonetheless, coverage is expanding but the small customer base of many communities limits the viability of offering services in many areas. Some communities also have limited access to the Internet through public access programs.

4.4.2 Power Generation Capacity

The power generation capacity of an economy can also affect the competitiveness of its industries and living costs. There are two hydroelectric systems in the Territory. One on the Snare River north of Yellowknife supplies the capital and Rae-Edzo. The other on the Taltson River supplies Fort Smith and Fort Resolution. Most other electricity is generated by way of diesel generators with the diesel being shipped or trucked in from outside the NWT. The high costs of fuel transportation and maintaining generators combined with the small size of the market means that it is hard to realise any economies of scale. As a result, electricity costs in the NWT are high compared to those in other parts of Canada and puts the Territory at a disadvantage. There are six subsidy programs run by the GNWT to reduce this northern burden; however, much reform is needed in the administration of these programs to make them cost effective for the government and beneficial to consumers (see Exhibit 4-4).

One means of reducing this dependence on imported fuel lies in natural gas. The towns of Inuvik and Norman Wells are already supplied with local natural gas and the development of the industry in the NWT offers the opportunity to extend this coverage to areas close to production sites. The possibility of converting the community of Ft Liard to natural gas is being investigated.

Another longer-term possibility for bringing down power costs is increasing the Territory's hydroelectric generating capacity. The additional power would be exported, increasing the public utility's economies of scale and reducing hydro costs to NWT users. The GNWT has recently investigated the potential of a large-scale expansion of the Taltson system together with new sites on the Great Bear, Mackenzie and other rivers. These new sites could provide up to 11,500 MW of capacity incorporating "run of the river" technology, which uses the flow of the river to power turbines. This technology eliminates the need for reservoirs limiting the environmental impact. These strategies have not garnered a lot of public support as of yet.[50] Greater community consultations and involvement may alter current opinions toward this development.

[50] See Northern News Service "*Slave, Lockhart rivers off hydro list*" report of 11 March, 2002.

Exhibit 4.4

Energy & Utilities Support Project

The GNWT runs six subsidy programs in an attempt to mitigate the high costs of energy and utilities to consumers. In 1999, the Territorial government provided communities and businesses with $28.9 million for their energy and utility needs, representing 3.7 per cent of the government's annual budget. There are recognised problems with the operation of these programs, including excessive administrative requirements and often overlapping or conflicting rules and regulations making application difficult for consumers. The intent of the support programs is to:

> *Subsidise residential energy and utility services at rates, which allow individuals to afford basic energy and utility needs wherever they live. The form and amount of subsidy will promote responsible energy consumption.*

Recently, the Government formed an *Energy and Utilities Working Group* (EUWG) to review these programs with the intention of introducing reforms that would see a more efficient and effective service. Balance must be found between moving the Territory to full-cost pricing for energy and mitigating the number of individuals and businesses who are not in a position to be adversely effected by the increased costs. As a result, the working group adopted four principal recommendations:

1) The GNWT should begin moving towards full-cost pricing for utility and energy services;

2) Subsidies should be provided only to those consumers who do not have the demonstrated capacity to pay full-cost prices and only for consumption levels that are deemed necessary for a reasonable standard of living;

3) Subsidies should be provided through a new mechanism which should be different from the current practice of subsidising prices; and

4) Consideration should be given to replacing the existing subsidy programs with a single and comprehensive subsidy.

Geographic location, size of household and time of year (degree days) should all be considered when looking at levels of consumption with a mind to provide support. However, with an overly generous or poorly run subsidy program, the program itself can become a factor in usage. Determining that exact point where a subsidy becomes an incentive for excessive usage will be a challenge in developing reforms to the programs. Another challenge will be in developing an efficient method of determining need among users. Methodologies most often adopted include income testing, means testing and needs assessment. Again, the focus in determining assistance eligibility should be on developing a system that reduces, if not eliminates abuse.

The EUWG provided three options for program reform, differing primarily in the cross section of consumers who would qualify for subsidies.

Targeted Subsidy Program: All customers are charged full cost of service. Only those requiring assistance apply to the support program for partial or full reimbursement.

Partial Universal Subsidy Program: All customers are subsidised for consumption up to a basic needs threshold that is predefined for each community for each service. They pay full cost for consumption over the basic needs threshold.

Universal Subsidy Program: All customers are subsidised for full consumption at a predetermined rate.

Selection of a redesigned program will be made after careful consultation with service providers and the public, to ensure that all stakeholders needs are met.

Source: *"Energy and Utilities Support Project—Final Report"*, prepared by Price, Waterhouse, Coopers for the Government of the Northwest Territories, March 2002.

4.4.3 HOUSING

Demographic changes and employment growth have led to substantial pressure on the Territory's housing stock, in particular in Yellowknife and other centres where the resource sector has been booming. This is having a negative impact not only on quality of life, but also on the Territory's ability to attract labour, at least in the short to medium term.

The cyclical nature of past economic development in the NWT has often had an impact on housing markets. Housing markets are typically ones where supply is slow to react to changes in demand. It is hard to build homes quickly, especially in areas like the NWT where the terrain, climate and lack of local supplies and skilled labour pose additional barriers to construction. The boom-and-bust pattern of development also increases the risk of purchasing such a substantial asset as a home, especially in the "thin" markets of the NWT. In this way, many present problems stem from a rapid increase in demand and with time should ease as more properties are built. However, the competition for skilled labour, especially in the construction sector, is also restricting the capacity of the homebuilding industry to respond quickly. At the same time, the housing shortage in Yellowknife and other areas is affecting the economy by making it difficult to recruit employees.

Although, not part of the general assessment of this study, reports suggest that some of the problems associated with the housing market are also affecting the municipal infrastructure of the territory. The level of provision of basic local services such as schools, hospitals, access to clean water and proper sewage and waste management systems forms part of the basic infrastructure necessary to maintain high quality of life. In areas where the pace of development is rapid, local governments are under pressure to expand municipal infrastructure. In the longer term, though, municipal infrastructure needs will generally be tied to demographic factors, particularly the level of net migration.

A more structural problem with the situation in the NWT is linked to the high cost of serviced land and in building, maintaining and operating homes. Most building materials must be shipped in from the south at high cost. Nonetheless, in areas where incomes are high these problems are not insurmountable and, on average, housing costs tend to take up a smaller share of income than in Canada as a whole.

The high costs of housing are a greater problem in areas outside Yellowknife, Inuvik, Hay River and Fort Smith, where costs are higher and incomes tend to be lower. In these areas public and government housing play a large role. In Yellowknife in 2000, 81 per cent of rental properties were supplied by the private sector[51]. In smaller communities, by contrast, the public sector provided 69 per cent of properties available for rent. Overall, there were 2,364 households, or about 18 per cent of all NWT households, living in public housing units in 2000. This proportion doubles for the smaller communities. Meanwhile only one Yellowknife household in twenty resides in

[51] "*The NWT Housing Needs Survey - 2000*", Northwest Territories Housing Corporation and Northwest Territories Bureau of Statistics, March 2000.

public housing. The smaller communities also tend to experience higher rates of inadequate or unsuitable housing. Some of these problems of suitability – which refers to overcrowding – should diminish over time as demographic pressures contribute to reduce the average size of households.

The public housing system does create disincentives to employment through a form of "poverty trap". Many public housing tenants are unemployed or earn little income and have their rent heavily subsidised. When such tenants then enter employment they can be faced with a substantial increase in rent as well as losing social assistance benefits. This considerably reduces the benefits of getting a job in the first place. It is also worth noting that this problem and others associated with public housing are faced nearly entirely by the Aboriginal community.[52]

4.4.4 INNOVATION

Productive capital can take on many forms other than machines and buildings. Increased investment in R&D, or knowledge capital, is another means of boosting economic growth. Of course, increasing knowledge capital is only part of the solution to the problem of increasing wealth-generating capital. That knowledge has to be used to develop new or improved goods, services and technologies. The process through which economic value is generated from knowledge is referred to as innovation. Indeed, innovation is key in developing the productivity gains which underlie the potential for improved economic and social well-being, especially as investments made in one sector of the economy can benefit other parts and lead to economy-wide increases in productivity. To a large extent the NWT can benefit from knowledge and innovative practices from elsewhere.

The NWT has the potential, however, to foster innovation in areas where the NWT has expertise and a particular incentive to develop. For example, the production of Arctic housing and the use of alternative energy sources are cited as areas where the climate and environment of the NWT can act as a spur to innovation.[53] Bright ideas are only the start of the innovation process. Financing is then needed to develop ideas and bring new products and services into the market place. While the private sector is an important source of capital, the distance of the NWT from main financial centres can create information blocks and mean that firms in the NWT pay a premium when seeking outside funds. This, in turn, means that public policies to encourage innovation take on an added importance in the NWT.

Fortunately, Canada has one of the most generous systems of R&D tax incentives in the world.[54] Eight of the provinces also have R&D tax credits and the Yukon introduced

---

[52] The Northwest Territories 1999/2000 Annual Report states that 92 per cent of public housing residents are Aboriginal.

[53] See "*Common Ground*".

[54] The Conference Board has studied this area extensively. See, for example, Jacek Warda,"Measuring the Value of R&D Tax Provisions," in *Fiscal Measures to Promote R&D and Innovation* (Paris: Organisation for Economic Co-operation and Development, GD (96) 165); and Jacek Warda, *Rating R&D Tax Incentives: Canada Tops the Global Standings*, Members' Briefing (Ottawa: The Conference Board of Canada, November 1999).

a 15 per cent refundable credit in 2000. The NWT has no R&D tax credit. The federal and territorial governments also have programs that give small businesses a break on their income taxes. These also go some of the way towards offsetting the burden that profit-insensitive taxes place on small businesses. Indeed, the *Report of the Technical Committee on Business Taxation*, published by Finance Canada, concluded that such profit-insensitive levies and taxes provide a greater tax burden on small business than do taxes on profits. These profit-insensitive levies and taxes include payroll taxes, property taxes, and various sales and excise taxes. In this respect, the relatively low tax rates of the NWT may provide firms with a relative advantage compared to those in other parts of Canada.

Governments have also generally recognised that tax incentives to encourage small businesses need to be complemented by other targeted programs, such as information services, grant programs and specific tax incentives. In the NWT the Department of Resources, Wildlife and Economic Development funds two Crown corporations that offer financial support to businesses. The NWT Business Credit Corporation provides loans to companies and the NWT Development Corporation provides equity funding. RWED also funds Community Futures that provide loans to other small businesses, a Business Development Fund and a Grants to Small Business fund. Several other non-RWED funding programs are available from federal and territorial sources. This plethora of programs can be confusing and lead to duplication. A Business Program Review Committee has recommended consolidation of some programs and a move towards single points of delivery in each region.

An economy's innovation performance cannot be improved by merely creating financial incentives. While a well-developed financial system can act as a facilitator of economic growth and change, it is essential that public policies are put in place and opportunities for collaboration between firms and individuals encouraged which create an environment that promotes innovation. It is important to note that although governments have been significant supporters of business development in many areas, they also impose constraints and costs that small businesses find particularly difficult to bear. Dealing with the regulations, tax codes, audit requirements, labour law requirements and other government impositions is a burden that small businesses often do not have the expertise to deal with. In this way, the complex regulatory system of the NWT may act as a substantial barrier to the development of small and medium-sized businesses.

On a broader note, the NWT also faces a substantial challenge in creating an educational system that provides its people with the knowledge skills that can transform ideas into economic success and a business culture that encourages risk taking and rewards innovation.

4.5 Social and Organisational Capital

The discussion of innovation shows that having abundant natural capital and high quality human and physical capital is only part of the solution to the problem of generating high living standards through economic development. Having a well-developed organisational and social capital infrastructure is also important in establishing the business and social environment within which economic activity can

flourish. For example, the degree of openness to trade, the policies and fiscal actions of government and the nature of the regulatory system can have a substantial impact on economic development. Similarly, factors such as the size and efficiency of institutions can also affect economic outcomes.

This section examines how the NWT is organised for wealth creation, beginning with a discussion of the system of governance and regulation in the Territory before moving on to discuss the more direct role of government on the economy.

4.5.1 GOVERNANCE

Governance structures in any economy play a vital role in determining the nature of the investment climate. Firms may be deterred from making investments if land tenure is uncertain, regulation processes too long or too complex or if it is simply not clear which branch of government has the final say in making decisions about regulating certain activities. Similarly, governance structures may affect public sector investment decisions. This section will provide a brief historical description of government in the NWT, discuss the current roles and responsibilities of federal and territorial governments, and describe the current state of land claims and self-government negotiations in the NWT and the fiscal capacity of governments in the NWT.

A general theme that emerged during the course of the Conference Board's interviews with interested parties and other research is that the investment climate of the NWT suffers from a lack of clarity over the respective roles of governments and regulatory bodies. This uncertainty is compounded by the unknown form of governance structures that will emerge from the cycle of negotiations on devolution and Aboriginal self-government that is about to begin.

HISTORY OF GOVERNMENT IN THE NWT

The political development of the NWT began to accelerate in the post-war period. During the first half of the twentieth century the NWT was run from Ottawa by a Commissioner with the aid of a four-member Council, and it wasn't until 1947 that a northerner was first appointed to the Council. In 1951 three elected members from the western Mackenzie District were added to the Council and sittings were held alternatively in Ottawa and the North. Fifteen years later the Council was further extended so that elected members formed a majority, including representatives from the eastern Arctic. The government of the NWT was also moved to Yellowknife at this time in advance of the creation of the GNWT in 1969.

In 1975 a fully-elected Council took power and a year later its name was changed to the Legislative Assembly. The Assembly has since adopted a consensus-style government, the only jurisdiction along with Nunavut to operate such a system. However, political development did not stop there. In 1986 the Commissioner transferred the last of his powers over the Assembly to its leader and the Assembly's Executive Council. The creation of the new territory of Nunavut also lead to changes in the size and structure of the Assembly. The 14th Legislative Assembly was elected in 1999 and comprised nineteen members.

Roles and Responsibilities of Governments

Since the creation of the territorial government there has been a gradual transfer of powers and responsibilities to it from the federal government. The GNWT is responsible for health, education, forest management, housing, municipal bodies, social services and taxation. The federal government retains control over land and resource administration. As such, it is responsible (sometimes in conjunction with the territorial government, Aboriginal and other bodies) for determining the scale of non-renewable resource development, sub-surface water rights, fishing and much of the regulatory process in the NWT with respect to the natural environment. Negotiations for a transfer of the administration and management of petroleum resources in onshore parts of NWT to the GNWT began in 1987, but have yet to be completed.

There are several differences between the powers of territorial and provincial governments. First, the GNWT does not have the ability to amend its own constitution. Only the federal parliament has the power to amend the *Northwest Territories Act*, the NWT's "constitution". A second difference involves the management and sale of public lands. While provinces do have powers in this regard, most lands in the NWT come under the control of the federal government, and, to a lesser extent, Aboriginal groups with settled land claims. Provincial governments can also borrow on credit while the GNWT's ability to do so is subject to the approval of the Governor-in-Council. The Territory also has a limited ability to incorporate companies.

In order for the NWT to become a province the Constitution of Canada would have to be amended. This would require the consent of Parliament and of seven of the ten provinces provided that these seven represent at least half of the population.

Devolution

During the course of its research the Conference Board found that there is a widely-held view in the NWT of the need for more responsible government. Northerners feel that they lack control over the development, especially economic, of their territory and that those responsible are not accountable or do not exercise their mandate. It is not GNWT that decides on major projects, rather the federal government through DIAND. Moreover, DIAND also has a multiplicity of sometimes conflicting roles. Many non-Aboriginals also see DIAND as being focussed on Aboriginal affairs to the virtual exclusion of its northern development role. Indeed the Minister for DIAND has recently been reported to have said that the territorial government cannot keep looking to DIAND for money and that the department is mainly for Aboriginal groups.[55]

The GNWT also has fewer fiscal powers than provincial governments, especially with regard to resource revenues, which reduces its ability to fund development projects. Another bone of contention concerns the fact that per capita funding formulas used for many federal projects do not recognise the special development needs of the North. At the same time DIAND also has to compete with other federal departments for funding. In illustration of this, DIAND's northern economic development programs are limited to advocating Northern needs within the federal system and delivery of the municipal

[55] See Northern News Service "*DIAND cuts GNWT loose*" report of 5 April, 2002.

component of the Canada Infrastructure Program. Funding under this program is based on an area's share of Canada's total population and unemployment.

While the federal government and DIAND control much of the decision apparatus and funding available for public infrastructure, they are not directly accountable to the people of the NWT, only indirectly in its control over the federal government; i.e., its one voice in parliament. There appears to be a strong desire for greater local accountability and of reducing the dependency of the NWT on federal transfers and federal funds for economic development purposes. Resource revenues are seen as a means by which this dependency could be greatly reduced.

There are many in the NWT who would like to see some acceleration of the gradual devolution of powers and responsibilities from the federal government to help overcome these potential barriers to development. Talk of devolution has been on the table for a long time and has already resulted in the transfer of various powers to the GNWT. The development of a framework agreement between the federal government and GNWT is planned for the next two years. The framework agreement would then serve as the basis for negotiations of a final agreement between the two parties.

The devolution process in Yukon has gone further and is close to completion. Control over oil and gas has already been devolved and the planned completion of devolution in April 2003 will see the transfer of responsibility for managing forests, minerals, water and land resources on all public lands in the territory. Yukon will then have the administrative powers of a province, although legislative changes will still be needed to give it constitutional equality with the provinces.

It is likely that the medium term will also see substantial changes to the way in which government operates in the NWT. However, not all observers appear to be aware that (or choose to ignore that) devolution, the settling of land claims and negotiation of Aboriginal self-government will take place together. The results of this process will have a major impact on the future governance structure of the NWT and, consequently, on the investment climate. The Aboriginal communities are behind the idea of devolution but on the basis of being full partners in the negotiations along with the GNWT. The division of resource revenues will be a key part of these negotiations. Self-government negotiations will also involve passing control over economic development and downloading health, education and other services to Aboriginal governments. The establishment of the Intergovernmental Forum in 2000 provides a forum in which many of these questions will be discussed on a government-to-government-to-government basis. The Forum includes DIAND, the GNWT and the Aboriginal Summit, which represents eight tribal Inuit, Métis and Dene governments.

Nonetheless, the nature and extent of powers, responsibilities and the revenue-sharing arrangements between the three levels of government that will result is unclear. Some Aboriginal communities and organisations wish to see Aboriginal governments take over some, if not most, of the responsibilities in their regions. Despite the fact that six of the last seven Government Leaders and Premiers of the Northwest Territories, have been Aboriginal and a substantial proportion of the Assembly is comprised of Aboriginal

members, the GNWT is seen by many as not representing Aboriginal peoples.[56] There are also questions as to how governments will co-ordinate policies and the delivery of services without increasing duplication of services and the complexity and size of government in the NWT.

The transfer of powers to quasi-judicial bodies such as the MVEIRB further clouds the picture of how the NWT will operate in the future. While these issues have an impact on the future investment climate the present one is affected by these uncertainties. This is compounded by uncertainty surrounding land access for exploration and development, especially in areas without settled land claims.

Aboriginal Land Claims and Self-Government

The 1960s and 1970s saw a revitalisation of Aboriginal political awareness and involvement. This resulted in Aboriginal groups laying formal claim to various parts of the NWT and pursuing moves towards self-government. To date three land claim agreements have been made between Aboriginal groups and the federal government. In 1995 the federal government made a decision to recognise the right of Aboriginal self-government under the Canadian Constitution. As a result, the Dene, Métis and Inuvialuit began to seek recognition and implementation of their own governments. The start of 2000 saw the signing of an agreement-in-principle with the Dogrib Nation that broke new ground in combining agreements on both a land claim and self-government. Land claims are currently being negotiated in the remaining parts of the NWT and self-government is being discussed for all seven Aboriginal groups. An agreement-in-principle on self-government for the Beaufort Delta region was initialled at the end of 2001.

The first land claim to be settled (in 1984) by the federal government involved 2,500 Inuvialuit of the western arctic and an area of 91,000 square kilometres. The agreement also involved subsurface ownership rights on a seventh of the claim area, financial compensation, social funding, hunting rights and a greater role in managing wildlife and conservation matters. Similar comprehensive land claims were concluded with the Gwich'in in 1992 and the Sahtu in 1993. These were concluded as individual regions began to negotiate separate claims when a broad claim for the Dene and Métis Nation for the whole of the Mackenzie Valley south of the Inuvialuit Settlement Region fell apart in 1990. 2,200 Gwich'in were granted ownership of 22,422 square kilometres of land on just over a quarter of which they have subsurface ownership. The Gwich'in will also receive a share of annual resource royalties in the Mackenzie Valley. The Sahtu claim involved 2,000 people and an area of 41,437 square kilometres of land on 4 per cent of which they have subsurface ownership rights.

Another of the claims that evolved out of the collapse of the joint Dene-Métis claim, involves the 3,000 Dogrib people of the four communities of Gameti (Rae Lakes), Wekweti (Snare Lake), Wha Ti (Lac La Martre), and Behcho Ko (Rae-Edzo) to the north

---

[56] For example, Sahtu Grand Chief Frank Andrew is quoted as reporting, "The elders speak of how the Dene Nation should do the work because the territorial government does not represent the Dene people" by the Northern News Service on 3 April, 2002.

of Yellowknife. This claim is of particular note in that it evolved to include negotiations on self-government, the first joint claim in the North. An agreement-in-principle was signed between the federal and territorial governments and the Dogrib Nation in January 2000.[57] The main obstacle in the way of completing a final agreement concerns the exact boundaries of the claim area. These are the subject of dispute with the Deh Cho, Akaitcho Treaty 8 First Nations and the North Slave Métis Alliance. In the meantime, two interim agreements ensure that the Dogrib have a say in land and water use and that no new mining rights can be granted around the four Dogrib communities.

Negotiations with the 2,300 Akaitcho Dene of the Slave Province are relatively less well advanced than those already mentioned. Representatives of the four Akaitcho communities signed a framework agreement in the summer of 2000 with the federal and territorial governments as a prelude to negotiating an agreement-in-principle. An interim agreement gives the Akaitcho Dene a say in how the land is used. Negotiations of the claim have been slow due to a directive given by tribal elders that the people's rights to the land should never be extinguished. As a result, the negotiations involve some form of coexistence with other governments within the whole claim area rather than the transfer of a part of the land combined with financial compensation.

Another slow-moving claim involves the Deh Cho First Nations (DCFN) of the southwestern NWT, which represents eleven Dene first nations and three Métis organisations. Some 7,000 people live in eight communities of the Deh Cho region. At the time of the signing of a framework and two interim agreements in the summer of 2001 it was estimated that the negotiation process for an agreement-in-principle would take five years and the final agreement a further two years to achieve. The interim agreements were aimed at reducing the uncertainty affecting the investment climate in the region and giving the Deh Cho a stake in land and water use regulation and resource revenues. However, the slow speed of negotiations and the rapid pace of development in the resource industry may exacerbate existing divisions within the DCFN. One band, the Acho Dene Koe of the Ft Liard region, has already submitted a demand for a separate land claim.

Land claims, resource revenues and self-government are also being negotiated for the South Slave Métis. In 1996 the South Slave Métis Tribal Council reached a framework agreement with the federal and territorial government and an agreement-in-principle is expected to be signed soon.

There is one area of the NWT where negotiations are under way to establish a reserve. The signing of a memorandum of intent, which is similar to an agreement-in-principle, is due to happen in the near future. The reserve will be established around Fort Smith for the Salt River First Nation of about 700 people.

[57] This is a draft agreement between an Aboriginal people and the Crown to settle land claims or self-government rights. The AIP is then subject to approval by the Aboriginal people and governments involved.

The previous section outlined how the various self-government agreements under negotiation will have a considerable impact on the way the NWT is governed in the future, and on the investment climate of the Territory both then and in the interim. However, there is no one model of self-government that will emerge and the respective powers and responsibilities of the Aboriginal and territorial governments look set to vary from region to region. These powers and responsibilities include those of making laws affecting the Aboriginal and non-Aboriginal residents in a variety of areas of the region, powers of taxation, the delivery of services such as health and education, and the management of lands, water and natural resources. The Dogrib claim is one of the most advanced and gives an idea of how self-government might operate in that region (see Exhibit 4-5). However, the extent of self-government is likely to differ in other regions. In most cases, the transfer of powers and responsibilities from the territorial government is likely to be substantial and the future role of the territorial government is unclear. Again, there is a question of the capacity of small communities to manage such an array of powers and responsibilities. Added to this is the impact that adding another layer of

Exhibit 4-5

Key Elements of Aboriginal Self-Government for the Dogrib

The final agreement would replace the existing bands with the Dogrib First Nation Government (DFNG).

This government would have a wide range of law-making abilities over Dogrib lands and Dogrib citizens (those who are Dogrib and Canadian citizens would be eligible to be Dogrib citizens) elsewhere. All laws of general application would continue to apply. In cases of dispute with the laws of other governments, Dogrib laws would prevail over territorial laws, but federal laws would prevail over Dogrib laws.

The government would have the power to tax Dogrib citizens on Dogrib lands. The taxation of non-Dogrib residents, the degree of sharing of taxation revenues and the level of transfers from other governments to the DFNG have yet to be defined. The DFNG would also receive an initial $90 million (in 1997 dollars) and a share of resource revenues in the Mackenzie Valley.

Health, education, welfare, family and other social programs and services in the Dogrib area would be delivered jointly in a manner to be decided by the three levels of government.

Each of the four communities would have a public government, but with a Dogrib chief and at least half the councillors being Dogrib citizens.

The Dogrib would have ownership and subsurface rights to the final settlement area. There would still be a public right of access to most Dogrib lands. The DFNG would have to be notified of mining and oil and gas developments.

Outside developers would have to compensate Dogrib citizens for loss or damages suffered as a result of the developer's activities and major project proposals would require some form of impact benefit agreement.

A North Slave Land and Water Board would regulate land and water use in the North Slave region. Half of its members would be nominated by the DFNG and the DFNG would also be able to give policy direction to the Board's decisions that affect Dogrib lands. In addition, the DFNG would nominate one member to the Mackenzie Valley Environmental Impact Review Board.

Wildlife would be managed though a North Slave Renewable Resources Board. The Dogrib would have exclusive rights to conduct commercial wildlife activities on Dogrib lands.

government to an already overcrowded regulatory environment will have on the investment climate.

Another important development in the NWT's organisational capital is its move to regionalisation. The Northwest Territories is comprised of several regions: Yellowknife, Inuvik, Hay River, Fort Smith and South Slave, Rae-Edzo/Dogrib, Fort Simpson/Deh Cho, and Norman Wells/Sahtu. Each region features a large community (e.g., Inuvik) that serves as a hub of economic activity for it and smaller more isolated local communities. During the 1980s and 1990s, the GNWT worked towards regionalisation whereby government and other services would be made available in each of the economic hubs. Several government documents have been produced to support the move to regionalisation and assistance to smaller communities, most recently *Common Ground*. As a result, many services are governed to varying extents at the regional level. For example, there are nine health and social service boards covering the territory that are responsible for planning, managing and delivering a wide range of services to local residents (the Dogrib board is also responsible for education).

The implementation of regional boards to oversee human services has been a national trend for more than a decade. While bringing services "closer to the people," there are many issues that arise such as flexible funding arrangements to meet local needs while ensuring each region's programming meets provincial or territorial standards; and supporting regions to make the necessary decisions while ensuring the accountability of local decision making. As pointed out in *Common Ground*, "the multitude of territorial, regional and community boards, linked to federal, territorial, aboriginal, and community governments leads to duplication and decreased ability to act quickly and with authority." Regionalisation must work toward more effective decision making rather than simply creating another layer of administration with little added value.

Regulatory System

The regulatory system of an economy forms another aspect of public social and organisational capital, and can make an important contribution to the shaping of the investment climate. Economic theory and a large number of studies have shown that regulation can have both positive and negative effects on economic performance. The imposition of strict standards may improve competitiveness. On the other hand, lack of clarity or duplication within the system may hinder investment.

In many cases, the regulatory framework of the NWT is similar to that in other parts of Canada. As pointed out earlier, there is now competition in the long-distance telephone service. Like some provinces, the market does not set electricity prices. Instead, they are controlled by the Public Utilities Board. Where differences appear to raise most concerns is in the regulation of activities in the resource sector, especially non-renewable resources. Firms have expressed concern over the number of regulatory bodies that can exercise control over development in the NWT and the length of time that it can take to acquire all the necessary permits and licences for a development. There is also concern about duplication within the regulatory system and about duplication of the consultation processes that regulators often require. Added to this is the potential for environmental assessment and an environmental assessment review that may slow a project's development (see Exhibit 4-6).

Exhibit 4-6

Regulatory Bodies in the NWT

DIAND – manages Crown lands and waters; administers legislation regarding renewable and non-renewable resources and the environment.

Department of Fisheries and Oceans – regulates the Fisheries Act, issues navigable waters permits.

Environment Canada – some ongoing responsibilities under the CEAA

National Energy Board – an independent board that regulates petroleum activities. It authorises oil and natural gas exploration, it can declare significant and commercial discoveries of oil and gas, and regulate the construction and tolls for pipelines under federal jurisdiction.

GNWT – regulates land use on territorial lands.

Mackenzie Valley Environmental Impact Review Board – maintains a registry of preliminary screenings; and conducts environmental assessments and environmental impact reviews in the Mackenzie Valley. Its recommendations are made to the Minister for DIAND.

Mackenzie Valley Land and Water Board – responsible for issuing land use permits and water use licences in parts of the Mackenzie Valley without settled land claims.

Sahtu Land and Water Board – responsible for issuing land use permits and water use licences in the Sahtu area of the Mackenzie Valley.

Gwich'in Land and Water Board – responsible for issuing land use permits and water use licences in the Gwich'in area of the Mackenzie Valley.

Inuvialuit Land Administration Commission – issues oil and gas rights and regulates land access and use on Inuvialuit land.

Environmental Impact Screening Committee for the Inuvialuit Settlement Region – screens projects on Crown lands in the Inuvialuit Settlement Region and on Inuvialuit lands if requested by the Inuvialuit.

Environmental Impact Review Board for the Inuvialuit Settlement Region – reviews projects referred to it by the body above.

Note: This list is not exhaustive and nor does it cover all the regulatory roles of each organisation.

In the NWT, any one of a number of regulatory bodies that are required to licence a project can refer the project for environmental assessment and/or review if the matter is felt to raise environmental or other concerns to the public. In all parts of the NWT, except for the Inuvialuit region, these referrals are made to the MVEIRB.[58] At present most of the MVEIRB's assessments focus on environmental impacts, though it is planning to expand its consideration of the potential social and economic impacts of development projects. The MVEIRB's mandate is to ensure that development is broadly sustainable. As such it encourages firms to consider the costs and benefits of development at the outset and so avoid potential large clean-up costs in the future, such as in the case of the arsenic deposits in the Giant mine. The MVEIRB was established by the Mackenzie Valley Resource Management Act (MVRMA) passed by the federal government in 1998. The MVRMA replaced the Canadian Environmental Assessment Act (CEAA) in the Mackenzie Valley as the main legislation governing environmental

[58] Separate bodies are responsible for environmental assessment and review in the Inuvialuit Settlement Region. See Exhibit 4-6.

and natural-resource matters in parts of the NWT without settled land claims. If the public concerns are deemed to be significant enough, the project may be referred for environmental review. This is a more detailed process that requires additional analyses and a public review. The MVEIRB's recommendations outline the circumstances under which development should occur and are referred to the DIAND Minister for a final decision. If approved, the original body that referred the project for assessment resumes the permitting process.

Another aspect to the regulatory process in the NWT is the socio-economic and impact benefit agreements that firms sometimes make with territorial and local governments to ensure that projects are accepted. These often focus on ensuring employment quotas, financial compensation, social and other benefits to communities close to development sites.

Over time the nature of these agreements have tended to move away from ensuring local employment, as the pool of available labour has shrunk, in favour of financial compensation. Such agreements have brought substantial employment and other benefits to local communities. Nonetheless, there is concern that the scale of previous agreements may shape expectations about future ones, expectations that not all projects will be able to meet.

In general, the fixed nature of the costs of regulation, environmental assessment and impact benefit agreements tend to weigh against small firms. This is particularly important in the case of the mineral explorations sector. Facing the same costs as larger firms, many smaller- and medium-sized firms feel that they are being pushed out. The need to pay upfront deposits for site clean-up can also impact more on smaller firms.

Having outlined some of the costs of the regulatory system in the NWT, it is also important to note the benefits it can bring. A well-run regulatory system can ensure that development meets the requirements of sustainability that appear to be valued by the people of the NWT. The lengthier regulation process in the NWT may also be a reflection of the delicate nature of the northern environment and close Aboriginal attachment to the land. Consultation procedures may also be lengthy, but this can help build up trust in areas where people may be wary of development. Impact benefit agreements can also ensure that local people are able to benefit from the developments taking place in their regions. They have also given many workers valuable employment experience and helped reduce dependence on social benefits.

In general, it appears that firms in the NWT tend to accept that the need to build up trust, to ensure local support for development and to ensure that development is sustainable mean that "things are slower up there". There is also acceptance that the new bodies established by the MVRMA are still "feeling their way". Nonetheless, it appears that there is some potential for some streamlining of processes. "One-stop shopping" may not be feasible but better co-ordination may be. Rationalisation may also reduce the time, financial and human resource burden on regulators and smaller communities involved in the consultation process, reducing the potential danger of "consultation fatigue".

The proposed process for the Mackenzie Valley pipeline might serve as an example of how to improve co-ordination of the regulatory process. While no pipeline proposal has yet been submitted, a plan[59] has been proposed to co-ordinate and clarify the roles and activities of the various regulatory and environmental impact review bodies that would have concerns about the project. Closer co-operation between regulatory bodies and firms at the outset of a project can significantly reduce the time required to secure approval. Some feel that a form of development organisation might be needed to overcome some of the problems of overlapping jurisdictions, although this would again have to be balanced against the possibility that this might just add yet another body to the regulatory scene.

Another factor that may change the future nature of the regulatory system in the NWT is the growing concern over taking into account the cumulative effects of development on the fragile environment of the Territory. While assessment of such cumulative effects is still in the early stages of development, it is important to bear in mind the trade-off involved between greater compliance costs on the part of firms with environmental concerns, and the impact that such assessments could have on the existing regulatory system.

As for other provinces and territories in Canada, the trend appears to be one of streamlining regulatory systems particularly for non-renewable resources. Most recent initiatives have focussed on clarifying and modifying regulatory requirements for the energy sector while aiming to achieve a balance between local and business interests. Increasing the transparency of regulatory procedures and facilitating economic development in the non-renewable resources sector also require the improvement of territory- and province-wide land use planning and co-ordination.

Most recently, British Columbia has made changes to the Mineral Tenure Act, including the creation of a two-zone system that defines lands as either open or closed to mining. This system will provide certainty about where mining is permitted and where not, for example park land, ecological reserves, protected heritage property or areas where mining has been prohibited by an order under the Environment and Land Use Act are excluded from mining activity.[60] Furthermore, British Columbia's Energy and Mines ministry is discussing legislative amendments as an incentive to oil and gas investment in the province. Planned changes to the Oil and Gas Commission Act include the creation of a general development permit allowing concurrent examination of surface effects of planned oil and gas activities and pipelines in a local area. The permit is also expected to "reduce regulatory burdens for industry, improve planning and land-use co-ordination and streamline the commission's application review process".[61] By strengthening the commission's governance procedures, it is intended to improve access to resources and improve the investment climate by enhancing the single-window authorities.

---

[59] "*Draft Co-operation Plan of the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories*", Northern Pipeline Environmental Impact Assessment and Regulatory Chairs' Committee, December 2001.

[60] News Release, Ministry of Energy and Mines, Government of British Columbia, May 15, 2002.

[61] Legislative Changes Aiming for Investment Incentive. Energy Analects, April 29, 2002.

Similarly, the Yukon is also seeking to streamline regulatory processes across the territory. In 1998 the federal government transferred responsibility for oil and gas as the *Yukon Oil and Gas Act* came into effect. The Yukon government and the Yukon's fourteen First Nations have formed a partnership to develop a common Yukon-wide oil and gas regime and are working towards completion of common oil and gas regulations. The Yukon government is also negotiating the transfer of responsibilities for mineral, land and water resources from the federal government to the Territory. The goal is to provide companies with consistent territory-wide regulatory processes. Research activity on the environmental effects of mining and identifying best practices in mining activities is being promoted by the Mining Environmental Research Group (MERG), a co-operative working group made up of government agencies, mining companies, Yukon First Nations and non-government organisations. Aside from providing an exchange forum for its members and co-ordinating research projects, MERG's also aims to provide research results in non-technical language to the general public, therefore increasing the understanding of mining and related environmental issues.

Saskatchewan is converting its entire Land Titles and Survey systems to the new Land Titles Automated Network Delivery (LAND) System, a GIS-based record system providing province-wide land title registration and information. The LAND system consists of several components such as plan processing, e-business services (storage and retrieval, imaging of paper documents) and title processing (internet based on-line access for customers, separate titles for surface and mineral property records). A consistent province-wide turnaround of 24 to 28 hours for title registration is projected.[62] Most mineral rights in Saskatchewan are on Crown lands, which fall under the jurisdiction of the provincial government, leaving one fifth as 'freehold' with individuals, companies and corporations.

The province of Alberta is also in the process of streamlining its energy approval process to eliminate duplication and overlap between the energy and environment departments. At present Alberta offers a mining toolkit on-line, tabulating necessary procedures and activities for acquiring appropriate forms and permits.[63] Alberta Energy also recently announced a review of the provincial Metallic and Industrial Minerals Regulation and meetings with industry representatives and other stakeholders began in early 2002. Items under review include permit application and term, assessment reporting standards and assessment time frames (present practice comprises a 90-day filing period followed by a review and revision period that usually lasts a further 90 days). The public tender posting cycle for oil, gas and oil sands in the province takes seventeen weeks. Industry representatives have noted that Alberta requires about 30 days of lead time from survey to spud date[64] while in the Northwest Territories this process for drilling a well may take six months to a year.[65] Alberta Energy has also established the multi-agency Crown Mineral Disposition Review Committee to act as a central review body for surface access restrictions relating to proposed petroleum and

---

[62] Information Services Corporation of Saskatchewan, 2000 Annual Report.

[63] http://www.energy.gov.ab.ca/com/Coal+and+Minerals/Other+Minerals/Mining+Toolkit.htm

[64] The date that a drilling rig first begins boring into the earth's surface.

[65] "*Working North of 60 Requires Patience*", Laurel Black, Daily Oil Bulletin, April 16, 2001.

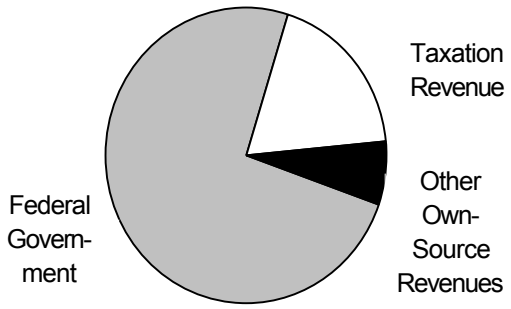
natural gas projects. For example, surface access to Crown lands needs to be negotiated with bodies responsible for environmental protection and historical preservation where access to a resource is located in an area of environmental or land use concern. Description of the restriction, such as seasonal access restrictions for the protection of wildlife habitats, are then attached to the rights when they are posted and issued.

4.5.2 Fiscal Capacity

While governance structures form a major part of the public aspects of social and organisational capital, governments can also have a more direct role in economic development through their spending and revenue actions and other policies. For example, government spending on infrastructure increases the capital stock. Avoiding excessive debts and deficits can also help ensure that governments have sufficient resources to meet policy goals, such as health care and education, which are in themselves important determinants of economic growth.

Chart 4-3

GNWT Revenues By Source, 1999-2001



Source: GNWT Budget Documents; The Conference Board of Canada

Data on government spending and revenues from Statistics Canada for the NWT are available for just one year. Although these are not enough from which to draw strong conclusions, they do provide a snapshot of the situation in the NWT in 1999. These data show that although the federal government outspent its territorial counterpart by $1,099 million to $874 million the vast majority of its spending took the form of transfers to the territorial government. In terms of spending on goods and services and transfers to persons and businesses, two thirds of government activity in the NWT was accounted for by the territorial government compared to a quarter by the federal government. Municipal governments accounted for the remainder. The income and indirect taxes levied on economic activity in the NWT — split roughly two-to-one in favour of the federal government — covered just over two fifths of this spending. The remainder was covered by the almost three-quarters of a billion dollars transferred to governments in the NWT.

This is no an isolated event. Federal transfers have long driven the size of the public sector in the NWT. In a typical year these account for about 70 to 80 per cent of total

GNWT revenues.[66] Chart 4-3 shows the average revenues of the GNWT by source for the 1999-2000 and 2000-01 fiscal years.

This high level of dependence means that the GNWT's spending plans are vulnerable to changes in federal government spending priorities. In the 1990s for example, when fiscal retrenchment was the order of the day, the GNWT bore its share of the burden. The relatively small scale of economic activity in the NWT in the past means that GNWT has had little ability to fund spending plans through its own fiscal actions. However, the potential scale of resource sector developments in the Territory offers a means to reduce its dependence on outside transfers.

Table 4-5

GNWT Fiscal Position
(millions of dollars)

	1999-2000	2000-01	2001-02[1]	2002-03[1]
Federal Government Transfers				
TFF	517	571	318	387
Other	51	45	41	55
Income Taxes				
Personal	51	60	42	47
Corporate	8	103	483	264
Other	35	39	43	43
Other	46	66	58	61
Total Revenues	**708**	**883**	**985**	**856**
Health and Social Services	174	186	228	223
Education, Culture and Employment	178	180	200	210
Transportation	92	89	116	110
Resource, Wildlife and Economic Development	75	78	81	83
NWT Housing Corporation	47	45	47	49
Other	216	231	282	286
Total Spending	**783**	**811**	**954**	**963**
Total Debt	**(251)**	**(138)**	**223**	**(39)**

[1] Estimates.

Source: GNWT Budget Documents; The Conference Board of Canada

The start of diamond production and the expansion of the oil and gas industries are already beginning to make their mark on the fiscal structure of the NWT. Although, the huge increase in corporate income tax revenues in 2001-02 (see Table 4-5) are likely to be just a temporary spike, such revenues are set to become an increasingly important source of revenues over time. As a result, this will lead to reductions in federal government transfers over the longer term. In the near future, though, they are set to rebound after the drop of 2001-02. However, they will not be enough to meet targeted spending increases and the $223 million surplus built up at the end of 2001-02 is set to be eliminated. The GNWT even estimates that it will be nearing its $300 million borrowing limit by the end of 2004-05.

Along with other parts of Canada, the NWT is faced with growing health care spending pressures to meet the needs of an ageing population. These needs can be expected to put an increasing burden on government coffers over the longer term. For the present, however, only about 23 per cent of GNWT spending goes on health and social services, a much lower share than for Canada as a whole. Growing health care spending pressures are also being countered by falling social assistance payments.

The relative youth of the NWT's population means that education pressures are set to remain. These pressures will be reinforced by the need to build-up basic life, literacy and numeracy skills as well as encouraging more specialised training to allow people to

[66] "*Budget Address Northwest Territories, 2002-2003*", Northwest Territories Department of Finance, February 2002, p.B7.

take advantage of the growing number of opportunities in the resource sector. Table 4-5 also shows the relative importance (and expense) of transportation infrastructure and housing needs in the NWT.

One of the major unknowns surrounding the course of fiscal events in the NWT in the coming years is the impact that the settling of Aboriginal self-government agreements will have. The extent to which they acquire tax-raising abilities and jurisdiction over spending will affect the role of the GNWT and its ability to co-ordinate government spending across the NWT. Such potential "Balkanisation" of government also raises questions of duplication of administration and its attendant costs as well as adding to the already complex bureaucracy of the Territory. Health care and social spending has already been largely devolved to nine regional authorities. By contrast, the provinces tend to have similar numbers of regional health authorities to provide for populations many times that of the NWT.

TAX RATES

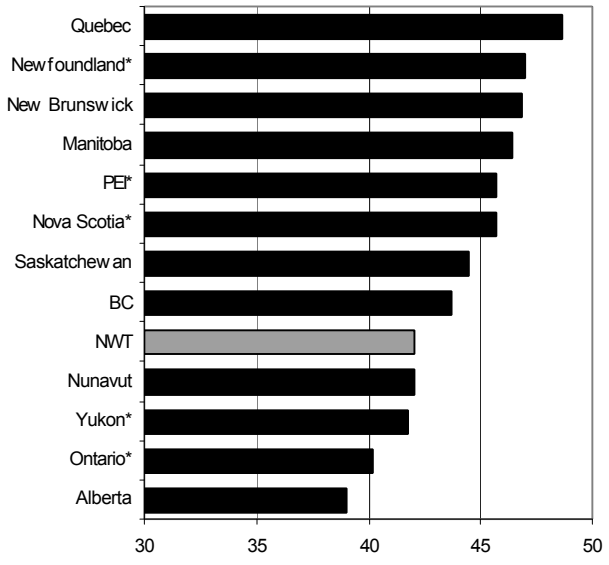
Along with higher wages, residents of the NWT also benefit from favourable rates of taxation, compared with other parts of Canada. Territorial personal income tax rates (see Chart 4-4) are relatively low. In addition, residents are allowed to claim a Northern Residents Deduction on their federal income tax, effectively lowering their overall income tax rate. Furthermore, the Territory is about to embark on a two-year program of sizeable tax cuts. Like most other parts of the country, the NWT is moving over to the tax-on-income system for the 2001 tax year. Increases in basic personal exemptions will mean that, as of 2003, territorial taxpayers will only start to pay territorial income tax on taxable incomes in excess of $20,650. This level will be by far the highest in the country (provided no other jurisdiction follows suit). The marriage, age and disability exemptions will also rise substantially.

Corporate income tax rates also compare favourably with other areas. While Alberta and Ontario have recently embarked on major corporate tax cutting programs the NWT has been quick to follow suit. This year's budget cut the general corporate income tax rate from 14 to 12 per cent, as of July 1st, and the

Chart 4-4

Top Marginal Tax Rates[1], 2002

(per cent)



* High-income surtaxes also apply.
[1] Combined federal and provincial/territorial rate.

Source: Conference Board of Canada

small business rate from 5 to 4 per cent. In addition, goods and services are only subject to the federal Goods and Services Tax (GST). The Territory does operate a 1 per cent payroll tax that is paid by non-resident employees and high-earning residents.

Overall, the tax structure of the NWT cannot be said to pose a disincentive to investment and to attracting people to the territory. However, the presence of stiff fiscal competition from neighbouring Alberta means that the NWT faces little choice but to maintain competitive rates. This also means that tax cuts should not necessarily be taken as an indicator of territorial fiscal wellbeing.

TERRITORIAL FORMULA FINANCING

This section has already shown the relatively large degree of dependence of the territorial government on federal transfers. Foremost among these transfers are those that fall under the heading of Territorial Formula Financing (TFF). These transfers are designed, with a similar aim in mind as for the Equalisation program for the provinces, to provide the territorial governments with the ability to provide services of a similar standard to those in other parts of the federation.

The nature of the TFF (see Exhibit 4-7), though, creates some unusual incentives for the territorial government with regard to economic development. One of the main ones is that the GNWT only gets to retain a fifth of any incremental revenues resulting from new economic activity. The remaining 80 per cent are matched by an equivalent reduction in TFF transfers. This obviously severely restricts the GNWT's ability to recoup the costs of any large-scale investments it chooses to make from any future resource revenues. Nova Scotia and Newfoundland have also been faced with the prospect of rapid declines in the level of transfers in line with rising natural resource revenues. They have been able to negotiate accords[67] that protect them from rapid reductions in equalisation payments.

Population statistics and dynamics also take on an added significance with TFF. In 2000-01 TFF transfers amounted to $571 million, or close to $13,600 for every resident of the NWT. By contrast, Newfoundland, the province with the highest amount of equalisation transfers per capita in 2000, received just $2,100 for each of its residents.[68] This situation means that population gains and losses have a much larger direct impact on the GNWT's ability to fund infrastructure and social programs than they do in other provinces. It also means that the GNWT has a much higher incentive to boost its population for purely financial reasons. Given the small population of the NWT, these incentives come to play an important role in government investment decisions.

The fact that the current mechanism only provides transfers in respect of permanent residents also has an important impact. The NWT is in a special situation in that a lot of workers in the oil, gas and mining industries may work in the Territory but retain their permanent residence elsewhere. This means that the GNWT not only fails to add such workers to its income tax base but also receives no transfers in respect of such people even though they use services provided by the territorial government. Moves to find

---

[67] The *Nova Scotia Offshore Accord* and the *Newfoundland Offshore Accord*.

[68] The other two territories receive transfers of similar magnitude to those of the NWT.

Exhibit 4-7

Territorial Formula Financing

1. The federal government makes an annual conditional transfer to each of the three territorial governments to bridge the gap between the spending needs of the territories and the revenues the territories are capable of raising from their own sources;

2. The Territory's spending needs are set according to a historically determined level known as the Gross Expenditure Base (GEB);

3. The GEB is adjusted annually in line with provincial/local government spending growth to reflect the spending pressures facing governments in other parts of Canada;

4. The GEB is also adjusted to reflect population growth in the Territory's relative to that in the rest of the country;

5. Increases in the GEB are capped so that growth does not exceed growth in GDP;

6. The territories' revenue-raising ability is assessed according to the amount they could raise if they operated similar fiscal regimes to governments in other parts of Canada;

7. The territorial governments may retain a fifth of any revenues resulting from new economic activity the remaining increases being offset by reductions in federal transfers.

Reproduced from "*The Slave Geological Province: Transportation and Economic Development*", The Conference Board of Canada, 2001.

mechanism could be found to provide transfers in respect of such people might reduce the level of concern about such "jobs tourists" and the main rationale for the NWT payroll tax. It would also reduce the degree of concern about the population impacts of major projects.

DIVERSIFICATION FUNDS

Governments can also play a role in ensuring that the economic structure of the NWT can be diversified to ensure that its ability to generate wealth is sustained over the long term. This is particularly important for the NWT where many current opportunities are associated with non-renewable resources whose benefits, by their very nature, are finite. These resources are also liable to sizeable fluctuations given the volatile nature of many commodity prices.

Other jurisdictions, such as Alberta, Alaska and Norway, have established diversification funds using their resource revenues. Alberta established its Heritage Fund in 1976 and by 2001 it had funds of $12.5 billion. The fund is divided into two parts: the Transition Portfolio to meet immediate needs and the Endowment Portfolio, which is invested to provide savings for the long term. The Transition Portfolio is due to be phased out by 2003 and all its assets transferred to the Endowment Portfolio. In Alaska, about one third of annual oil royalties flow into the Permanent Fund, an independent institution which invests these revenues. The Fund then takes the annual income, after allowing for inflation, from its growing capital and pays it out to each Alaskan. In 2001, the payout was over US$1,850 per man, woman and child. The Norwegian government invests its net cash flow from petroleum activities in the Petroleum Fund. The fund's income also includes earnings on its assets, all of which

are invested outside Norway. The Fund is used to bridge the government's non-oil deficit over the short term and meet the spending pressures of population ageing over the long term. At the end of 2001, the Fund's holdings amounted to about 42 per cent of GDP.

Such funds can help avoid the fiscal trap of using royalty flows directly to provide services, reduce taxes, or to provide direct dividends, moves that are likely to be unsustainable over the long term. [69] It can be highly tempting, especially in the case of a jurisdiction just developing an industry, to spend this principal directly rather than limiting spending to (at most) the interest earned on this principal. Invested revenues can be used to safeguard services for the future once resource revenues have been exhausted. Investing these revenues in areas and industries not related to those in the NWT can also help diversify future revenue streams. Examples of this already exist in the NWT. The Inuvialuit Investment Corporation has invested the settlement from the Inuvialuit land claim in a portfolio that is diversified globally and nationally and by industry. Even if revenues are not invested directly in local firms they can be used to promote the skills of the labour force and diversification of the industrial base of the economy or within sectors. For example, improved geographical and geological data sources may also help to bring about diversification within the non-renewable resource sector.

[69] The NRTEE report on Aboriginal Communities and Non-Renewable Resource Development strongly recommends the setting up of a savings and diversification fund.

5 Sector Outlook

This chapter of the report will provide an outlook for various sectors and sub-sectors of the NWT economy over the next twenty years. It considers the major factors that affect development in each sector in light of the availability of the four forms of capital as detailed in the previous chapter. These include factors such as infrastructure requirements; labour force requirements in terms of population, education and training; taxation issues; regulatory hurdles; and environmental concerns. It will also consider the scale and nature of developments and the benefits that they may bring to the rest of Canada.

5.1 Non-Renewable Resources

5.1.1 OVERVIEW

Mining for non-renewable minerals, both metallic and non-metallic, and mineral fuels, such as oil and gas, is one of the NWT's largest income-generating industries. In 2001, the mining industry as a whole contributed $585 million, or 24 per cent, to the Territory's GDP. This contribution consists of two direct activities: mineral exploration and mineral extraction. Mining operations spur a multitude of spin-off activities in sectors such as construction, commercial services and transportation and storage. Exploration activity performed by private operations consists of activities surrounding the gathering of information on mineral deposits (aerial mapping, core sampling, etc.) as well as some on-site service activity such as drilling. Government and private firms spend millions of dollars over several years gathering data on mineral deposits prior to the development of a mine site. This activity employs a number of local residents, which contributes to the Territory's economy directly. It should be noted that economic activity performed by government would be recorded under public administration.

The fact that the potential of the mineral sector in the NWT is vast is attested to by the reserves of various minerals already discovered and ongoing intense exploration activities for further deposits. Overall, firms are estimated to have spent $75 million on exploration and deposit appraisal in 2001 in the Territory.

The expansion of the mining sector in recent years has brought significant opportunities for market employment and business development to many local communities as many new projects are "fly-in/fly-out" operations or close to population centres. New mining developments have also begun to increase the level of resource royalties available to governments in the NWT. At present, only a small portion of these royalties provides income to local beneficiaries with almost all resource royalties being paid to the federal government. Over time, the resolution of talks on devolution and Aboriginal self-government should lead to an increase in the share of resource royalties going to territorial and Aboriginal governments. When combined with an expanding mining sector, this should translate into increased revenues for the NWT.

Chapter 3 provided a brief introduction to the history of the non-renewable resource sector in the NWT. Although prospecting had been carried out in the NWT since the late nineteenth century, it wasn't until the 1930s that a significant mining industry began to

develop. The gold rush of this period was a major spur to the growth of the city of Yellowknife. Metal mining continued to be a mainstay of the economy until the 1980s and early 1990s when low prices led to the closure of all but two gold mines in Yellowknife. In 2000 these two mines produced $58 million of gold and employed over 300 miners. Production fell by about 10 per cent in 2001 to just over four tonnes of gold worth about $54 million.

The NWT mining industry was, however, revitalised by the discovery of diamonds in the Slave Geological Province in 1991, which started one of the largest staking rushes in Canadian history. The Slave Province shares some of the same geological features as other diamond producing areas such as South Africa and Russia, and numerous diamond-bearing kimberlites have been discovered in the region. Kimberlites have also been found in Alberta, Saskatchewan, Manitoba, Ontario and Québec. [70]

The rest of the 1990s in the NWT saw the discovery of several diamond deposits with economic potential and, in October 1998, North America's first diamond mine was opened at the Ekati site in the Lac de Gras region 300km northeast of Yellowknife. Construction of a second mine in the area at Diavik has begun and production is due to start in the first half of 2003. Furthermore, plans have been submitted to regulators for approval of a third development at Snap Lake, to the south of the other two mines.

The scale of these developments is vast and the presence of the NWT's diamonds is already being felt in world markets. It is rare that kimberlites contain sufficient amounts of diamonds to make them economically viable to mine and the presence of two mines (at least) will make the Territory a significant centre of world production.[71] The high quality of the deposits in the NWT will enhance this presence. The Ekati site alone produces about 4 per cent of global production by weight and about 6 per cent by value. In 2000 it produced 2.56 million carats, valued at $638 million, or about US$165 per carat, making Ekati's diamonds some of the most valuable in the world. Preliminary data from Natural Resources Canada show that diamond production in 2001 jumped 51 per cent to 3.69 million carats. The value of production is estimated to have risen by 36 per cent to $847 million.

Given the rich findings already made, exploration for diamonds continues apace in the NWT. In addition to looking for diamonds, though, a number of companies are also continuing to search for metals in the NWT. These include gold, tantalum, copper, lead, zinc and other base metals.

---

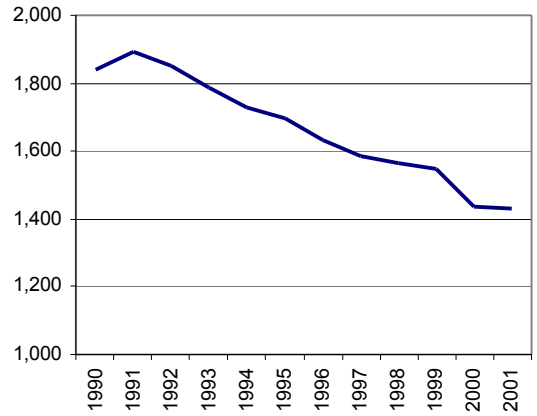
[70] Kimberlite is a type of diamond-bearing rock usually found in carrot-shaped cones of rock called pipes. These represent the roots of ancient small volcanoes and are found in geological regions known as cratons.

[71] The Diavik mine website states that of 5,000 known occurrences of kimberlite in the world only 23 contain enough diamonds to be mined.

The history of mineral fuels production in the NWT dates back to the Second World War when Imperial Oil opened the Norman Wells field in the Sahtu region in 1943. A pipeline was built to link the field to Whitehorse in the Yukon. However, it was soon abandoned, although the path followed by the former pipeline has found a new life as a hiking trail. It wasn't until the 1980s that another pipeline was constructed to ship oil out of the field to supply the hungry US energy market. The line to Zama Lake, Alberta was completed in 1985 and was accompanied by a major expansion of the field's productive capacity up to 28,000 barrels per day. However, production volumes have been falling in recent years (see Chart 5-1) and the pipeline is said to be running at about 80 per cent capacity.

Chart 5-1

Oil production
(thousands of cubic metres)

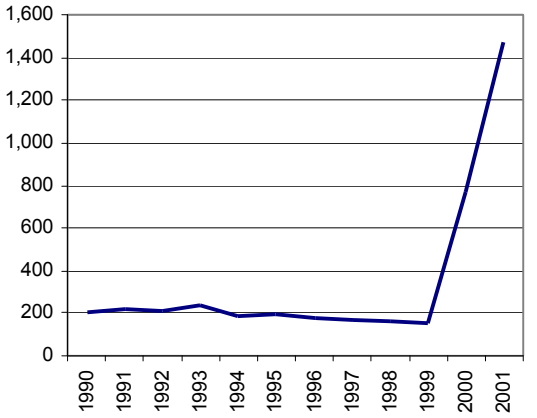


Source: NWT Bureau of Statistics

Exploration for oil and natural gas has experienced a boom in the last decade since DIAND lifted its moratorium on issuing exploration rights—it had been in place since 1977 in light of unsettled Aboriginal land claims. After the exploration ban was lifted in 1994 prospecting began anew and has already led to a number of new natural gas production facilities coming on line. In 1999 production started at the Ilkhil field, which supplies the residents of Inuvik with natural gas (Norman Wells is also supplied with natural gas produced locally). The following year saw the start of natural gas production at four new wells in the Ft Liard region that are connected to the BC grid. These new developments helped push up production by over 400 per cent in 2000 (see Chart 5-2). Production then almost doubled again in 2001 to 1.47 billion cubic feet. Meanwhile, production has come to a virtual standstill at the Pointed Mountain site in the southern part of the Territory, which had been operating since 1972.

Chart 5-2

Natural gas production
(millions of cubic metres)



Source: NWT Bureau of Statistics

5.1.2 INDUSTRY ISSUES

Despite the richness of mineral resources found in the NWT, there are major barriers to the mining industry in the Territory that touch on all four forms of capital described in Chapter 4. The harsh climate, imperfect information on the potential of mineral resources, the lack of a skilled labour force, the relative paucity of local infrastructure and high transportation costs all make the NWT a high cost environment to operate in.[72] Strict and potentially overlapping regulatory requirements and the costs associated with impact benefit agreements may also pose barriers to development. That producers are willing to absorb these costs bears witness to the richness of diamond deposits in the NWT.

Nonetheless, the fact that the NWT is a relatively high cost jurisdiction may put it at a certain disadvantage compared to other areas. It is the relative costs of mining in the NWT compared to those in other jurisdictions that will help determine the amount of exploration and development activity in the Territory. The main operating costs of mining are those of labour and, to a lesser extent, fuel. These tend to be higher than those in other parts of Canada due to the need to attract and retain labour and ship in fuel over long distances. Capital outlays are also increased by the need to import most equipment and the need, in many cases, to create accommodation, transport and other infrastructure that already exists in other areas. However, long-run reductions in relative transportation and communications costs should tend to reduce the importance of these barriers over time.

The importance of the role that costs play for the mining industry is amplified by the fact that the prices of many key commodities are determined on world markets. This means that firms are generally not in a position to influence the nature of the demand facing them and so the main avenue available to them to boost profits is through cost reductions. Firms, therefore, also have a limited ability to absorb costs that are imposed by outside agents, such as governments. These costs may be direct, as in the case of taxes and socio-economic benefit agreements, or take a more indirect and less easily quantifiable form, as in the cases of delays to developments caused by relatively slow regulatory processes.

From the Conference Board's research and interviews with stakeholders, it would appear that the chief matter of concern for the investment climate for the NWT non-renewable resource sector revolves around questions of governance. While developers recognise the rich potential of the NWT they claim to be frustrated by the slow and complex governance, consultative, regulatory and environmental assessment structures of the NWT, together with uncertainty over the role of new regulatory bodies. Compounding some of these problems is the uncertainty over the political present and future of the NWT. The unresolved state of land claims in the southern part of the NWT has made access to land problematic in certain areas and slowed the pace of exploration. In addition, concerns have been expressed about the unrealistic expectations of benefits that some communities have of new and potential developments. The unknown impact that devolution and self-government may have

[72] Some mines have to build their own airfields, power plants, communications systems, accommodation, etc., in addition to other facilities.

adds to the uncertainty surrounding the investment climate. The Fraser Institute Annual Survey of Mining Companies, 2001/2002, confirms this general picture. It found that respondents considered the NWT a top-rated jurisdiction in terms of mineral potential. However, the opinions of the mining companies were less favourable about the policy environment of the NWT compared to that of other parts of Canada with Québec, Alberta and Ontario judged by respondents to have much more attractive policy environments.

While an over-complex regulatory system may create a barrier to development it is important to bear in mind that resource development can have a significant impact on the environment if necessary precautions are not taken. The most obvious environmental impacts concern the direct destruction of the environment during construction and operation. More subtle manipulation of landscape or waters may affect habitats disrupting or destroying fish and wildlife populations. Access roads to the mines may also bring in hunters, trappers and others as well as those employed in the mines increasing human population pressures. There are also less direct impacts on the environment. Tailings ponds may contain metals and sediments that can damage rivers and lakes if water discharged from these ponds are not carefully controlled. Metals may also leach from waste rock and rock exposed in production posing a long-term potential hazard to the environment.

Resource development can also have important social impacts, especially in the NWT where a substantial share of the population has only a relatively short history of involvement in the wage economy. Thus, the costs of consultation and socio-economic agreements can help ensure the co-operation of local communities without which the process of bringing deposits into production might be much lengthier and much costlier. These agreements also contain clauses that can ease the impacts of the change in patterns of industrial activity on local communities through channelling some of the benefits of development to local communities and taking into account local social values. One of the main ways that these agreements have spread the direct benefits of development is through employment quotas. At Ekati, for example, hiring preference is given to Aboriginal people and other northerners and there is an overall employment target of 62 per cent for Northerners and 31 per cent for northern Aboriginal people provided that they have the requisite skills. Training provisions in the agreements help local people acquire these skills. There are also targets for local supply of goods and services, which have provided a boon for contractors in the NWT. In turn, higher local incomes can spur the creation of markets for local goods and services that were not previously viable, and provide people with the means to engage in traditional activities that they were unable to afford before.

Work patterns at the mines have also been adapted to allow people to combine work in the wage economy with that in the traditional one. There is a long-term trend for the industry in the North to “fly-in, fly-out” type operations rather than building up settlements around mine locations. Ekati provides an example of this where workers are flown in from various communities in the NWT and Nunavut and generally work on a two-week rotational basis. When at the mine employees work 12-hour shifts, seven days a week. Other mines have followed suit, mostly at the behest of local communities who find this style of work the most preferable.

While industry appears to accept that the special environmental and social situation of the NWT mean that the costs of business are higher than in other jurisdictions, issues of governance do appear to be having an impact on the pace of exploration and development. Other issues were raised, including the federal government corporate income tax structure, the lack of skilled labour, the lack of transportation infrastructure for exploration in some areas and the lack of geoscience and geological mapping resources. However, these issues appear to be of secondary importance and more easily resolved compared to the principal issue of governance. As such, initiatives like the proposed streamlining of the regulatory procedure for pipeline development in the Mackenzie Valley are likely to have a positive impact.

At the same time, it is important to note that more efficient and more streamlined regulation does not imply that corners should be cut, resources reduced or laws repealed. The NRTEE report has claimed that the regulatory system may be improved by increasing funding of regulatory bodies and for groups wishing to intervene in environmental assessments. However, the investment climate could be harmed if this merely resulted in a lengthening of the regulatory process.

5.1.3 Metal and Non-Metallic Mineral Mining

5.1.3.1 Diamond Mining

At present, there is one diamond mine operating in the NWT, one being built and one for which the regulatory planning process has begun. The Ekati mine, 300km northeast of Yellowknife, was opened towards the end of 1998 and has rapidly made an impression on world markets. The Ekati claim area is one of the world's richest, with well over a hundred kimberlite pipes having been discovered and the value of these kimberlites being among the world's highest – the average price of carats sold up to end May 2001 was US$165. Production at a second site, the Misery pipe, began in October 2001 and overall the Ekati mine is forecast to operate for some eighteen years. At present, ore is being processed at a rate of about 9,000 tonnes per day, a figure that is due to increase to about 21,000 tonnes in the eighth year of production. In total, nine pipes are planned to be mined, seven by open-pit methods (the ore of the Panda and Koala pipes is of higher value and will be mined by underground methods).

Continued production after the forecast life of the mine will depend on the results of exploration within the claim area, and the mine owners feel that this could reasonably result in the extension of production to 25 years. In general, firms have an incentive to concentrate their exploration activities close to producing areas in order to take advantage of existing infrastructure and avoid having to apply for new leases and regulatory approvals.

The Ekati mine has had a direct impact on the local economy. It employs about 650 people, many of whom come from local communities. These communities have seen incomes rise and unemployment and social assistance rates fall. The mine also has boosted the local economy through its agreements to purchase many supplies from local contractors. In addition, the mine supplies about a tenth of its production to diamond polishing and cutting firms in Yellowknife.

A second, even bigger diamond mine is soon due to add to the assets of the NWT mining sector. Chapter 3 showed the impact that construction of the huge mine at Diavik is having on the economy of the NWT. Construction work at the mine site on Lac de Gras began soon after all the necessary permits had been obtained in late 1999 and should be completed in early 2003.

Table 5-1

NWT Diamond resources

	Ekati	Diavik	Snap Lake
Proven and probable reserves (million tonnes)	59	27.1	22.8
Average grade (carats/tonne)	1	3.9	1.7
Carats (millions)	59	105.7	38.8
Estimated average price (US$/carat)	100	62	118
Estimated mine life (years)	18	20	20-plus

Source: Company documents

The costs of construction are substantial ($1.3 billion). Most equipment, fuel and other materials has to be shipped in over the Lupin winter road, as there is no permanent road access to the site. In 2001, over 4,000 trucks shipped in 65,000 tonnes of goods and 44 million litres of fuel to the site. These construction expenditures have spurred the local economy. First, about 45 per cent of the construction work is being supplied by northerners. The socio-economic agreement concluded between the mine owners and the GNWT also includes targets for the share of contracts from northern firms. Of the $992 million worth of construction contracts awarded by the end of 2001, 73 per cent were with northern companies.[73] The mine owners are set to maintain a ratio of 70 per cent for ongoing contracts during the operation phase of the mine (these are estimated to be worth about $100 million on an annual basis).

The benefits of production will continue to flow to the territorial economy once construction ends. The mine is due to start production in April 2003, becoming fully operational after two years. Once it does so the mine will be worked by about 400 people (wage costs are estimated at about $30 million annually) who will be flown in by plane to work on a rotational basis. Two thirds of these will be Northerners, and the mine operators have a 40 per cent target for northern Aboriginal employment. The mine owners are also providing training to northern residents to enable potential workers to acquire necessary skills for work in the mines. The mine is set to operate for twenty years producing an estimated six million carats annually at full production levels. The average price of the diamonds mined at Diavik is estimated at US$62 per carat.

In addition to these two projects various other deposits have been identified in the NWT. The one that is closest to development is the Snap Lake project being proposed by DeBeers. Documents for the environmental assessment phase of the project were submitted to the MVEIRB in February 2002 and it is anticipated that approval of the project and the issuing of permits could take a year or more. Should the verdict of the various regulators be favourable then preliminary construction work at the mine site 220km northeast of Yellowknife would begin in 2003. The bulk of the work would take

[73] "*Diavik Fourth Quarter Update*", Diavik Diamond Mines Inc., January 2002.

place in 2004 with production starting towards the end of the following year. Full production levels — of about 3,000 tonnes of ore per day — are planned to be reached in early 2006 and continue for about twenty years. A 1999 bulk sample estimated that the site had reserves of 21.3 million tonnes with an average grade of 1.7 carats per tonne and an estimated average value of US$118 per carat. The project description submitted to the MVEIRB subsequently updated the level of reserves to 22.8 million tonnes. Again, socio-economic agreements will be put in place ensuring local hiring preferences. Training would also be given to provide locals with the skills they would be required to have to be considered eligible for employment. It is expected that the mine would employ an average of 450 people during construction and 525 on a rotational basis during operations.

Another deposit in the Slave Geolological Province is in an advanced exploration phase. This Gahcho Kué (Kennady Lake) site, 300km northeast of Yellowknife is still being assessed as to its viability. An airstrip capable of taking Hercules aircraft is already in place.

WORLD DIAMOND OUTLOOK

The modern diamond industry began in the 1870s with the discovery of significant diamond deposits in South Africa. The industry has since expanded across sub-Saharan Africa and into Australia, Russia, China, parts of South America and most recently Canada. While South Africa is still a major producing country it now only supplies about 14 per cent of world output of rough diamonds (see Table 5-2) by value. Botswana and Russia are now the world's top producers, accounting between them for nearly half of the US$7.9 billion world market in rough diamonds. By the time Diavik and, possibly Snap Lake, come on stream Canada could account for some 15 to 20 per cent of global production. Canadian diamonds tend to be relatively high quality and so their share of the market in terms of volume is correspondingly low. Ekati accounted for just over 2 per cent of the 110m carats of diamonds mined in 2000.

Table 5-2

World diamond production, 2000

	Carats (millions)	Average Grade (carats/tonne)	Average Value (US$/carat)	Total Value (millions of US$)
Botswana	24,651	0.90	86	2,125
Russia	20,500	0.95	78	1,595
South Africa	10,583	0.44	105	1,110
Angola	4,006	N/A	185	740
DR Congo	16,500	N/A	35	585
Canada	2,629	1.05	173	454
Namibia	1,520	0.05	276	419
Australia	26,200	2.13	14	361
Other	3,587	N/A	131	469
Total	**110,176**	**N/A**	**71**	**7,857**

Source: Terraconsult (http://www.terraconsult.be/)

Diamonds that come directly from mines are termed rough diamonds. These are then polished and cut by secondary processors before being transformed into jewellery. Broadly speaking, the rough diamond market can be split into three principal markets: one for stones of gem quality; one for stones of near-gem quality; and one for industrial purposes. On average, close to half of the carats produced each year are categorised as being of gem or near-gem quality. The prices of rough diamonds range from a few dollars, or even cents, for a carat for industrial quality diamonds to over US$300 for top quality gemstones such as those found in some Angolan river beds. Production from Ekati is nearly all for the gem and near-gem stone markets, of which it accounts for about 4 per cent by volume.

Once diamonds are mined they are sold on to polishers and cutters who process the diamonds in readiness for the retail market. While gem quality diamonds are marketed worldwide, most near-gem quality stones are sold in India. This is because polishing and cutting diamonds is a labour-intensive industry and is only economically viable in the case of near-gem stones in places where labour costs are relatively low. About 80 per cent of the gemstones produced (in terms of carats) annually are cut in India.[74] The creation of this market for near-gem stones over the last half-century has made deposits that were once not economically viable into candidates for development and helped spur the diamond exploration industry.

There is good reason to believe that much of the new supply of diamonds coming on stream in the next decade or so will come from Canadian sources. As mentioned above, there are very few potentially economically viable kimberlite deposits in the world and Canada possesses a large share of the world's diamond-bearing rock. Furthermore, Canada represents a relatively unexploited source of supply, in contrast to other areas like southern Africa where diamond mining has been practised for a long time. An indication of the interest in Canada as a new source of diamonds can be seen in DeBeers, long the world's leading producer, devoting half its 2001 global exploration and evaluation budget to Canada.

Another competitive advantage for Canada lies in its relatively stable investment climate compared to other competing jurisdictions. For example, one of the main other large potential diamond projects that could be developed in the near future — the Verkhotina project north of Archangel in Russia — has seen development significantly delayed due to legal complications. The potential for other projects in this region is relatively limited given the small area of diamond-bearing rock in the region despite some other finds. The Kuloi Craton is less than a tenth the size of the Slave Craton in the Northwest Territories.

The demand for rough diamonds is driven largely by the retail jewellery market, and is thus, dependent on the global public maintaining the belief that diamond jewellery represents a valuable luxury good. The world's dominant diamond producer and seller, DeBeers, is aiming to boost its promotional activities just so as to bolster this demand. It, like BHP Biliton, the owners of the Ekati mine, are also encouraging sales of their

[74] "*Operating Diamond Mines and Recovery Plants in the Republic of South Africa, 2001*", Department of Minerals and Energy, Republic of South Africa.

own brand name diamonds. Branding is seen as a way in which producers can gain a degree of market power and increase profits.

Despite temporary fluctuations, growth in demand for diamonds has largely kept pace with growth in global income. In the 1980s much of the growth in demand came from Japan as its economy soared and then fell back as that country's economic problems began to take hold. At present the US forms the largest retail market. Although tastes could change significantly in the future, it is reasonable to assume that over the medium to longer term this relationship between demand and world income will be maintained. The Asia-Pacific is one region that could potentially see increasing demand in the years to come. In the short term, the recovery in the US economy in 2002 and 2003 should restore demand after the fall induced by last year's global economic downturn.[75]

Knowledge of the demand and supply factors affecting the market for rough diamonds can provide a good indication of future prices. However, forecasting rough diamond prices is made difficult by the fact that there is no benchmark price that can be used as a proxy for movements in other parts of the market. For example, while there are many differences in oil quality and, as a result, many different prices for oil the state of the market is usually discussed with reference to one or two key indicators – the main one for the North American market being West Texas Intermediate. In contrast, diamonds are priced according to a number of factors such as size, cut, clarity and cuttability. There are thousands of different diamond prices and no single rough diamond price to act as a proxy. The number of different characteristics that come into play makes it difficult to use standard forecasting techniques when considering rough diamond prices where subjective evaluations of the quality of diamonds can play a role. Furthermore, the presence of a dominant player in the rough diamond trading market further complicates matters. The diamond market tends to be a secretive one and information is not always easy to come by. Nonetheless, it is possible to consider information on general trends in the diamonds market and the impact that these will have on prices.

Recent years have been marked by an increase in supply of diamonds as production has increased in new areas, such as Canada and parts of Africa. This increase in supply put increasing pressure on the traditional control of the diamond market by DeBeers. For a long time the company played a controlling role in the world diamond industry by maintaining a cartel, the Central Selling Organisation (CSO), founded in London in 1934. This maintained strategic stockpiles of diamonds, buying and selling in markets to help eliminate any undue fluctuations in diamond prices. However, the company has turned away from this role as its share of the diamond market fell gradually from about 85 per cent in the late 1980s to about 60 per cent at the turn of the millennium. The firm is now turning its attention from price maintenance to promoting diamonds as a luxury good and plans to gradually reduce its stockpile. However, the company still produces a large share of the world's diamonds and this continues to give it a substantial degree of market power. The CSO has been renamed as the Diamond Trading Company (DTC) and continues to maintain marketing arrangements with other

[75] Sales of rough diamonds by the Diamond Trading Company, the world's main diamond trading company, fell by 21 per cent to US$4.45 billion in 2001.

producers, such as the owners of the Ekati mine.[76] Nonetheless, the increase in supply of diamonds from new suppliers outside the DTC should continue to reduce the latter's dominance and increase the level of competition in the rough diamond market. Working against this downward pressure on prices over the longer term is the envisaged decline in global supply. If attempts to eliminate so-called "blood diamonds"[77] prove successful a further source of fringe competition to the DTC and other major suppliers could be removed.

On balance, the combination of demand and supply pressures leads the Conference Board to believe that diamond prices should return to more long-term trend levels in the next couple of years as the global economy recovers, and then maintain these levels in real terms. There are both downside and upside risks to this forecast. On the upside, prices could be boosted by increased promotion of diamonds and relatively deep supply decreases. On the other hand, increasing competition in the marketplace and a rapid increase in Canadian and other supply could depress prices.

NWT Diamond Industry Outlook

This outlook for rough diamond prices should not do anything to deter the diamond exploration activity taking place in the NWT and other parts of Canada. However, the likelihood of development of Snap Lake, Gahcho Kué and other sites depends on several additional factors. One of these is the degree of competition provided by other jurisdictions in Canada. Over the medium term the Northwest Territories is still ahead of the field. In general, it takes at least five years between discovery and bringing on supply. Thus, even if deposits are developed in other parts of Canada it will be a while before they come on stream. Nonetheless, despite the more advanced state of exploration in the NWT, the Slave Craton is much smaller than the Superior Craton in Manitoba, Ontario and Québec. Nunavut, Alberta and Saskatchewan also represent potential sources of supply. These areas also have lower infrastructure requirements than the NWT and are seen by industry as having more favourable investment regimes. As a result, they could begin to provide serious alternatives for development towards the end of the decade. Furthermore, exploration activity in the NWT is tending to focus on the evaluation and appraisal of the four main sites already mentioned and away from exploration for new deposits. While this may be due to the incentive to expand production at sites where infrastructure is, or is likely to be, in place, it may also be an indication of the relatively high financial and other costs of doing business in the NWT. The Conference Board has heard that junior and medium-sized firms are increasingly concerned about being pushed out of the exploration industry due to the complex regulatory system and the costs of ensuring local support for their activities.

There is also a question of whether the population of the NWT wishes to see further developments take place. During its interviews and research, the Conference Board detected a degree of ambivalence towards the opening of more mines. Another factor

---

[76] 35 per cent of the mine's production is sold to the DTC. A tenth is sold to three cutters and polishers in Yellowknife and the remainder in Antwerp.

[77] This term refers to diamonds that are smuggled on to world markets by rebel movements in Africa who use the revenues to fund violent activities.

that might influence the development of deposits in the NWT is the availability of labour. Any new developments beyond and including Snap Lake will take place in a time when labour markets in Canada will be increasingly tight. This will make it harder for the NWT to attract labour, especially skilled labour, from elsewhere other than maybe on a fly-in, fly-out basis. This highlights the importance of developing the human capital skills of the domestic NWT labour force.

On balance, the Conference Board feels that the probability of development of the Snap Lake site is fairly high. The background work necessary for the environmental assessment phase of the project and the submission of this work for regulatory review represent a serious commitment. While it is not definitive, it represents the most advanced prospect for development in Canada at present. In addition, the construction phase for the project would dovetail conveniently with the completion of work at the Diavik site. The prospects for development of additional sites, however, appear less certain. Of course, sites in other parts of Canada may prove not to be economic, attitudes to development may change and there may be a pool of skilled and available labour.

The impact of the construction of the mines together with their ongoing operations has already had a considerable impact on the development of the NWT economy and will continue to do so over the next twenty years or more. The scale and timing of future impacts will depend on the state of world markets, the success of exploration and the likelihood of development of Snap Lake and other mines. Nonetheless, ongoing production at just the Ekati and Diavik mines will substantially boost the GDP of the Territory and provide employment to local residents both in the mines and through spin-off activities.

The impact of mining activity in the NWT on the rest of Canada is also substantial. Much of the equipment and labour for the mines has to be imported from other parts of the federation, and suppliers of these goods and services create further economic activity when they make expenditures on inputs for their own production processes. In addition, employees of firms directly involved in these projects and those of their suppliers create further economic activity when they spend the income they receive. A previous Conference Board study estimated that nearly a fifth of the GDP impacts of developments in the diamond mining sector in the NWT would occur in other parts of Canada.[78] The share of employment impacts was even higher — over half were estimated to occur outside the NWT. Ontario, Alberta, BC and Québec were the principal beneficiaries. Governments in other parts of Canada also receive substantial benefit from the direct and indirect tax revenues generated by activities in the NWT.

In addition to income tax and indirect tax revenues, the federal government also benefits from royalty revenues on mineral production in the NWT. In the absence of resource-sharing agreements, the GNWT and the Aboriginal governments have only limited royalty rights. The royalties due on mining activity in the NWT are regulated by the Canada Mining Regulations, and are based on the value of minerals produced

[78] "*The Slave Geological Province: Transportation and Economic Development*", The Conference Board of Canada, 2001.

rather than on the income earned through production. Royalties are not deductible for income tax purposes, although firms in resource-based industries in Canada are generally allowed to deduct 25 per cent of their profits from resources for federal corporate income tax purposes. DIAND acts as the collection agent for the federal government in the NWT. In the case of the diamond industry, the actual value of diamonds produced is assessed for royalty purposes by a government diamond evaluator in Yellowknife.

Trying to forecast the level of royalties that the federal government will receive from diamond production in the NWT is made problematical by the difficulties of establishing a representative tax base, not to mention the inherent uncertainty involved with any long term output, quality and price forecasts that have to be made. Producers are entitled to make a number of deductions from the value of production to reduce their liability to royalties. These include deductions for processing activities, such as the sorting and evaluation of diamonds, repair and maintenance costs, exploration costs, depreciation and so on. Another factor making a detailed calculation of possible royalty revenues is the absence of historical data on which to base forecasts.

Nonetheless, certain assumptions can be made to give an indication of the broad scale of potential royalties. Mining royalties are assessed on the remaining value of output according to a sliding scale that reaches a maximum rate of 14 per cent for producers with annual output values of more than $45 million. However, royalties are capped at a maximum rate of 13 per cent. Given the high output levels of the individual diamond mines, it is reasonable to assume that this rate will apply in the context of the total production levels described in Table 5-2 and a forecast of constant real diamond prices. This would imply a total output value of $26.4 billion from the three mines and an upper limit on royalties of $3.4 billion, before deductions.

Of course, total royalty revenues, which benefit Canada as a whole, could prove higher if the resources producers are putting into exploration activities at the mine sites reveal additional economically viable reserves. Corporate income tax revenues payable by the mine owners to the federal government will also be substantial.

5.1.3.2 Other Metal and Non-Metallic Mineral Mining

Before the arrival of the diamond industry the mainstay of the mining industry in the NWT was gold. This industry dates back to the 1930s and was a principal driver of the development of Yellowknife. Over the years the number of producing mines has fallen to two, namely the Con and Giant gold mines in Yellowknife.

As well as gold the NWT possesses deposits of many other base and precious metals and minerals. Several deposits of tungsten, uranium and base metals have been economically viable at various times in the past and been exploited. At some sites production facilities were mothballed so that reactivating these sites is relatively low-cost and allows firms to take advantages of improving prices or new discoveries at existing sites. However, price levels and the scale of identified deposits have not been strong enough to warrant serious development proposals of new sites up to now. Despite this, exploration for a variety of minerals in the NWT continues apace. Potential deposits of tantalum (a key component of mobile phones), nickel, copper and other

mineral prospects are being explored in the Slave Province, to the east of the Great Slave Lake and along the southwestern border with Yukon. Several gold deposits are also being explored in the southern part of the Slave Geological Province.

GOLD

During 2001 Miramar, the owners of the Giant and Con mines, reported that its operations produced almost 130,000 ounces of gold at an average cost of US$256 per ounce. The average price of gold for the year was $276.50 per ounce. The firm is hoping to match its 2001 production levels during 2002, but to cut its costs further to under US$240 per ounce, and maintain similar cost and production levels into 2003. DIAND is set to continue funding the $300,000 monthly costs associated with treating the large stocks of arsenic contained in the Giant mine. Whether production continues into 2004 and beyond will depend on gold prices and the discovery of new veins.

A third area for possible cost savings is for that of energy. Miramar generates the bulk of its own energy needs at its Bluefish Hydroelectric Plant. However, the additional energy that is required is purchased from the NWT Power Corporation at market rates, which are substantially higher. There is a belief among mining interests in Yellowknife that the Con Mine could remain open for ten more years if operation costs could be lowered. The costs of supplying this operation with reduced power costs should be weighed against the cost of the mine shutting down earlier. There may be a net benefit to the Territory in having it remain open.

Despite the modest prospects of the two existing mines, prospecting for gold continues in several sites in the Slave Province. Development of these sites will be dependent on the future path of gold prices and the costs of extraction. With gold prices at relatively low levels, producers also have less ability to weather bad times than those with deeper pockets, such as the diamond producers. They also have to face competition for labour, especially skilled labour, from existing developments in addition to the costs of negotiating the regulatory system and the socio-economic agreements that appear to have become one of the usual costs of doing business in the NWT.

TUNGSTEN

The start of 2002 saw the re-opening of the CanTung tungsten mine, North America's only one, near Nahanni National Park in the Deh Cho region. Located three kilometres east of the NWT-Yukon border, the mine had been closed in 1986 after 24 years of operation when world markets were flooded by Chinese tungsten. As Chinese production has declined in recent years market prices have risen making the CanTung mine economically viable once more. The deposit is reported to contain 1.27 million tonnes of ore grading 1.2 per cent tungsten and the life of the mine is estimated at four-and-a-half years. Three years worth of tungsten concentrate to be mined from the site was already sold at a guaranteed floor price before production began. Production recommenced in January 2002 and is quickly expected to reach full production levels of about 3,000 tonnes of tungsten (at annual rates). Most local employees among the approximately 150 staff come from Yukon from where the only road access to the site exists.

There is an even larger known deposit of tungsten at the MacTung site situated about 100km north of CanTung. Its reserves are estimated at 6.1 million tonnes, grading 1.2 per cent plus 17.2 million tonnes at 0.8 per cent tungsten and could operate for up to 30 years. The two sites combined represent about 15 per cent of the world's proven reserves. The owner's of the deposits, North American Tungsten Corp., have completed pre-feasibility studies and claim that the site could be readied for production within three years. However, higher and more stable tungsten prices would be necessary to justify the estimated $80 million needed to bring the site into production.

BASE METALS

The base metal site closest to development in the NWT is that at Prairie Creek located 90km northwest of Nahanni Butte near Nahanni National Park. Mining activity at the sprawling site dates back to 1928 and the mine and mill currently being developed were first built in 1982 but never operated. The zone of the site being developed is high-grade and preliminary estimates indicate 11.85 million tonnes of reserves with a content of 12.5 per cent zinc, 10.1 per cent lead, 0.4 per cent copper and 0.0016 per cent silver. The site is currently in the permitting phase and the owners (Canadian Zinc Corp.) plan to apply for a full operating permit. The firm anticipates that the environmental assessment phase of the project, including data preparation, could take up to two years. The company has already reached a development agreement with the Nahanni Butte Dene band involving various social and employment benefits and a share in the eventual profits.

All these indicators bode well for the opening of the site within the near future and the boost it would provide to the local economy. The site is expected to employ up to 170 people on site over the estimate life of the mine of 18 years or more. The possibility of improved access to the site also increases the likelihood of development. At present the site is only accessible by air. However, the mine owners are investigating re-establishing the 170km road link to the Liard Highway (either on a winter only or all-weather basis) that was built to service the site up to the early 1980s.

Again it is important to note that the developments mentioned above would add to the economic impacts generated in the diamond-mining industry, both in the NWT and other parts of Canada. The federal and provincial governments would also receive additional royalties and tax revenues from these developments.

5.1.4 MINERAL FUELS

5.1.4.1 NATURAL GAS

For the NWT, the future for the mineral fuels industry lies along two distinct paths. The most prominent of which is the development of Mackenzie Delta natural gas and the construction of a pipeline from the Arctic Ocean to the North American gas transportation grid in Alberta. The other is an incremental expansion of the natural gas industry that is now being established in the southwest corner of the Territory, producing almost 52 billion cubic feet of natural gas in 2001.[79]

The natural gas industry provides economic benefits to regions in two ways. First, there is a sizeable capital investment and labour requirement during the development stage, including development of the gas fields and construction of the transportation system (pipeline). It is here that NWT would reap the most reward, as the money comes all at once and goes to pay for direct, indirect and induced labour and services. And second, a natural gas pipeline provides long term resource royalties to government and requires a small workforce to operate and maintain the infrastructure. The revenue sharing arrangement between the NWT and the Government of Canada has already been discussed, but essentially, under the current Territorial Formula Financing agreement the GNWT will retain only a small fraction of any new resource revenues stemming from natural gas extraction. Given the increasing role of the Aboriginal groups along the Mackenzie Valley, there is potential for a third revenue source—profits. Rarely are profits available to the region unless there are individual shareholders in the area. However, the Mackenzie Valley Aboriginal Pipeline Corporation has an opportunity to become part owners of the pipeline resulting in the Territory retaining a greater portion of the economic benefits. The existing natural gas projects[80] will contribute $600 million in resource royalties over their lifetime, with the reserves in the Mackenzie Delta contributing many times this amount if exploited.

Natural gas producers in the area have raised concerns over the lack of skilled labour required during the development stages. This concern will be addressed with work crews from the south that specialise in the construction of pipelines. It should be noted that even in southern jurisdictions, these crews are often used with local labour hired to perform other work requirements. Other issues of concern to industry include producers' desire for clarification of federal/territorial/Aboriginal roles, especially in the case of land access; concerns over unrealistic local benefit expectations; the potential for incremental road infrastructure to prolong the exploration season; and the potential for the lack of pipeline infrastructure to delay development.

Despite these concerns, the ultimate decision to build any pipeline depends on the benefits and costs to the private producers. These will be influenced in part by the possibility of extending and/or expanding the proposed pipeline to accommodate

---

[79] NWT Gas and Oil Production Statistics, Government of the Northwest Territories Department of Statistics. http://www.stats.gov.nt.ca/Statinfo/indstry/non_renew/production.otp

[80] Existing production takes place at six well sites, including: Ikhil (Inuvik); Norman Wells; Pointed Mountain; and Paramount, Chevron, and Ranger (Ft Liard).

Table 5-3

North American Natural Gas Markets
(trillion cubic feet)

	1995	2000	2005f	2010f	2015f	2020f
Canadian Demand	2.5	2.9	3.2	3.4	3.6	3.9
Canadian Exports	2.8	3.5	4.3	5.2	6.5	7.7
Total Canadian Supply	5.3	6.4	7.5	8.6	10.1	11.6
U.S. Demand	21.6	22.5	25.2	28.1	31.6	34.7
Natural Gas Price (AECO spot price, in U.S. $ per mmbtu)	0.762	3.372	3.006	3.465	3.886	4.362

'f' represents a forecast

Source: National Energy Board; Natural Resources Canada; The Energy information Administration; The Conference Board of Canada; Duke Energy Marketing

Alaskan reserves. However, the greatest factor will be the demand and supply issues facing North America as a whole. Clearly, the reserves in northern Canada are costly to develop meaning that producers will tap these reserves only after cheaper supplies are depleted. This being said, the long-term prospects for natural gas in North America are very good and should result in the need for these reserves. In 2000, Canada and the southern 48 States consumed slightly more than 25 trillion cubic feet of natural gas. This demand is expected to increase over the next 15 years to exceed 35tcf (see Table 5-3). At the moment there are competing reserves and investment possibilities in the Gulf of Mexico, Western Canada, and along the East Coast. New technology and increased mapping have led to further discoveries in these areas and should result in the exploitation of reserves that were previously too expensive to develop. Nevertheless, most of our informants in the gas industry believed the long-term outlook for the natural gas industry is such that northern gas development will proceed (see Exhibit 5-1).

SOUTHERN RESERVES

The rash of exploration activity that has led to the discovery of natural gas reserves along the Mackenzie Valley and in the Beaufort Sea are in areas beyond the current pipeline grid. The best case scenario suggests these remote resources could be delivered to markets by 2008; however, it is not unrealistic to envision a start-up date closer to 2010 (assuming a pipeline up the valley is actually built). In the meantime, the natural gas industry in the NWT will not stand still. At present, natural gas production is ongoing in the Ft Liard region from where fuel can be shipped out using extensions to the existing pipeline grid in Alberta and BC. In 2001, this area produced 46.9bcf of natural gas. Initial estimates of reserves in the Ft Liard region both proven and projected

Exhibit 5-1

North American Natural Gas Outlook

Natural gas prices have been moving up in the last few months as colder weather and a rebounding U.S. economy put pressure on prices. This represents a turning point for natural gas markets, which had experienced continuous price declines over the last year. However, price pressures are expected to moderate with the end of the winter season, and no substantial price build-up is expected before the end of 2002. Inventory levels in the United States and Canada are near record levels. Natural gas prices are expected to rebound next year with stronger North American industrial demand.

The North American natural gas market will continue to prosper over the next twenty years, as natural gas becomes the preferred energy source to reduce greenhouse gas emissions. According to the Energy Information Administration *2001 International Energy Outlook,* U.S. gas consumption is anticipated to grow on average by between 2.0 and 2.3 per cent per year until 2020, from 22.8 trillion cubic feet (tcf) this year to 34.7tcf by 2020 (see Table 5-3). A large proportion of the growth in U.S. gas consumption will continue to come from the electric utility industry, as most new power generation is gas fired. Domestic gas demand in Canada is also projected to rise by about 2 per cent annually due to rising industrial demand. Domestic requirements in Canada are projected to reach 3.4tcf by 2010 and 3.9tcf by 2020. Natural gas trade between Canada and the United States will continue to expand, with Canadian gas playing an important role in satisfying U.S. demand. According to the *Oil and Gas Journal,* natural gas supply in Canada remains plentiful, with proven reserves totalling 64tcf at the beginning of 2000 and 603tcf of assessed additional reserves. Natural gas production was 6.4tcf in 2000 and is expected to reach 11.6tcf by 2020.

Over the last couple of years, the Canadian and U.S. gas markets have evolved into a more integrated North American market. Natural gas prices in western Canada are now more closely related to those south of the border. Over the long term, the AECO spot price is projected to rise by a compound annual rate of 2.9 per cent between 2006 and 2010 and by 2.3 per cent over the 2011–2020 period. The AECO spot price is projected to reach U.S. $3.465 per million British thermal units (mmbtu) in 2010 and U.S. $4.362mmbtu by 2020.

Source: Conference Board of Canada

amount to 4tcf,[81] which does not include potential new discoveries in the Cameron Hills region.

At the time this report was being written, Paramount Resources had just completed a pipeline connecting natural gas reserves 15 km across the BC/NWT border with the Maxhamish Gas Plant in BC. Previous to this, Westcoast Energy constructed a short pipeline from Fort Nelson into the area. These extensions have been made feasible because the Alberta and BC pipelines have been, themselves creeping northward over the past few years, making further northern extensions economically feasible. It is this type of development that The Conference Board of Canada foresees over the next decade, regardless of any development along the Mackenzie Valley. Paramount Resources is now looking at further exploration in the Cameron Hills region, and are expected to conduct more seismic operations next winter (2002/2003), after spending $15 million over the last winter.[82] To ensure this development continues, it will be important that the regulatory and political systems operate in such a way that ensures

[81] "*A Comparison of Natural Gas Pipeline Options for the North*", Leonard Coad et al., The Canadian Energy Research Institute, Calgary, October 2000.

[82] "*Oil and Gas Update*" Volume 1, Issue 5, Government of the Northwest Territories, March 2002.

local concerns are met, but at the same time does not deter development to the point it disappears. The GNWT has worked to establish local hiring requirements with industry participants, but most importantly, have backed up these requirements with training programs for the local labour force. These efforts include funding safety and rig training, as well as assistance for business development.[83]

NORTHERN RESERVES

The development of northern reserves represents an economic boom that will equal, if not exceed, the discovery of diamonds within the Territory. However, this development of gas fields in the Mackenzie Delta and Beaufort Sea is far from a sure thing. The reason: in the North Slope of Alaska, near Prudhoe Bay are natural gas reserves that dwarf those of the NWT. This complicates the investment strategy. The existence of this natural gas gives rise to American interests who would like to see a pipeline built through Alaska alongside the Alaskan Highway on its way to Alberta and the North American grid. Such a route would bypass the NWT completely. The current demand for natural gas is such that if this pipeline were built, the enormity of reserves it would tap into would mean North America would not need the Mackenzie Delta/Beaufort Sea gas for quite some time.

Indeed, there is a lot at stake with the possible development of the natural gas reserves in the northern reaches of continental North America. If the NWT's northern reserves are tapped and a pipeline is constructed up the Mackenzie Valley, the impact on the NWT and Canadian economies would be enormous: 52,000 jobs (person years), $667 million in income taxes and $3.6 billion to overall GDP, even before and gas is produced.[84] These benefits would be felt right across the country, from steel producers in Ontario to specialised labour from BC and Alberta. For instance, of the estimated $2.1 billion impact on GDP for the construction phase of the pipeline, $607 million would remain in NWT, while $561 million would go to Ontario, $408 million to BC, and $254 million to Alberta (see Table 5-3).

Table 5-3

Mackenzie Pipeline Impacts on Canada

(construction and field development—millions and person years)

Region	GDP	Employment
Canada	$3,566	52,170
NWT and Nunavut	$1,280	13,440
Yukon	$8	160
British Columbia	$494	7,580
Alberta	$446	7,520
Ontario	$893	15,430
Quebec	$316	5,870
Rest of Canada	$130	2,170

Source: Canadian Energy Research Institute

These estimates of the scale of the economic impacts of the pipeline and gas development are only one of a range of estimates produced and do not take into

[83] Ibid.

[84] Mackenzie Valley Stand Alone Pipeline option as reported be the Canadian Energy Research Institute in "*A Comparison of Natural Gas Pipeline Options for the North*".

account the impact of gas production and transportation once construction work is complete. For example, a report recently completed for RWED[85] estimates that pipeline construction and field development could contribute as much as $5.4 billion to Canada's GDP and generate over 76 thousand person-years of employment. The report goes on to estimate (on the basis of a US$3 gas price) that gas production and transportation would generate a further $34.8 billion in GDP and 60 thousand person-years of employment over 25 years. These figures translate into annual average GDP impacts of nearly $0.8 billion during the seven-year construction phase and $1.4 billion once gas begins to flow down the pipeline. It is important to note that NWT residents will enjoy only a relatively small proportion of these total benefits. After the construction phase direct employment in running the fields and pipeline in the NWT will be relatively small (the report assumes that only about 250 people will be required to operate and maintain the fields and pipeline in the Territory). Most of the GDP generated will be in extraction and transportation, and although this GDP will be recorded as having been generated in the NWT the benefits are likely, for the most part, to go to companies headquartered outside the Territory. This also means that governments in other parts of Canada will be the ones to benefit from the taxation revenues derived from this revenue stream.

The range of economic impacts estimated in the various reports reflects differences in the numerous assumptions that need to be taken with respect to production costs, labour requirements and the like. The validity of the assessments of the overall scale of impacts should become clearer once the producers themselves release their own analysis. These producers have reported that they will spend $250 million on a feasibility study that would confirm the accuracy of CERI's and all other research estimates.

The magnitude and distribution of the economic impact of gas development in the North will also depend on the size of gas reserves in the region and the route that will be chosen along which to build the pipeline that will deliver the gas to southern markets. The two major deposits could amount to as much as 220 trillion cubic feet. In the Mackenzie Delta and Beaufort Sea reserve estimates run as high as 65tcf—15tcf of which are proven. While in the area surrounding Prudhoe Bay estimates range from 100 to 160tcf, of which 30tcf are proven.[86] Because of the enormity of the pipeline construction and the investment dollars it will bring, there is a great deal of interest from all sides in having it built through their own backyard. What's more is it is not obvious which route stands the best chance of being developed after weighing all economic, environmental and political factors of each option.

---

[85] "*An Evaluation of the Economic Impacts Associated with the Mackenzie Valley Gas Pipeline and Mackenzie Delta Gas Development*", prepared by Wright Mansell Research Ltd., May 2002.

[86] Reserve estimates provided by Enbridge Incorporated and the Government of the Northwest Territories publication *Oil and Gas in the NWT, 2001*. Estimates vary and in the case of Alaska, include reserves in the Alaskan Wildlife National Reserve, an area which the American senate has recently voted against further exploration and development.

Initially, there were as many as five options put forward as possible transportation routes.

1) Mackenzie Valley Stand Alone;
2) Onshore (Over-the-Top) Alaska North Slope plus Mackenzie Valley;
3) Offshore (Beaufort Sea) Alaska North Slope plus Mackenzie Valley;
4) Alaska Natural Gas Transmission System (ANGTS) (Alaska Highway Route);
5) ANGTS plus a Dempster Lateral.

For all intents and purposes, the possible route choices have been narrowed to two - the ANGTS (4) sometimes referred to as the "southern" route and the Mackenzie Valley (northern) route (1 or 3) (see Exhibit 5-2). (The latter would benefit greatly from Alaska's North Slope gas that would travel along the floor of the Beaufort Sea, but it is important to note that the Stand Alone route is economically viable).

This report is not intended to add to the already long list of analytical studies comparing the economic feasibility of the pipeline options.[87] It will, however, lay out the general differences in order to understand better the question of where to build the pipeline.

- The pure economics of pipeline construction are simple — the shorter the pipeline, the more profitable the natural gas development. Shorter pipelines mean lower (fixed) construction costs (less steel and fewer workers) and lower toll fees (variable costs). Such a model would suggest that delivery of Alaskan and NWT gas to southern markets is best accomplished with a pipeline through the Beaufort Sea and up the Mackenzie Valley since it is almost 500 miles (30 per cent) shorter.
- Because of the sheer length of either route, industry officials told the Conference Board that there is only enough steel in North America to build one route. Therefore, the idea of building both simultaneously is not an option. If the ANGTS is built first, the Mackenzie Valley Route will have to wait at least until the end of the construction phase before beginning construction, and at that point, it could take years before demand increased sufficiently to warrant development of a second pipeline.
- The Mackenzie Valley route provides greater access to gas deposits since it allows for the development of the Mackenzie Delta and Alaskan reserves.
- The technical and environmental aspects of both routes provide equal challenges. The ANGTS would travel over 5 mountain ranges and numerous northern rivers, and by virtue of it being a longer line will have a somewhat larger footprint.[88] At the same time, the Mackenzie Valley route requires the pipeline to travel along the floor of the Beaufort Sea. There are examples in Finland and Russia where Arctic Ocean pipelines have been laid successfully, but it does represent a technical and environmental challenge. Both routes will require that the line be buried in full and partial permafrost.

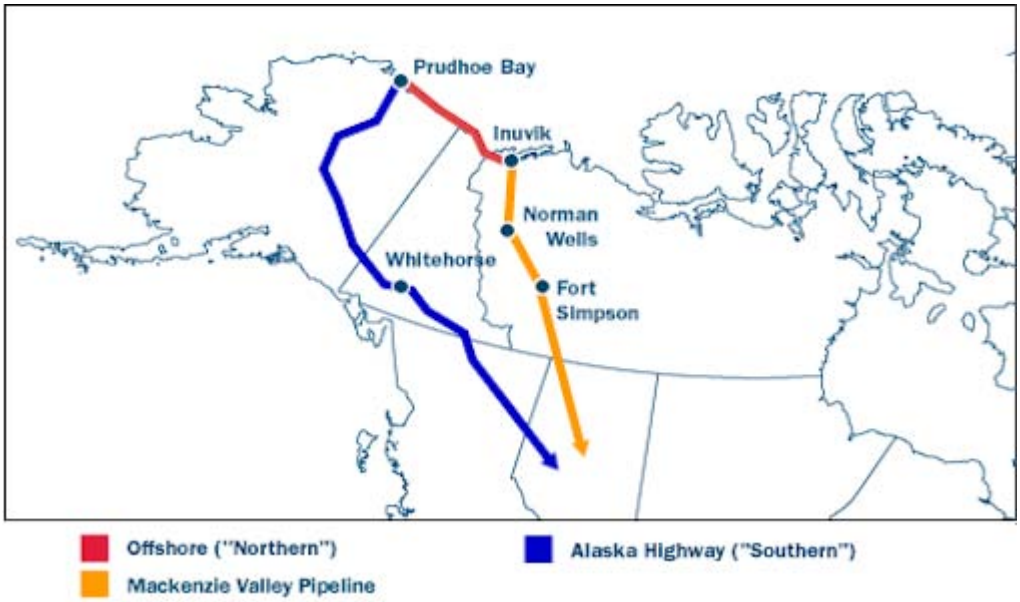
---

[87] There are numerous reports produced by all interested parties on the costs and benefits of the alternate pipeline routes. This report has incorporated the report released by the Canadian Energy Research Institute.

[88] Enbridge Incorporated, presentation given by Patrick Daniel at the Van Horne Institute's Distinguished Speakers Series, May 2001.

Exhibit 5-2

Feasible Pipeline Routes



Source: Enbridge Incorporated

- Aboriginal support for the Mackenzie Valley route is somewhat friendlier than the ANGTS. In the NWT, all but one Aboriginal group have settled land claims[89], and have formed an alliance with the potential producers of the Mackenzie Delta gas. The ANGTS route would encounter four unsettled land claim areas.
- The ANGTS has the advantage of having already established the required permits and right-of-way for the pipeline construction, though they may require some updating. These permits were established when the exploitation of Alaskan gas was last considered over twenty years ago. Their existence, when combined with a relatively streamlined approval process in Alaska, would shorten the time frame needed to complete the regulatory requirements. However, the added complexity of dealing with two countries rather than one may, in the end, level out this regulatory advantage.
- As it stands, a consortium of oil companies (Imperial Oil, Conoco, Shell Oil and Exxon Mobil Corp.), known as the Mackenzie Valley Producers Group (MVPG), have already started work on the regulatory applications needed to develop the natural gas fields and build the multibillion-dollar pipeline. It is estimated that this process could take four years and $250 million before the partners decide whether the venture is viable.[90]

[89] The Deh Cho, as mentioned earlier in the report, have not settled their Land Claim but have, for the most part, indicated that they are willing to work with the pipeline producers to find a solution that does not require a finalised Land Claims Agreement. This is discussed in more depth later in this chapter.

[90] Quote from Imperial Oil

- In terms of immediate economic benefits to society, the ANGTS is considerably better since the pipeline is longer, requires more steel and labour and therefore more investment. As well, the overall transportation tolls would be higher.
- Finally, there is perhaps greater political will for the ANGTS. Support has been buoyed by the US Senate who recently passed a bill—if it becomes a law—that would guarantee a floor price for natural gas carried by the ANGTS.[91] It should be noted that a decision such as this would be perceived as direct government interference in the industry and would likely go before the World Trade Organisation for a resolution. Because one route favours NWT and the other the Yukon, Canada's federal government has been much quieter about route preferences.

All in all, while it would seem the Mackenzie Valley route is clearly favourable in economic terms, there are numerous non-economic factors at play making speculation over which route will actually go ahead risky.

The Conference Board of Canada sees some benefit for the NWT in the current uncertainty. It has meant issues such as land claims, environmental regulations and political responsibilities are being addressed now rather than later. The Northwest Territories must become a more desirable or friendlier place to do business. Also, because there are competing interests for the pipeline in Alaska and the Yukon, demands from all interested groups must be moderated by the fact that excessive greed could ruin the opportunity for themselves and everyone else. And finally, the uncertainty signifies the importance of planning for a future that may not contain a pipeline mega-project.

Legacy of Pipeline Development

The apparent goal of the NWT actively pursuing the advancement of Aboriginal land claims, improving the efficiency and effectiveness of regulatory processes, and establishing clear roles and responsibilities for each level of government is to ensure that if a pipeline is to be built, the most favourable route will be up the Mackenzie Valley. However, the true legacy of these improvements will be an improved Territory to live and work.

Easing the regulatory processes and identifying the responsibilities of the various government bodies in the NWT would alleviate much frustration that was voiced to the Conference Board during interview sessions. While most business people would encourage fewer regulations, their focus was directed more toward building a more efficient system that allows business and regulators to work together. This does not imply loosening regulations and business requirements that are important to the people of the NWT, but it does imply a need for greater union between the different camps.

The threat of an ANGTS pipeline is forcing the Mackenzie Valley pipeline supporters to come together. The MVAPC is an example of this co-operation. The group signed a memorandum of understanding (MOU) in October 2001 with the MVPG giving northern

---

[91] "*Yukon, NWT at odds over pipeline route*", Globe and Mail, Canadian Press, May 6, 2001. The report indicates that the bill grants a tax credit for all gas shipped through the pipeline that sells at a price lower than US$3.25 per thousand cubic feet.

Aboriginal people an opportunity to become one-third owners of the pipeline. It also set out terms for building and operating the pipeline.

An additional goal of the MVAPC is to provide northern communities with up front support in preparation for the possible economic boom. People need to be trained and educated, many need basic literacy and numeracy skills and all need to understand the pressure and strain the development may have on their families. Communities need to develop strong leaders who can help others come to terms with changing lifestyles. The MVAPC would like to use future revenues from the pipeline to fund this investment, but of course, the pipeline not a sure thing at the moment. Without the investment the positive economic impact of the pipeline construction will be greatly reduced. This suggests the combined efforts of the GNWT and the MVAPC to ready Aboriginal communities for the pipeline-related opportunities is required. Not only will this investment leave Aboriginal communities better prepared to participate in the economic activities, but it will also lead to more productive, healthier communities, which has long term positive repercussions.

It is this long-term investment in the human capital of the Territory that can impact society for generations. Furthermore, it will be important for the Territory to manage the enormous one-time influx of money. Many Canadian provinces as well as foreign countries have established diversification funds built up through natural resource money. A lack of planning could result in misuse of the money, and leave the Territory only marginally better off than it was prior to the project. It is vital that in preparations for the arrival of the multi-billion dollar pipeline project, all three government bodies (federal/territorial/aboriginal) include in their plans prudent investment strategies for the coming revenues. These plans should focus on the long-term requirements of the region and its people.

5.1.4.2 Oil Industry

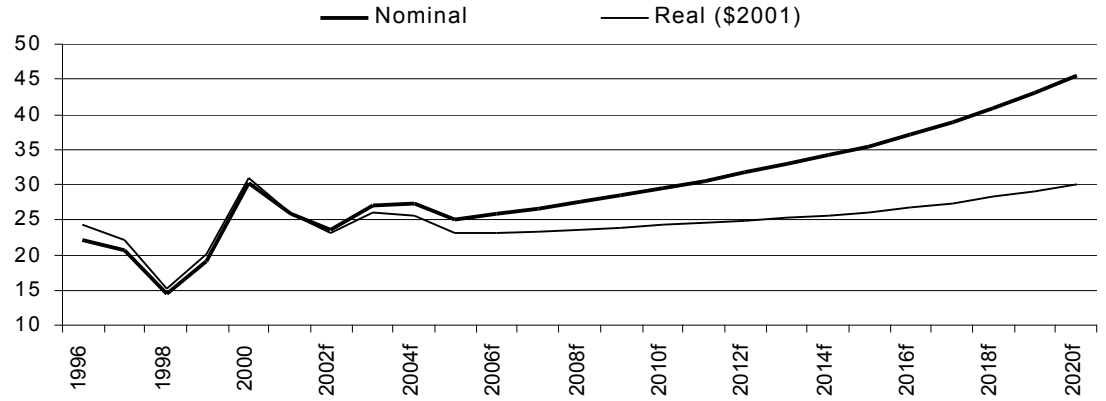
With all the excitement over possible natural gas development in the NWT, it is often forgotten that the Territory has been involved in the energy sector for almost twenty years, through the extraction of oil reserves in Norman Wells. As discussed in Chapter 4, these reserves are now running low, and will likely be exhausted by 2020 at the latest. Furthermore, Imperial Oil has not set aside a lot of money for further exploration of the area. This leaves the future for oil production in the Territory in some doubt.

At the moment, production around Norman Wells amounts to 50 million cubic feet of oil annually (2001 figure). Table 4-1 shows that considerable reserves remain throughout the Territory. However, given current price of US$27 per barrel,[92] the extraction and transportation does not warrant the considerable investment needed to deliver these reserves to market. Nevertheless, the eventual depletion of reserves at Norman Wells will create excess capacity within the only existing pipeline that may offer an inexpensive transportation option; i.e., constructing tie-ins from the proven reserves to the existing infrastructure. The timing of this capacity issue coincides with the projected

[92] This price is based on the West Texas Intermediate oil price. And as shown in Exhibit 5-3, the short-term price forecast indicates the price will decline to US$23 per barrel, prior to any further expansion.

Chart 5-3

West Texas Intermediate Oil Price
(US dollars per barrel)



Source: Conference Board of Canada

rise in the world oil price that is expected to exceed $45 per barrel by 2020, which is over $30 per barrel in real terms (see Chart 5-3).

Production of remaining oil reserves at Norman Wells will add a further $800 million to government coffers through resource royalties. The federal government receives a 5 per cent gross royalty from two-thirds of the field production and has a one-third interest in the net profits.[93] If the known reserves in the Mackenzie Delta and other locations throughout the Territory were exploited—under the current royalty regime—a further $9.5 billion in resource royalties could be realised.[94] These reserves are at least one, if not two decades away from being considered.

[93] Resources, Wildlife and Economic Development, Government of the Northwest Territories.

[94] "*Towards a Better Tomorrow: A Non-Renewable Resource Strategy for the Northwest Territories*", GNWT Financial Management Board Secretariat, Appendix B.

Exhibit 5-3

World Oil Outlook

Successful output cuts by various producers, signs of economic recovery, political uncertainty and fears of supply disruptions have been fuelling oil markets since the start of 2002, and crude oil prices have risen steadily to near US$27/barrel. However, the West Texas Intermediate (WTI) crude oil price is expected to drift back to around US$23/barrel in the next few months as political tensions dissipate. On average, the WTI price is projected to drop by 9.4 per cent in 2002, to US$23.50/barrel, before bouncing back by 15 per cent in 2003. Crude oil prices are expected to remain around US$27/barrel in 2004 and then to decline to near US$25/barrel in 2005 as supply imbalances persist. Afterward, prices are expected to gradually move up, reaching US$45.52/barrel by 2020 (see Chart 5-3).

Although oil prices have been quite volatile, dropping in the last quarter of 2001 and moving up sharply in the early part of 2002, this instability in not an indication of the long-term trend. Turbulence in oil markets is likely to settle down when global demand regains its footing through 2003 and when the political pressures subside. Recent technological developments in exploration and production have increased recoverable reserves and prolonged the life of existing fields. These will enable production from sources outside the Organisation of Petroleum Exporting Countries (OPEC) to remain strong until 2005. However, around 2005, non-OPEC supply will not rise fast enough to meet demand pressures and members of OPEC will be able to increase their market share. The capital needed to develop the vast resources of OPEC members will not become available at the rate required to meet demand increases, and the real price of oil will rise, particularly over the 2015-2020 period.

World oil demand is projected to rise from 76.3 million barrels per day (mmbd) in 2002 to 117.4 mmbd by 2020 due to strong requirements from the United States and developing countries, including the Pacific Rim, Central and South America. This demand forecast assumes that recent industry trends, including the introduction and use of energy-efficient methods, will continue at the same pace as in recent years.

However, the international environmental agreement reached in Kyoto poses a downside risk to the projected oil demand increase in the industrialised countries over the next decade. Under the Kyoto Climate Change Protocol, a large number of industrialised countries agreed to cut greenhouse gas emissions by 4 per cent from 1990 levels by 2008–12. Even though several countries have signed the protocol, this long-term forecast has not been adjusted to account for the potential impact of the protocol as a very large proportion of the industrialised countries has not yet ratified the agreement.

Although demand is set to grow over the next two decades, the US Geological Survey contends that global oil reserves are not running dry and should be sufficient to satisfy expected requirements.

Increases in productivity and improvements in market conditions should bolster production from several countries outside OPEC. Persian Gulf resources can also be developed at relatively low cost and are going to play an incremental role in satisfying demand. World oil production is expected to increase from 76 mmbd in 2002 to 94.8 mmbd by 2010 and 116.8 mmbd by 2020. Oil production in Canada is not expected to grow in the 2010-2020 period with the depletion of conventional oil reserves in the Prairies and Norman Wells. Some oil production from the Mackenzie Delta/Beaufort Sea region could possibly come into play between 2010 and 2015, if oil prices continue to rise and if a delivery infrastructure is put in place.

New investment will be needed in OPEC countries as the world turns to them to satisfy crude oil demand. While it is assumed that investment will be forthcoming, it will lag demand, keeping production from satisfying demand fast enough and resulting in real price pressures. Raising the capital investment needed to develop OPEC's resources may be difficult, given intense global competition for private foreign capital. In the long term, the real price of oil is projected to rise by an average annual rate of 1.3 per cent over 2006-15. This rate is set to increase to an average of 2.9 per cent between 2015 and 2020. The WTI crude oil price is expected to reach US$30.02/barrel in constant 2001 dollars, or the equivalent of US$45.52/barrel in current dollars, by 2020.

5.2 Renewable Resources

5.2.1 HYDROELECTRIC POWER

A quick glance at a map is enough to suggest there is an abundance of opportunities in the NWT for hydroelectric power generation. However, there is some uncertainty in its future, in part due to the willingness of the people and in part due to the high cost of development. As mentioned in Chapter 4, a recent strategy to introduce "run-of-the-river" technology on the Great Bear, Mackenzie and other rivers to capture their power (in part for the export market) is being discussed with the many affected and interested parties. As a result, development of the 11,500 mega-watts of power that would have been generated is now uncertain—at least over the next ten years. Furthermore, if the natural gas reserves in the northern Arctic are developed, there will be a push to convert communities with access to natural gas, lowering the demand for heating oil. This may also work to reduce the benefits of new hydroelectricity development. Some opportunities may exist to develop local hydro resources for communities or specific resource developments. These will have to be assessed on their individual merits.

Hydroelectric power is currently supplied by the NWT Power Corporation,[95] which runs two hydro-powered generating systems. The first is on the Snare River, north of Yellowknife, which supplies Rae-Edzo, Dettah and Yellowknife with up to 31 megawatts of power. In 1996 the Dogrib First Nation became involved in the power industry, building a facility 2km downstream from the government's power station. The second is on the Talston River near Fort Smith, which supplies Fort Smith, Fort Resolution, Hay River and Enterprise with up to 21 megawatts.[96] As much as half of the power available for the Talston plant has gone unused since the closure of the Pine Point Mine. Furthermore, this river has the potential to generate 200 megawatts of power. To access this resource would require significant public investment and expansion into the export market.

With expansion still in the discussion phase, the industry's focus seems to be directed toward the government's role in the industry. As seen in Exhibit 4-4, there is an immediate need to reform the energy and utility subsidy programs run by the GNWT in order to make the current system fairer by providing lower cost energy to only those residents and businesses that require it. The public utility, as it is structured, is also unable to raise the capital needed to venture into the export market as discussed above.[97] This limits the NWT Power Corporation's ability to lower its price for local hydroelectric power users since these low costs can only come through the increased sales that are available south of the border.

North America's demand for clean energy may be the ultimate driver behind any expansion of the NWT's power generation. The Kyoto Accord could provide favourable

---

[95] The Dogrib Power Corporation owns one of the four power generating facilities on the Snare River. The "run of river" plant depends turns a Kaplan turbine generating 4.3 megawatts of power. The Dogrib Power Corporation sells this power to the NWT Power Corporation.

[96] NWT Power Corporation, http://www.ntpc.com/grey/supply/hydro.htm

[97] *A Review of Electrical Generation Transmission and Distribution in the Northwest Territories*, Government of the Northwest Territories, December 6, 2000

incentives for clean energy usage. Ratification of this Accord may also have an influence of local attitudes toward investments in hydroelectric stations. Improvements in transmission or construction technology could also hasten investment plans.

5.2.2 FORESTRY

The NWT's forestry sector is a small component of the Territory's overall economic outlook. In 2000, harvested timber exports were valued at $4.4 million, with approximately 22,000 cubic meters, or 547 hectares being cut. In good years, these figures have climbed to over $11 million and 75,000 cubic meters, respectively.[98] Almost all of the exported timber is softwood, and travels to the US for value-added processing. The market is dictated by changes in North American demand and prices, which have been slumping in recent years. And like most industrial activity in the North, costs associated with NWT's logging industry are greater than in other jurisdictions and therefore require higher prices to ensure profitability. Lately, as economic activity throughout the Territory has intensified, additional costs have had to be endured, such as increased labour shortages and higher wages.

Logging and the manufacture of timber-based products have, though, been highlighted as one area where the NWT could improve on its current performance. The federal government owns the NWT's forests, although management responsibility was devolved to GNWT in 1986. Problems concerning land access and harvesting rights arising from unsettled land claims appear to be blocking development in this area. For operations that often consist of one or two people with a portable sawmill and small-scale cutting tools, the extent of red tape is often enough to discourage any activity. In essence, it would not seem the Territory's regulatory environment in the logging industry is well suited to small operators, which is a problem since most operators in the Territory are in fact small. The relatively small area of woodland that can be developed economically also restricts the potential development of the sector. Although just over half the NWT is covered by forest,[99] environmental conditions mean that the proportion of these forests that can be harvested in a sustainable manner is very small.

The future for the industry will lie in the hands of the market to the south and the willingness of NWT citizens to have logging as a legitimate industry in their Territory. The market has been down lately, with US housing starts dropping over the past two years. Current forecasts suggest this will see a turnaround in 2002, and by 2003 the number of starts should be up and the prices for lumber should follow suit. In Canada, while a small player in the lumber market, housing starts should continue to flourish in the face of rising resale prices and tight rental markets, despite expectations of rising interest rates in the latter half of this year. On the regulatory side, clear guidelines are needed for both sides, and the paper work must be reduced. Environmental requirements must be established and implemented for operators to understand and work with, while the land owners and regulators, for their part, must agree to one set of rules that are easy to understand and implement.

---

[98] "*Wildlife and Fisheries 2001/2002, Renewable Resource Values*", Resources, Wildlife and Economic Development, GNWT, 2002.

[99] See the Canadian Forest Service's 1991 inventory (revised in 1994) of Canada's forests.

5.2.3 HUNTING, FISHING AND TRAPPING

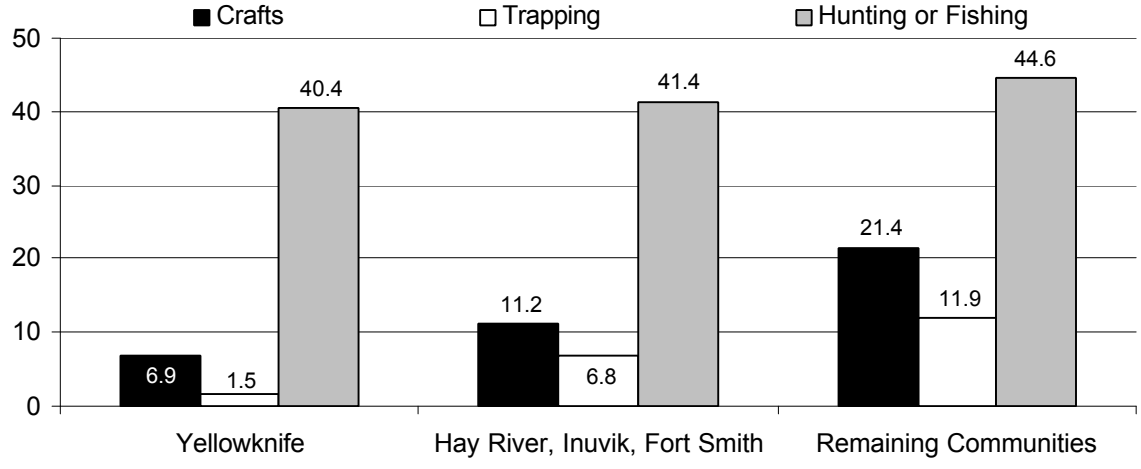
OVERVIEW

The Northwest Territories' terrestrial and marine wildlife is diverse and creates a valuable renewable resource. Determining the economic potential for animal products (e.g., food, processed food, fur, hide) is difficult because of the variable quantity and quality of the resource base, unproven or unstable markets and high processing costs. Factors such as climate change, pollution, population and environmental pressures increase the concern for wildlife resources and habitats and may in some cases result in decisions for protective measures rather than industrial development. Through the land claim agreements, Aboriginal groups have been given some of these management roles and guaranteed exclusive or priority use of the harvest of fish and wildlife. Renewable resources boards have been created under land claims agreements to regulate harvest limits, commercial guiding, fishing and hunting activities on Aboriginal lands and to collaborate with government departments and agencies in research and harvesting studies.

The GNWT recommended in *Common Ground* that in order to manage development better it is necessary to improve the baseline data on ecosystems, wildlife and sustainable harvest levels and traditional knowledge.[100] The Northwest Territories already commenced monitoring the general status of wild species and a first report was

Chart 5-4

Involvement in Making Crafts, Trapping, Hunting or Fishing
(per cent of population in community 15 years of age or older)



Source: 1999 Labour Force Survey, Northwest Territories Bureau of Statistics

[100] "*Common Ground*", Economic Strategy Panel Final Report, GNWT, June 2000, p.86.

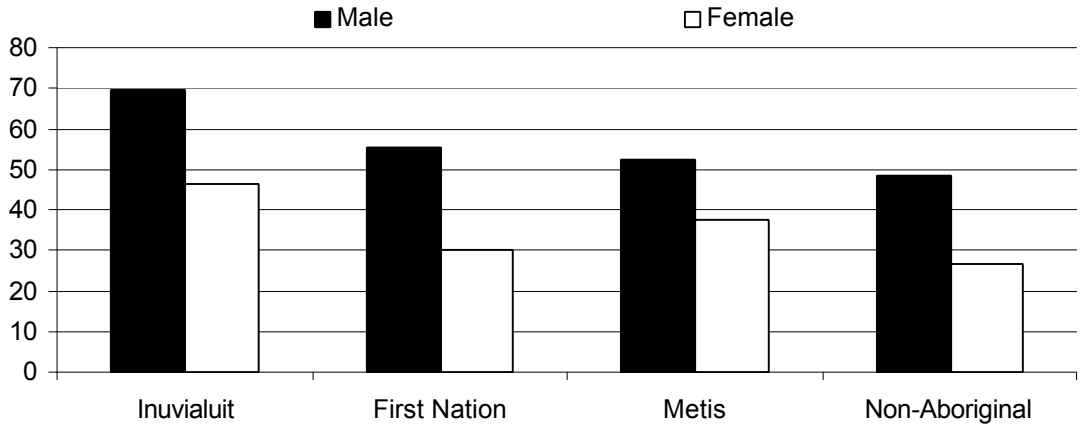
published in 2000.[101] The Department of Resources, Wildlife, and Economic Development is acting as lead agency in this co-operative effort to develop an information base to be used for decision making related to wildlife. In this report, about 1.4 per cent of the Territory's species are ranked according to their well being into nine categories ranging from 'secure' to 'at risk'. Results from wildlife research and traditional ecological knowledge provide the base for species as well as habitat data.

Hunting and fishing activities are important to all residents of the Northwest Territories as high participation rates reveal. During 1998, 42 per cent of the Territory's population fifteen years of age or older participated in hunting or fishing activities, including high involvement rates in both urban and rural areas, ranging regionally between 40 and 45 per cent (see Chart 5-4). Participation of women within Aboriginal as well as non-Aboriginal populations is also relatively high with participation rates ranging between 27 percent and 47 percent (see Chart 5-5).

Economic prospects for the hunting and fishing industry and commercial development of its products seem limited. While it remains an important element of the cultural life of Aboriginal communities it is becoming more of a lifestyle choice than an occupation. Mixed attitudes to development, high infrastructure costs and the lack of a solid supply base for establishing a reliable export industry tend to work against development.

Chart 5-5

Involvement in hunting/fishing in the NWT: by Ethnic Group, 2000
(per cent of community)



Source: NWT Bureau of Statistics

[101] "*General Status Ranks of Wild Species in the Northwest Territories*", Department of Resources, Wildlife and Economic Development, GNWT, 2000.

FISHING

In the NWT, 48 primarily freshwater fish species inhabit rivers, lakes and coastal areas and an estimated 55 marine fish species are found in the Beaufort Sea. Many species are harvested for subsistence, commercial and sport purposes. Commercial fishing in the Northwest Territories is relatively small scale. The largest fisheries are the commercial fisheries on Great Slave Lake with an annual catch of about 1.5 million tonnes for whitefish, lake trout, northern pike, burbot (loche), inconnu and walleye (pickerel). Most fish is sold unprocessed, although some is processed as smoked, dried or packaged fish and as jerky. Whitefish is by far the most important freshwater species in Great Slave Lake and accounts for 56 per cent of all sales. The NWT contributes less than three per cent to the national freshwater fish production, however, has maintained a 12 per cent share of the Freshwater Fish Marketing Corporation's whitefish production. Commercial Fishery Assistance is available for commercial fishing where resources are ample, and depending on the season (winter and summer rates).

Prospects for commercial fishing seem limited. The abundance and growth rate of fish do not seem to allow for intensive commercial fishing and previous efforts at commercial fishing have in many cases been terminated or changed into domestic fisheries.[102] Lake whitefish is considered to be more responsive to fishing pressures and would therefore be able to support a more intensive fishery than either Arctic char or lake trout. It is questionable, however, if an increased whitefish fishery would be economically viable. Competition for raw fish products is high from other whitefish and farmed fish markets and regional fish stocks may not be able to supply the high amount of harvest necessary to make export activities profitable.

Sport fishing is popular in the Territory. Opportunities for sport fishing lodges on inland lakes within the Gwich'in Settlement Area are being considered for trout and northern pike. Numerous fishing lodges exist around Great Slave Lake and Great Bear Lake. Some restrictions exist for sport fishing of Arctic grayling, lake trout, northern pike and walleye.

HUNTING

The primary motivation of hunting activities for Aboriginal people is that of subsistence rather than commercial purposes. The experience of living 'on the land' while procuring plants and animals for immediate and delayed consumption is an activity difficult to quantify. Subsistence oriented harvesting historically is a complex activity reflecting and reinforcing relationships of the harvester with other elements of the surrounding ecosystem. Apart from the necessary ecological knowledge to conduct a successful hunt, a hunter may acknowledge particular human-animal relationships by taking specific precautions in handling a procured animal. Also, the processing of the harvest and its various parts follow and reinforce social structures and, furthermore, the distribution (and consumption) of the acquired food reinforces and creates human relationships. As harvesting most often is a social endeavour, human relationships in turn play an important role in organising and conducting hunting activities. Viewing

[102] "*State of Knowledge Report: West Kitikmeot/Slave Study Area*", prepared for West Kitikmeot/Slave Study Society, April 1999, p.186.

subsistence harvesting in this context, positions the harvester within an ecosystem while at the same time being part of it consequently defining rights and obligations in a network of relationships. The goal of subsistence harvesting is not capital accumulation but a continuous flow of goods and services.

Recognising the conceptual framework underlying Aboriginal harvesting practice elucidates in part values and social dimension of the activity. These aspects have been brought forward repeatedly by Aboriginal representatives expressing the need for continuation of these practices. While the absolute necessity of hunting has vanished as the only means to survival, hunting (and trapping) continues with a shift from subsistence hunting to settlement-based hunting. Appreciation of taste and nutritional value of country food alone do not explain the persistence of hunting. Harvesting activities are deeply imbedded in the social fabric of communities and express and create value beyond securing food supply. Existing values are reinforced through practices of food distribution within the community and celebration of a successful hunt. Harvesting activities also provide excellent opportunities for teaching-learning relationships and the intergenerational transmission of knowledge.

The economic importance of subsistence hunting is countered by the high costs involved. Subsistence harvesting does not produce cash income but cash is needed to equip a harvesting trip with means for transportation (gas for the skidoo or boat), provisions, tools and ammunition, etc. Income from other labour related areas tend to work in favour of harvesting activities by providing the cash needed to permit more and longer hunting trips which in turn means more production of country food. An increase in country food availability may result in decreased imported foods. In recognition of the situation, the Territories in conjunction with the Inuvialuit Regional Cooperation (IRC) created a trust fund in 1998 providing for a harvester assistance program to support capital items required for harvesting (Inuvialuit Harvesters Assistance Program).

Products of harvest activities contribute to the economy in several ways. Subsistence hunting produces food and raw materials for clothing, craft and hides. Meat replacement values are established, calculated on the basis of prices for beef, for several harvested games to attribute an estimated dollar value to the food acquired by subsistence hunting activities. The annual replacement value for all caribou harvested amounted to $23.7 million and for moose roughly $900,000 in 1998 (see Chart 5-6). The annual replacement value may change significantly each year, depending on the number of animals harvested and established harvest limits. For example, in 1994 only 222 muskox were harvested at meat replacement value of $279,000, but by 1997 the value increased to $1,638,000 because of an increased harvest.

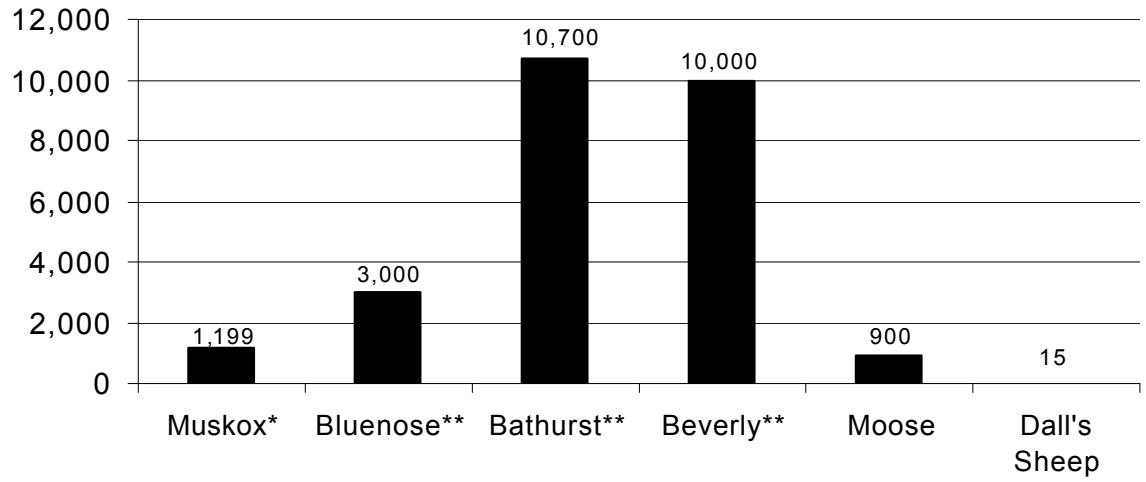
Sport hunting contributed about $8.9 million to the Territory's economy during the 1998/99 fiscal year. Sports hunting can bring relatively high amounts of money in a short time into a community and may provide employment and service opportunities. For instance, the average cost for a Barren-Ground caribou hunt is $5,900[103]. A small but growing non-resident hunt of the Bathurst caribou herd provides approximately $3

[103] This figure includes spending in the NWT on items not included in the hunt package.

Chart 5-6

Estimated Meat Replacement Values of Selected Species[1]

(dollars)



[1] Does not include value of non-meat component of animal;
* Average value of harvest from 1990 to 1997;
**Caribou herds

Source: Northwest Territories Bureau of Statistics

million per year to the territorial economy.[104] An increasing muskox population on Banks Island may permit an increase in the commercial harvest there. This could have a significant impact on the community of Sachs Harbour, since it is estimated that each muskox hunt brings approximately $3,000 to the town.

In many Aboriginal communities, commercialisation of harvest activities is considered inappropriate. Conduct of sport hunting may be tolerated if the hunted species is not a main food provider as is the case for Dall's Sheep of the Mackenzie Mountains. The meat replacement value calculated for the relatively small subsistence harvest of 20 to 30 animals per year remains at a modest $12,000 to $18,000 per year. The value of the commercial hunt is much larger: in 2001, 229 Dall's sheep licences were sold, generating $3.2 million in total revenue. Communities may also decide to use a portion of their commercial tags for sport hunting. This is the case for Tuktoyaktuk, where permits are provided to sports outfitters for roughly 0.5 per cent of the annual total harvest of the Bluenose caribou herd. With 28 caribou hunted yearly, the sport hunt from this caribou herd values roughly $134,000 per year.

The development of country food production for commercial purposes faces barriers such as inconsistent supply, lack of business infrastructure and a food market with strict regulations concerning food safety. Sentiments may exist regarding the commercialisation of harvesting activities and communities may decide not to engage in

[104] NWT Barren-Ground Caribou Population Status, NWT RWED Status reports.

this activity. However, the success of commercial food businesses may depend on the products offered and communal involvement. It is important that specific products are chosen, such as muskox burgers that can be frozen and sold to hotels and other food service operators. Integration with other sectors of the tourism industry, for example, would be desirable as well.

TRAPPING

The wild fur trapping industry lies at the origins of economic activity in the NWT, and continues to fulfil an important social function in today's society. Nowadays the industry is relatively small-scale in nature, dependent on fashion trends and animal population cycles. It faces product competition from abroad and from ranch-farms and competition for labour from more remunerative forms of activity. It appears likely that the economic prospects of the industry are limited.

All communities, including Yellowknife, are involved in trapping (see Chart 5-4), with marten being the most important species harvested. Marten furs are marketed as Canadian Sable and are strong sellers in the international market. Other pelts sold on to international markets include lynx, wolf, wolverine, bear, fox, muskrat and seal.

During 1998, 12.6 per cent of the Territory's Aboriginal population was involved in trapping, while only 0.6 percent of the non-Aboriginal population took part in this activity. The majority of individuals who trapped during 1998 operated out of rural communities. Concern has been raised that with declining numbers of trappers, the contribution of country food production for domestic use and transmission of traditional knowledge will decrease to an extent that a loss of knowledge of trapping is considered possible.

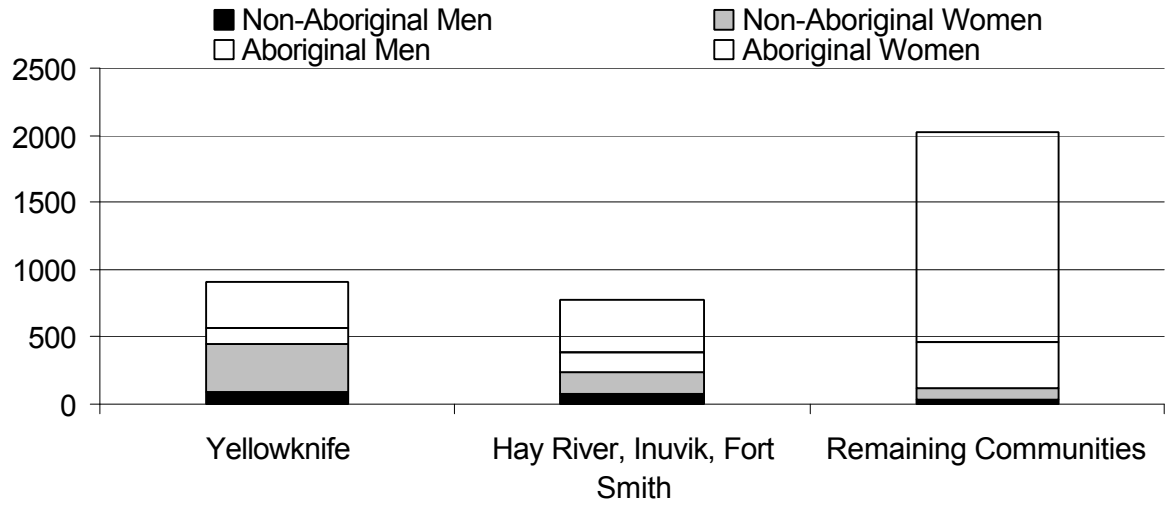
Fur harvesting has been comparatively low during the 1990s, generating on average less than $1 million in economic activity. Fluctuation in this sector can be high as shown by the particularly low contribution of $440,000 in 1999 recovering the following year to $840,000.[105] However, fur prices have recently increased and promise a moderate market for sales.

Recently, the Territory has begun to brand its regions' furs and fur products to increase the awareness and uniqueness of its products and to increase market share. Genuine Mackenzie Valley Furs is marketed through Fur Harvesters Auction Inc. Aklavik/Tuktoyaktuk Furs Ltd., in co-operation with Aurora College, has also established a Fur Diploma training program. The program stresses using the natural resources and skills of the Aboriginal people of the Mackenzie Delta region to produce limited edition fur fashion products. The Northwest Territories fur industry does not have to limit itself to a supply function but may venture into fashion design as well. D'Arcy Moses is an example of successful design production bringing recognition from the design and arts world to the Territories.

[105] "*2001 NWT Socio-Economic Scan*", NWT Bureau of Statistics.

Chart 5-7

Involvement in Making Crafts: by Gender and Ethnic Group, 1998
(persons)



Source: 1999 Labour Force Survey, Northwest Territories Bureau of Statistics

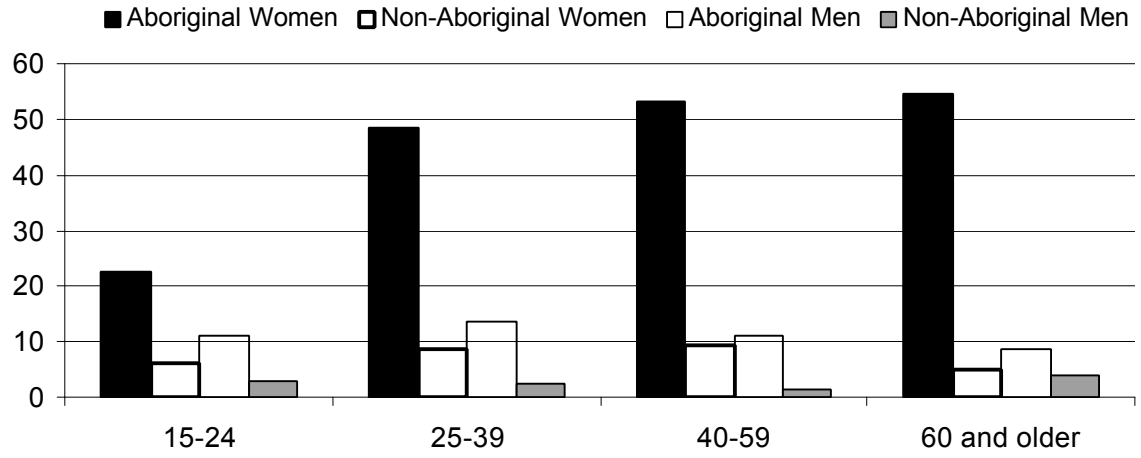
5.2.4 Arts and Crafts

Arts and crafts are not expected to play a large role in the Territory's economy, however, there has been little evaluation of previous economic development in this industry. Employment and higher incomes from other parts of the economy are considered to work in favour of local arts and crafts as well as country food production. Stakeholders from the tourism industry have mentioned that opportunities for the arts and crafts industries suffer from inconsistent supply making promotional efforts difficult. The sector is fragmented and lacks product identity. Arts and craft products vary according to region, materials and ethnic background. Producers express difficulties in accessing raw materials and product development funds while co-ordination between agencies involved in the cultural industries is said to be lacking. The arts and crafts sector contributes in excess of $10 million to the Territory's economy annually.

Aboriginal women in rural areas dominate arts and crafts production in the NWT (see Chart 5-7). This requires consideration in terms of developing funding or support mechanisms. Different programs may be established to address different needs of artisans depending on their distance to markets, their work place (business or home), and whether they are engaged full- or part-time. Age distribution also reveals a further divergence in the population involved in making crafts. According to the 1999 Labour Force Survey, 54.5 per cent of Aboriginal women producing crafts are 60 years and older (see Chart 5-8). Further analysis may reveal a relation between the producers' age group and type of craft produced and, possibly, extent and characteristics of how knowledge is transmitted.

Chart 5-8

Involvement in Making Arts and Crafts: by Age Cohort, Gender and Ethnic Group
(percentages)



Source: 1999 Labour Force Survey, Northwest Territories Bureau of Statistics

Demand for Aboriginal culture products has been established for several key European markets as well as the American and Canadian market; the interest in purchasing arts and crafts, however, is not well documented. According to market research, 'sampling local foods', 'getting to know local people' and 'seeing local crafts and handiwork' are the main cultural experiences of Aboriginal culture travellers.[106]

The arts and craft industry is linked to other sectors such as tourism and hunting or trapping. For the production of traditional clothing, for example, hides, sinew and fur are needed and it is quite common that the same person takes part in the hunting/trapping activity to procure the raw material. Knowledge of the fur or hide-providing animal, varying conditions of fur or hide according to season and suitability of different parts of hide for specific products is presupposition for sewing clothing and, therefore, encompasses knowledge areas far beyond sewing techniques. Knowledge transfer may be an issue, considering a change in lifestyle between the different age groups. The largest producers of arts and crafts are Aboriginal women 60 years and older, who most likely experienced a higher proportion of subsistence activities and gender specific economic activities than younger generations. Aboriginal cultural institutes such as the Gwich'in Social and Cultural Institute and the Dene Cultural Institute include in their mandate the documentation and promotion of traditional knowledge and cultural practices.

Opportunity exists to create a new marketing strategy for the arts and crafts industry of the Northwest Territories by taking into account identified changes in market trends and

[106]"*Demand for Aboriginal Culture Products in Key European Markets 2000*", prepared for Aboriginal Tourism Team Canada and Canadian Tourism Commission by Price Waterhouse Coopers, p.11.

classification of cultural expressions by cultural and historical institutions. These trends include:

- a tourism market desiring mainly experiences;
- an arts market integrating culturally different forms of art by redefining categories such as 'ethnic art', 'folk art' and 'crafts';
- a recognition that traditional economic activities are imbedded in a holistically arranged knowledge base; and
- a shifting approach in presentation and categorisation within cultural institutions and museums.

There seems to be a need to leave the 'arts and crafts' product category in favour of categories of experience and expression. The cultural industries of the Northwest Territories include music production and festivals, traditional dance, film and much more. Developmental activities could build on already existing traditions as well as contemporary practices, with presentations from different ecological regions. Encouragement to create heritage related centres or institutions to promote activities and learning within culture specific areas seem useful as a supportive measure for the cultural industries, not only for the aspect of production but, just as important, for opportunities of defining and expressing identities.

5.2.5 TOURISM

The tourism industry forms a relatively modest part of the NWT economy but is seen by many as one with much potential. The industry in the NWT tends to be one of niche-markets placing certain limitations on the sector's potential. The territorial tourism industry has been growing at a slow pace while facing challenges at various levels. Concerns raised in *Common Ground* included a decline of private and public investment in product development and marketing; ageing facilities; declining marketing efforts; marketing with little focus on targeting specific attractions; and a lack of territorial identity on which to build a marketing campaign.[107] Amongst the main barriers mentioned by stakeholders are a lack of funds to support tourism infrastructure, an insufficient labour force and general competition for labour. Aboriginal people expressed existing policies as a major barrier to economic participation in tourism.

Stakeholders pointed out that developing tourism activities might be considered as a supplementary component to local economic development because these activities as such will not be able to sustain people in small remote northern communities. The concern was raised that presenting economic activities related to the tourism industry as a central core to an economic strategy would create an atmosphere of false hope.

[107] "*Common Ground*", Economic Strategy Panel Final Report, GNWT, June 2000, p.63.

Table 5-4

National Parks and Park Reserves in the NWT

National Park and Park Reserve	Characteristics, Agreements	Access
Wood Buffalo, 1922	Canada's largest Park with two thirds located in Alberta	Year-round by all-weather road
Nahanni, 1976	Canadian Heritage River and UNESCO World Heritage Site	By air charter from Fort Simpson; road and canoe on expert level from Yukon territory
Ivvavik, 1984	Inuvialuit Final Agreement	By air charter from Inuvik
Aulavik, 1992	Inuvialuit Final Agreement	By air charter from Inuvik
Vuntut, 1995	Vuntut Gwich'in Final Agreement	By air charter from Inuvik; by boat from Old Crow
Tuktut Nogait, 1998	Inuvialuit Final Agreement, proposed extension into Nunavut and Sahtu settlement areas	By air charter from Inuvik or Norman Wells; by boat charter or on foot from Paulatuk

Source: Standing Senate Committee on Aboriginal Peoples

Considering recent trends in the world tourism industry,[108] and a growing recognition of the contribution of tourism to national economies, tourism in the NWT can benefit from the demands of several market segments such as eco-, adventure and cultural tourism, business travel and hunting and fishing. In turn, tourism has the potential to contribute to regional and community-based capacity building and encourage developing sustainable communities.

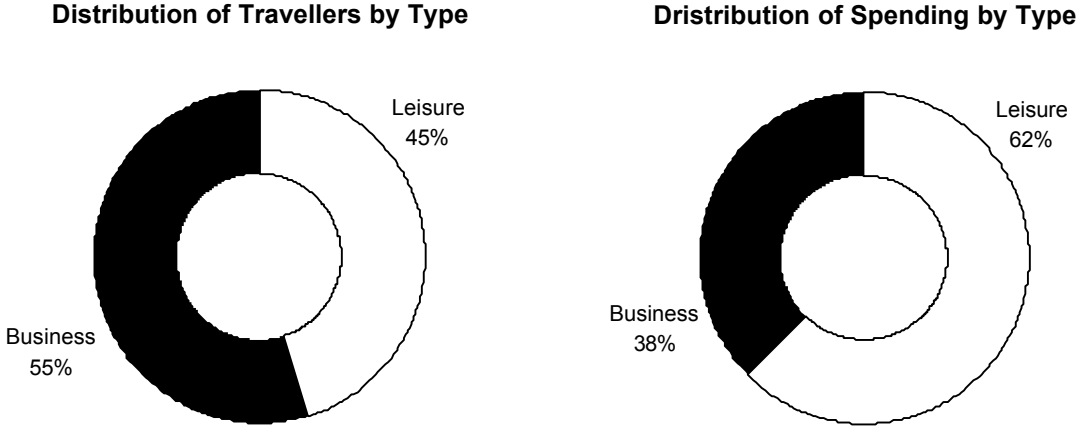
The natural capital of the Northwest Territories is rich in terms of offering many diverse opportunities for sustainable tourism within and outside of designated parklands. Six national parks are located within the Northwest Territories, two of them crossing the territorial boundary to Alberta and Nunavut respectively (see Table 5-4). Aboriginal involvement in the management of National Park lands has been limited as noted by the Senate's Subcommittee on Aboriginal Economic Development in Relation to Northern Parks.[109] Recognising that Aboriginal people see themselves as an integral part of the park ecology, parks are considered working spaces on this view, and not exclusively natural preserves. Eight recommendations are made in this report, requesting that Parks Canada convene a taskforce to study a renewed management approach to northern National Parks more closely aligned with the establishment of co-operative

[108] The World Travel and Tourism Council (WTTC) research findings report that the tourism industry is already recovering the consequences of the September 11 event of 2001, the industry is forecasted to regain pre-crisis levels by the third or fourth quarter of 2002 with a massive rebound for 2003. http://www.world-tourism.org/newsroom/Releases/more_releases/march2002/berlin.htm

[109] "*Northern Parks – A New Way*", A Report of the Subcommittee on Aboriginal Economic Development in relation to Northern National Parks of the Standing Senate Committee on Aboriginal Peoples, September 2001.

Chart 5-9

Non-Resident Business and Leisure Travellers 1999/2000
(per cent)



Source: Northwest Territories Department of Resources, Wildlife and Economic Development

management processes based on the principles of equal and shared management of those parks.[110] A progress report is scheduled for September 2002.

The Northwest Territories operates 29 territorial parks, several park reserves and recreational use areas and one historic park. There seems to be room for heritage and cultural sites which would not only create the desired mechanisms to attract visitors into communities but also offer opportunities of participating in local cultures.

During 1999/2000, a total of 73,000 non-resident travellers visited the Northwest Territories. Leisure travellers presented 45 per cent of all non-resident visitors but contributed over 62 percent of the total $48 million in revenues generated (see Chart 5-9). Business travellers spend less than leisure tourists and are less seasonal in their travel patterns; however, specific attractions or short-term outing packages could present incentives for the business traveller to extend visits in the territory.

While a total of 33,120 leisure travellers to the Northwest Territories spent $30 million, only 18,000 visitors to Nunavut in 1999 spent approximately the same amount.[111] One reason for this difference is the mode of transportation to or within the respective territory. The auto tourists driving through the Northwest Territories spend most of their money on gas, bring their own food provisions and camping gear for overnight-stays limiting this market segment's spending. The Nunavut tourist arrives by plane or cruise ship and brings limited gear and little food if any at all, and therefore spends more on

[110] http://www.parl.gc.ca/37/1/parlbus/commbus/senate/com-E/park-erep-e/rep01sep01-e.htm

[111] "*Nunavut Economic Outlook*", The Conference Board of Canada, May 2001.

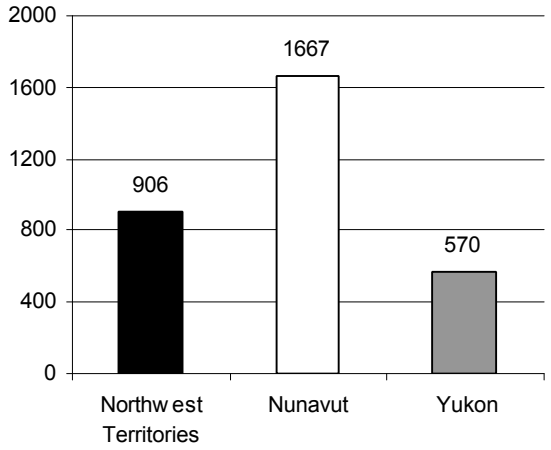
local services and products. Both territories cater to a high proportion of international tourists with Japan, Germany, UK and France being key markets, but they do not receive international flights nor have a customs infrastructure to do so.

Yukon received more tourists per year than the other two territories together, counting about 260,000 in 2000. Expenditures of non-resident travellers total roughly $180 million per year, meaning per visitor expenditures are significantly lower there than NWT and Nunavut (see Chart 5-10). This is due primarily to the fact that many visitors to the Yukon are actually on their way to Alaska and are merely passing through.

Four segments have been identified for the NWT tourism market: leisure, hunters, Aurora visitors and direct fly-ins (see Chart 5-11). Leisure tourists represent 72 per cent of all non-business visitors for 1999/2000, Aurora viewers made 22 per cent and hunter and direct fly-ins stayed relatively low with only 4 per cent and 2 per cent respectively. Most leisure tourists are summer tourists and are relatively mobile, while the Aurora viewers visit Yellowknife during winter. The Aurora viewing segment experienced considerable growth during the decade of the 1990s, exceeding more than 40 per cent each year. The 50 per cent decrease of Japanese Aurora viewing visitors during the 2001/2002 season is accounted to the general downturn in the tourism industry and equals the 50 per cent growth of the previous year, bringing the number of visitors back to about 6,500.

Chart 5-10

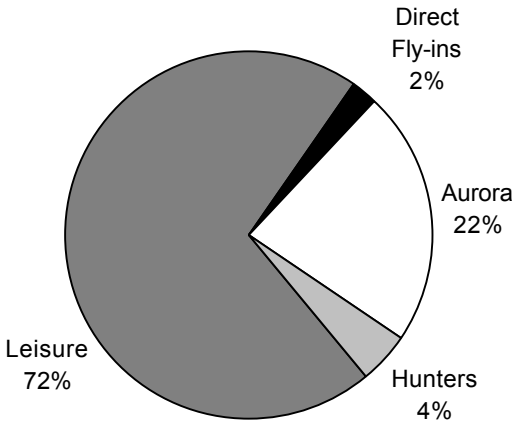
Average Expenditures by Non-Resident Travellers to the NWT, Nunavut & Yukon
(dollars)



Source: GNWT, Nunavut and Yukon Tourism Departments

Chart 5-11

NWT Non-Business Tourism Market, 1999/2000
(per cent)



Source: Northwest Territories Department of Resources, Wildlife and Economic Development

Sport hunting occurs primarily in the Mackenzie Mountains for Dall's Sheep and in the eastern parts of the territory for caribou. Sport fishing is most popular on Great Bear Lake. The segment of sport

hunting is not expected to grow as the capacity of operating outfitters has been reached and hunting camps are usually booked two to three years in advance.

Aboriginal Tourism Team Canada has noted that attracting tourists to remote regions of Canada for outdoors or heritage experiences is a challenge.[112] One reason for this is the seasonal pattern of outdoor tourism, which is primarily summer activity. Stakeholders mentioned that incentives are necessary to attract tourists to rural areas and auto tourists to longer visits.

Recognising tourism as a niche-market industry reveals its potential as economic and cultural contributor. Economically, tourism supplements the creation of new economic opportunities by:

- building on existing natural capital such as landscapes, waterways, northern lights;
- integrating parks developments;
- creating partnerships as strategy for developing products and accessing markets;
- and drawing from secondary impacts of resource development.

Culturally, tourism supports material and non-material self-expression of a society, being accomplished through arts and craft production, choice of foods offered within the service industry and activities providing learning opportunities. The recent plan of British Columbia's Haida for the construction of the Qau'llnagaay Heritage Centre is a good example. The centre will include an adventure tourism lodge, a cultural interpretive centre, a hotel with restaurant, a performing arts theatre, a school of art, longhouses, a museum and a community feast house.[113] Tourism drawn by these activities more likely encourages revenue staying in the local economy while the activities themselves present incentives for local involvement. Aboriginal Tourism Team Canada is conducting a national Aboriginal economic impact study to identify opportunities and barriers faced by Aboriginal people involved in the tourism industry. The outcome of this study, conducted between February and September 2002, is expected to provide information towards a strategy of growth for Aboriginal tourism.

During the past decade, several initiatives were taken to create incentives for the tourism industry, on the national, provincial/territorial as well as regional level. Several tourism organisations have been created over the past years with the mission of supporting the Canadian tourism industry (see Table 5-5). Current federal initiatives focus on co-operation between private and public sector and on marketing Canadian tourist destinations. Internationally, discussions revolve around tourism as sustainable economic development with a recent focus on eco-tourism. Concepts such as cultural and aboriginal tourism seek to capture shares of an emerging diversified tourism market. The Northwest Territories can benefit from these incentives and related findings, given local and regional initiatives are supported and recognised.

---

[112] "*Demand for Aboriginal Tourism Products in the Canadian and American Markets*", Aboriginal Tourism Team Canada, Executive Summary and Conclusions.

[113] "*Haida draw on culture to attract tourists*", Melanie Chambers, Globe and Mail, May 1, 2002, Print Edition, p. T7.

Table 5-5

Selected Tourism Organisations and their Mission

Tourism Organisation	Mandate	Mission
Northwest Territories Arctic Tourism (NWTAT)	Territorial, established 1996	Established as the collective voice for the Northwest Territories tourism industry and to function as the tourism-marketing agency for the Northwest Territories. NWTAT has been designated as a Regional Aboriginal Tourism Association (RATA) and is full voting member with a seat on the board and is classified nationally as a RATA.
Northwest Territories Parks and Tourism, Government of the Northwest Territories	Territorial	The tourism division works in partnership with NWTAT to promote the Northwest Territories as a world class tourism destination.
Canadian National Aboriginal Tourism Association (CNATA)	National, established 1992	
Canadian Tourism Commission (CTC)	National, established 1995	CTC is the marketing and information agency of the federal government and seeks to support tourism in Canada through research, product and industry development and advertising and promotional activities.
Attractions Canada	National, established 1997	A national information program established to expand the knowledge of Canadians by providing information on attractions of cultural or educational value representing the cultural and ethnic diversity of Canada.
Aboriginal Tourism Team Canada (ATTC)	National, established 1996	The ATTC initiative arose in response to expressed industry needs to address a variety of concerns and aspirations. The concept provides a vehicle for government and business to work as a team in implementing a collective vision for Aboriginal tourism and achieving common goals.

Previous studies have indicated the growth potential of Arctic eco-tourism products with a predicted increase particularly in the demand for ‘soft’ products. The eco-tourism market is divided into ‘hard’ or ‘soft’ by nature of activity, hard adventure eco-tourists prefer challenging activities such as sea kayaking or hiking within experiencing wilderness and learning about nature. The soft eco-tourist typically participates in package tours, tends to be more interested in learning about regional cultures and contributes more to local economies. However, the size of the potential market is not regarded as the critical factor but the ability to properly service the market. Eco-tourists have high standards regarding the products they purchase.[114]

The Territory's urban areas are particularly suited to be destinations for soft eco-tourists. Yellowknife has been successful in catering to this market segment by accommodating high numbers of visitors drawn by the phenomenon of the Aurora Borealis. The Aurora-viewing industry may be one with a relatively high degree of long-term potential, especially if the expansion of the Yellowknife airport runway goes ahead and current tourist infrastructure problems in the Yellowknife area are eased. With the possibility of

[114] “*Arctic Ecotourism Market Research Study: Final Report*”, prepared for Unaaq Inc., April 1995.

receiving international flights, particularly from Japan and Europe, the building of a customs infrastructure will be necessary. Several sources also expressed the desire to attract more domestic Aurora viewers, however, the high costs of domestic airfares are perceived as the biggest barrier. It is worth mentioning that Inuvik is home to the Aurora Research Institute, the primary source of support for research projects in the Western Arctic. Two research centres offer the use of their facilities and equipment; the Inuvik Research Centre alone had over 1,500 visiting researchers.[115] Demand for Aurora-viewing exists, as shown by the Northern Lights Centre in Watson Lake, Yukon, attracting tourists year-round with an indoor Northern Light display.[116]

An accord between the private sector tourism industry and Parks Canada will identify opportunities for collaboration in sustainable tourism practices near national parks. As reflected in the new Parks Canada Act,[117] conservation is the top priority for Parks Canada. Following the release of the Panel on the Ecological Integrity of Canada's National Parks report in March 2000, the chief recommendation that ecological integrity be the first priority in park management was included in amendments to the Canada National Parks Bill (Bill C-27). However, there has been substantial criticism that Parks Canada designed its policies according to ecological systems found in southern Canada with limited application to northern parks. The Panel on Ecological Integrity expressed legitimate concerns regarding the effects of traffic and tourist volume on ecological integrity in southern Parks. In the north, however, tourism use is lower, accessibility is more difficult and management structures are different. Northern national parks are, in the majority, subject to land claims agreements. Aboriginal people in northern Canada have a unique relationship with the National Park system as land claims have been or are in the process of being negotiated, including special use of parks lands.

Capacity building in Aboriginal communities was another critical theme emerging from the Subcommittee's hearings. Three areas were identified: education and training, infrastructure, and tourism-related activities. Parks Canada is holding workshops to train employees and only recently, Northwest Territories Arctic Tourism has received Tourism Education Council status from the Canadian Tourism Human Resource Council to undertake tourism-training programs as of April 1, 2002.

5.3 Manufacturing

The commercial manufacturing sector in the NWT is underdeveloped with almost all manufactured goods being imported from the south. Indeed, the fact that a manufacturing sector exists in the NWT is a tribute to the skills of local entrepreneurs in overcoming barriers posed by distance from markets and high transportation costs.

The sector's output of $7 million represented just 0.3 per cent of the Territory's GDP in 2001. This contribution, though small is important in that the manufacturing sector is one that contributes more in net inflows to the economy as a basic industry, or primary economic generator than would a support industry. While high transportation costs,

---

[115] http://www.aurresint.nt.ca/proje.htm

[116] http://www.northernlightscentre.ca/

[117] http://www.canada.gc.ca/gazette/part3/pdf/g3-02304.pdf

limited basic infrastructure and a small local market mean that it is unlikely that the NWT will ever be able to develop a strong diversified commercial manufacturing base, there is scope for the development of products in which local producers have a competitive advantage. As such, it is likely that much of the manufacturing sector in the NWT will continue to comprise small enterprises with few employees catering to specialised export niches, import-substitution opportunities and small-scale production of handicrafts and artistic products.

The diamond manufacturing industry - the cutting and polishing of rough diamonds - has been pointed to as a sector where the NWT could establish a viable manufacturing base. The GNWT has been keen to encourage the industry in conjunction with the development of a diamond mining industry and, to date, three diamond manufacturing plants have been opened in Yellowknife, each employing about 30 people. The owners have also established a sorting plant for sorting and federal government royalty purposes. The diamonds for cutting – some 10 per cent of Ekati's production - are made available by the owners of the mine under the terms of an agreement concluded with the GNWT. High labour costs and the labour-intensive nature of the industry, compared to places like India, mean that only larger gemstones are polished and cut in the NWT.

The future prospects of the diamond manufacturing industry in the NWT are hard to discern at present. Factors favouring further development include relatively low local labour costs, when it comes to larger gems, and the possibility of similar agreements being concluded with the owners of the soon-to-be-opened Diavik mine as were made with Ekati's owners. The development of Snap Lake could produce a further boost. The GNWT's moves to establish training schemes is also helping to establish a pool of recognised local talent. Proposed legislation to license diamond manufacturers in the NWT in line with many other producing jurisdictions may also help control development, establish training needs and help establish proof of origin of NWT diamonds. If handled well, such measures could help establish a critical mass necessary to establish a viable independent industry. However, long-term benefits of development will only be felt if the industry is able to exist in a competitive environment without substantial government support. A question of even greater consequence for the long term is whether a NWT diamond manufacturing industry could continue to exist after the cessation of diamond production in the Territory. At present, the industry benefits from its closeness to production. However, it is hard to envisage that diamonds would be flown in from other parts of the world to the NWT for processing and then back out to major diamond trading centres such as Antwerp and London. More established production centres such as Antwerp, Israel (where a highly automated industry allows for stones of varying size are cut), and New York will continue to pose stiff competition to the NWT. Further competition could also come from Russia, which is encouraging the development of a cutting industry. In the medium term, it is also not certain that Diavik and Snap Lake diamonds will be set aside for cutting and polishing in the NWT.

5.4 Construction

The last few years have been ones of unprecedented boom for the NWT construction industry with the construction of the Ekati and Diavik mines and mineral exploration being the major driving force behind this. In 2001, the share of total output accounted

for by construction shot up to over 17 per cent as building work at Diavik stepped up. In fact, construction accounted for nearly half of the total increase in real GDP in the Territory. In addition to mine construction, recent years have also seen demand for housing increase as the economies of Yellowknife and other areas have grown and incomes and population levels have risen. Previously the construction industry had suffered in the 1990s due to contractions in the government sector and out-migration from the Territory.

The problems the industry is facing in the NWT at present mostly concern the relative lack of human capital in terms of educational and skill levels as well as the available workforce. Many jobs in the industry require significant technical expertise and shortages of skilled labour are reported to pose a significant problem, one compounded by competition from Alberta and Saskatchewan.

These pressures show no sign of letting up with the next year also set to be a busy one for the industry. The program of infrastructure upgrades initiated by the GNWT will also increase the level of demand facing the industry. Completion of work at Diavik in spring 2003, though, will inevitably lead to a cooling off of activity in the sector. This will allow some easing of current labour and housing shortages and for extension of training initiatives in advance of construction work at Snap Lake and on the Mackenzie Valley pipeline, should they occur. Improving skills through training should also provide a general increase in the range of wealth-generating opportunities available to NWT residents in the sector over the long term. However, there is a risk of investing too heavily in the sector as its fortunes tend to be linked to large capital projects. Should these not occur the sector could be left with considerable over-capacity.

5.5 Service industries

The final part of this chapter will consider the prospects for the service sector of the NWT economy. The impact of construction work at Diavik has temporarily reduced the share of economic activity accounted for by the service sector in the NWT, it having fallen from 66 per cent of real GDP in 1999 to just 56 per cent in 2001. This share should rise again as work on the mine is completed and the service sector will continue to be a key generator of economic activity in the Territory.

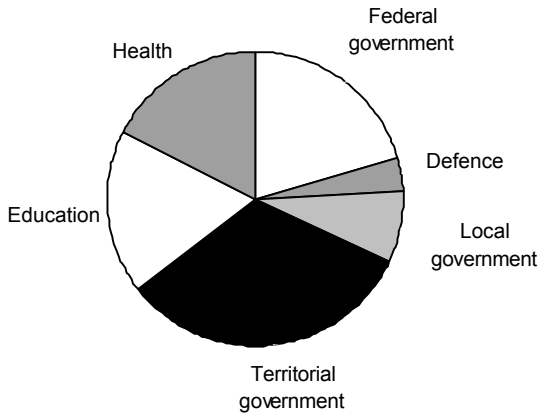
5.5.1 PUBLIC SECTOR

Previous chapters have shown how the public sector (including government administration, education and health and social services) has long played an important role in the economy of the NWT and changes in government spending patterns have had a substantial impact on the economy in the past. Over the 1999-2001 period the public sector accounted for a quarter of all economic activity in the Territory. Within the public sector, it is the size of the public administration apparatus that pushes up the share of the public sector in the economy compared with that of Canada as a whole. The scale of activity in the education, health and social services sectors is in line with national levels.

Chart 5-12 shows that public administration (the activities of the federal, territorial and local governments and the armed forces) accounted for almost two thirds of the $545 million the public sector contributed to the Territory's real GDP in 2001. The remainder was split between the education and health and social services sectors. The territorial government is the largest single direct contributor to the Territory's GDP, accounting for about half of public administration activity in the NWT. In addition, the local government, education, and health and social services sectors derive a very large share of their income from the GNWT. In 2001, the territorial government contributed $177 million directly to the NWT's GDP, local governments $42 million, education $99 million, and health and social services a further $95 million. In Canada as a whole health and social services output was about a quarter higher than that of the education sector. The relatively high share of the education sector in the NWT is to a large extent a consequence of the comparative youth of the Territory's population.

Chart 5-12

Public sector GDP, 2001



Source: Statistics Canada

The federal government contributed $132 million either directly though its own activities or through spending on defence. Ultimately, however, the federal government funds a much larger share of public sector activity in the NWT than these figures suggest. Chapter 4 showed that typically between 70 and 80 per cent of territorial government revenues are provided by the federal government. Meanwhile, the territorial government provides a large share of the funding for health, education and local government. Chapter 4 also showed that the principal mechanism for federal government transfers is the Formula Financing Grant which is intended to enable the GNWT to provide a range of public services comparable to those offered by provincial governments. The high level of grants as a proportion of total revenues is necessary because the Territory still has a small revenue base and incurs high costs to deliver government services to a large number of very small communities scattered across the north. One of the main concerns with this funding mechanism is that the GNWT has a reduced incentive to promote economic development, as it is only able to retain 20 per cent of new revenues. In other words, if the GNWT receives new tax revenue from increased economic activity it loses most of it in the form of a reduction in the grant. Another concern is that territorial governments, unlike the provincial governments, do not receive resource revenues. The problem with this situation is that often territorial governments are forced to incur increased costs (such as providing the necessary infrastructure and other government services) as a result of a new economic activity, but may gain very little in new tax revenues. This situation can act as a hindrance to economic development.

In the longer term, the impact of devolution and Aboriginal self-government together with resource revenue-sharing agreements may go some way to resolving some of these concerns. In addition, the development of the resource sector is likely to considerably increase the size of the local tax base and allow governments in the NWT to reduce their level of economic dependency on the outside. However, these developments are not likely to occur for some years and the medium term will see only gradual changes to existing fiscal relationships in the NWT. No substantial changes to the existing system of federal transfers are anticipated, nor to the generosity of the system. The relatively conservative fiscal policy of Canada in the 1990s has been relaxed to some extent and economic growth over the medium term is set to be healthy.

Another factor that will shape the future path of government spending in the NWT is the changing demographic structure of the Territory. As the population ages health spending pressures will increase. At the same time the relative size of the school-age population will fall reducing the amount that has to be spent on education and help bring territorial health and education spending patterns more in line with national ones. Nonetheless, education spending pressures will remain high to some extent given the need to redress the NWT's human capital problems.

5.5.2 Other Service Industries

The remainder of the service sector industries include transportation and communication, wholesale and retail trade, finance, insurance and real estate, and other business services such as technology, legal and professional services firms. Together, these remaining service sector industries accounted for an average of 36 per cent of total real GDP between 1999 and 2001. The relatively small size of these sectors compared to those of Canada as a whole[118] attests to the undeveloped state of the non-primary goods-producing sector in the NWT and the tendency of residents to import many goods and services directly from the south. Low population density and climactic conditions also limit the scope of opportunities for service providers. Nonetheless, the service sector has prospered in recent years in line with the general surge in economic activity in the Territory. However, it also faces some of the same problems of success as other sectors. Several service industries, such as retail trade, are also suffering from labour shortages, a problem exacerbated by competition from other (higher paying) industries for employees and high housing costs. Again, once Diavik construction is complete and residential construction increases to meet rising demand for housing some of these problems should ease.

In general, the fortunes of service-related industries, outside the government sector, rise and fall along with the rest of the economy. There are exceptions to this rule, mining services in the NWT are a prime example. It has benefited from the burst of mineral exploration activity over the last few years, bolstered by local procurement requirements built into socio-economic and impact-benefit agreements.

Other opportunities for growth include substitution for currently imported services. In addition, improvements in communications technology are changing the dependency of

[118] They accounted for 50 per cent of real GDP, on average, in Canada over the same period.

some service industries on location. Many services can now be delivered almost instantly throughout the world and the barriers to development in the NWT posed by distance from markets, suppliers and institutions are gradually being reduced over time. However, the success of industries based on communications technology also often relies on factors such as the creativity of the people designing and using new media, a network of support services and institutions, as well as access to cheap and reliable communications infrastructure. Thus, while the reduction in importance of location may favour the development of exportable services from the NWT there are several factors working against placing too much reliance on the high-tech sector and other business services as a mainstay of growth in the Territory. These include a lack of human capital and a dense network of other high-tech firms and educational institutions, together with relatively high capital costs in replacing rapidly obsolete equipment.

Overall, with the resource and other sectors of the NWT economy expected to grow, prospects for service-related industries remain sound over the longer term. The prospects for the mine services industry can be generally expected to follow those of the mining sector as a whole.

6 Conclusions

The purpose of this report was to provide an independent assessment of the prospects for the NWT economy and of the structural issues that underlie its economic performance over the long term. The study has sought to identify the main factors influencing the economic competitiveness of the Territory and its industries within a framework that examines the broad capacity of an economy to generate wealth and improve the quality of life of its citizens. This approach considered four broad forms of capital necessary for wealth creation, namely natural, physical, human and social/organisational capital. In line with other work carried out by the Conference Board, this analysis considers economic growth to be only one determinant of quality of life. This approach also recognises how a society's values concerning this balance, and how the degree of cohesion in a society, can influence the pace and scale of economic development. This chapter consists of two sections: a summary of the main findings; and a discussion of "strategic considerations" that we believe will affect the development of NWT's economy.

6.1 Main findings

The previous chapters have examined the status of the NWT's wealth-generating capital and the prospects for the various sectors of the Territory's economy over the next twenty years or so. This section highlights some of the main findings from this analysis.

The first part of Chapter 4 provided a context for the examination of the broad forms of wealth-generating capital by looking at the values of the NWT population and the degree of social cohesion among its people.

Values play an important role in influencing behaviours and the policy choices that a society makes and therefore influence the amount of wealth-generating capital in a society. The Conference Board found that there are many values that are widely shared across the Territory, such as attachment to the natural environment and a desire for greater local control over development. There also appears, however, to be a divergence of views in terms of the pace and nature of economic development that is acceptable based on differences in priorities of values. The values of the people of the NWT are not necessarily fixed and will continue to adapt to changing socio-economic and environmental circumstances.

Closely tied to the issue of values is the concept of **social cohesion**. Although there is no universally accepted definition of this term, it generally refers to having both some common values and a tolerance for differences leading to a sense of trust that keeps society together and networks functioning properly. The Board found that the degree of identification at a territorial-wide level is weak. The NWT in its present form is as new as Nunavut, yet there has been no similar renewal of symbols and institutions. The new NWT could be seen by some as a disparate association of communities with little shared identity. This can explain the concern that development be regional in its focus and the seemingly low degree of labour mobility between regions. Nonetheless, there are an increasing number of examples of willingness to co-operate. One other reason

for low social cohesion can be attributed to the lack of political control and participation in the economy on the part of the Aboriginal community, although this has changed considerably in recent years.

Chapter 4 then went on to evaluate the Territory's **wealth-creating capital** to determine where the most prudent investments are needed to ensure future prosperity for the NWT.

In terms of its **natural capital** the NWT possesses abundant non-renewable and renewable resources. The degree of knowledge about the extent of these natural resources also appears to be reasonably good, although more resources for geoscience would be welcomed. The Territory's resources are spread across a vast area and provide the basis for many potential industrial developments. However, the uncertainty affecting the investment arising from unsettled land claims in some areas may delay some of these projects. Over the longer-term the potential impact of global warming on the NWT's renewable resources poses a major unknown.

The NWT also faces several issues concerning its **human capital**. The population of the Territory is relatively young, and this should help the NWT maintain good labour force growth at a time when Canada as a whole will be experiencing a relative dearth of available workers. However, falling birth rates and rising life expectancy mean the population has begun to age rapidly. The non-Aboriginal population appears to be relatively transient, a factor that influences the rate of net-migration into the NWT (in the past, migration has been a very important determinant of population growth). Many of the labour shortages that exist at present are restricted to those areas where development has been most rapid in recent years and pulled in temporary workers from outside the NWT. These "job tourists" contribute relatively little to the local economy and tax base.

The Conference Board's review of the general health of the population of the Territory showed that that NWT residents are very close to the national rates for many health indicators. It also suggested that many social conditions have either stabilised or are improving. Yet there is cause for concern about certain social problems and lifestyle habits that can negatively affect quality of life and increase demand for health care services such as the move to a more sedentary lifestyle and continued high smoking rates. The overall level of education of the Territory's resident's compares favourably with national levels, while regions with lower levels of education are making substantial progress.

The Conference Board's review of the NWT's **physical capital** suggests there are several areas in which investments are required. There are several small-scale strategic investments, such as the bridge-building program in the Mackenzie Valley and road upgrading, which could help industry and residents alike. Improving access to Internet services is another example of a strategic physical capital priority. One immediate problem facing the NWT is the lack of housing in key centres (e.g., Yellowknife) and other areas where the resource industry is flourishing. This is having a short-term impact on the Territory's ability to attract labour as well as on quality of life. Many of the cost disadvantages that derive from the Territory's physical infrastructure stem from the small size of the local market, which precludes the realisation of economies of scale in

many areas. Although NWT's lack of physical capital requires serious attention and will affect the pace of development, it is not expected to bring a halt to all economic and social development in the Territory. For example, according to industry sources, the absence of two much talked-about new all-weather roads down the Mackenzie Valley and through the Slave Province do not appear to form a major obstacle for development.

The medium- to long-term obstacles that the Board does see impacting on the development of the Territory's economy revolves around its **organisational capital.** Specifically, the complex regulatory and government system in the NWT coupled with the uncertainty surrounding land claims and the impact of devolution and Aboriginal self-government on the future political development of the Territory. Governance structures play a vital role in determining the nature of the investment climate. Firms may be deterred from making investments if land tenure is uncertain, regulation processes too long or too complex, or if it is simply not clear which level or branch of government has the final say in making decisions about regulating certain activities.

The Board heard concerns expressed over the number of regulatory bodies that can exercise control over development in the NWT and the length of time that it can take firms to acquire all of the necessary permits and licenses for a project. There is also concern about duplication within the regulatory system and about duplication of the consultation processes that regulators often require. Added to this is the potential for environmental assessment and environmental assessment review to delay a project. The nature of this complexity and uncertainty weigh particularly heavily on small and medium-sized firms, those that are the engines of growth in most economies and that tend to be most innovative. While noting the concerns about the regulatory system, it is also important to bear in mind the contribution that a well-functioning system can make to competitiveness and the safeguarding of the physical and social environment.

In general, it appears that firms operating in the NWT tend to accept the need to build up trust, ensure developments are sustainable and garner local support, and that this relation-building and due-diligence will mean developments occur at a slower pace than in other jurisdictions. Nonetheless, it appears that there is potential for some streamlining of processes. "One-stop shopping" may not be feasible but better co-ordination may be. Rationalisation may also reduce the time-, financial- and human-resource burden on regulators and smaller communities.

There is also uncertainty concerning the devolution, land claims and Aboriginal self-government processes. This uncertainty is affecting the current investment climate. During the course of its research the Conference Board found that there is a widely held view in the NWT of the need for more responsive government. There appears to be a strong desire for greater local accountability and of reducing the dependency on federal transfers. Assuming control of resource revenues through the devolution process that is set to take place over the next few years is seen as a means by which the NWT could see its dependency on outside sources of revenue greatly reduced. This could also help the NWT bypass some of the features of the federal government transfer system that reduce the territorial government's incentive to invest in new developments. However, there is a danger in a time of plenty of viewing resource revenues as a Holy Grail that will allow the NWT to throw off federal control. Should devolution occur but resource

revenues not be as rich as expected, or that some developments don't take place, the reliance on Federal government funding may revert back to past levels but without the old TFF agreement in place.

It is also important to bear in mind that devolution will occur in conjunction with the settlement of Aboriginal land claims and self-government negotiations. The nature and extent of powers, responsibilities and the revenue-sharing arrangements between the three levels of government that will result is unclear. It appears that regionalism will be a strong feature of this process, yet the manner in which this will manifest itself is also unclear. There are questions as to how governments will co-ordinate policies and the delivery of services without increasing duplication of services and the complexity and size of government in the NWT. There is also a question of the capacity of small communities to manage the downloading of such an array of powers and responsibilities.

With the state of wealth-generating capital in mind, the Conference Board explored the outlook for industry throughout the NWT. Much of the chapter concentrated on non-renewable and renewable resources since these will be the primary drivers of growth over the next twenty years and beyond.

Non-renewable resources will continue to be the focus of economic activity in the Territory in the years to come. Diamond mining, the natural gas industry and mining exploration have already breathed new life into many communities bringing income and employment and providing revenues for governments. Despite the richness of mineral resources found in the NWT, there are several major barriers to the mining industry. The harsh climate, imperfect information on the potential of mineral resources, the lack of a skilled labour force, the relative paucity of local infrastructure and high transportation costs all make the NWT a high cost environment to operate in. However, it would appear that the chief matter of concern for the investment climate for the NWT non-renewable resource sector revolves around questions of governance. Strict and potentially overlapping regulatory requirements, the slowness of the regulatory process add to normal operating costs, as do the costs associated with impact benefit agreements. The importance of the role that costs play for the mining industry is amplified by the fact that the prices of many key commodities are determined on world markets. The Conference Board has also heard that junior and medium-sized firms are increasingly concerned about being pushed out of the exploration industry due to the complex regulatory system and the costs of ensuring local support for their activities. This discussion underlies the need to make the NWT an area that is perceived as one in which it is easier to do business than at present.

Over the medium term the NWT still appears to be ahead of its competitors in the **diamond-mining sector**. However, diamonds have been discovered in other parts of Canada where operating costs are lower and investment regimes are seen as friendlier. On balance, the Conference Board feels that the probability of development of a third diamond mine in the NWT at Snap Lake site is fairly high. The prospects for development of additional sites, however, appear uncertain.

As well as diamonds the NWT possesses deposits of many other base and precious metals and minerals. There are two small gold mines operating in the Territory and

some other sites, where production facilities were mothballed, are being reactivated. However, price levels and the scale of identified deposits have not been strong enough to warrant serious development proposals of new sites up to now. At present, it would seem Con and Giant gold mines will close unless production costs can be greatly reduced.

The future is bright for the **natural gas** industry. Current activity in southwestern parts of the NWT, Norman Wells and Inuvik will continue for at least twenty years. Expansion throughout the Ft Liard and Cameron Hills regions is also expected (though current land-claim negotiations with the Deh Cho may slow these plans over the short to medium term). The multi-billion dollar pipeline project up the Mackenzie Valley that would allow access to reserves in the Mackenzie Delta has not been approved as of yet. Its construction and field development alone could contribute between $3.6 billion and $5.4 billion to Canada's overall GDP and add between 52,000 and 76,000 jobs (person-years). These benefits would be felt right across Canada and by the federal government.

For the project to advance, market conditions in North America must be favourable. Also, the existence of Alaskan natural gas reserves has complicated the approval process. That State is doing its best to promote pipeline construction along the Alaskan Highway. This route is far less economic than the Mackenzie Valley route, however other factors such as the environment, Aboriginal land claims and government lobbying efforts are making it a credible threat to the Mackenzie Valley option.

The scale of potential non-renewable resource revenues underlies the importance of investing any windfall wisely. Several other jurisdictions with significant natural resource revenues have established diversification funds to invest for a future where such revenues have been exhausted. It would be all too easy to fritter away revenues on current consumption or unsustainable investments.

Renewable resource development suffers a great deal from the slow regeneration cycles associated with northern climates along with the high cost of doing business in the Territory, which limit the profitability of exports. Hydroelectricity has been one area where stakeholders have suggested greater development possibilities exist, further enhanced through innovations that limit the environmental impact. Fish, wildlife and forests are plentiful in the NWT, but must be managed carefully to ensure undue stress is not placed on the resource. Hunting and sport fishing are important components to the NWT's economy, for visitors and residents. And while there is little room for growth in these areas, both activities rely heavily on the preservation of habitats and species for their survival. Ultimately, it would seem that the renewable resources throughout the Territory are safe from over-development over the medium to long term, but could be advanced through strategic investments and improved organisation of the roles of regulatory bodies and government.

The cost of power in the NWT is extremely high in comparison to the rest of Canada. And despite the existence of powerful river and lake systems throughout the region, major improvements to the Territory's **hydroelectric power** generation capacity are at least ten years from occurring, if not longer. With this said, there are opportunities for Aboriginal groups with land claim settlements to develop facilities for their own

community's use; however, the high cost of such developments does represent a significant barrier. Other small-scale operations could be developed to serve resource development needs. Nevertheless, major expansion of the industry will likely develop through increased demands for clean energy from southern buyers in Alberta and Saskatchewan.

The major contribution of **hunting, fishing and trapping** to the Territory's economy lies in the area of domestic production. With the exception of a relatively small commercial fishery mainly focused on whitefish, commercial exploitation appears to be limited to sports fishing and hunting operated within the context of the tourism sector. Trapping contributes to the economy by producing raw wild fur products for trade and export but has a limited growth potential. Opportunities exist for production of designed fur garments and accessories by building on existing human capital. There is a need to increase educational capability to further this type of industry. Co-operation with activities in the arts and crafts sector would also be beneficial.

While the importance of subsistence production to Aboriginal people is uncontested, measurement of its contribution to the economy remains difficult and incomplete. Replacement cost calculation can estimate a dollar value for food and capital cost calculation can estimate an hourly 'wage rate' for each activity in the harvesting process, but variations in harvesting effort and in collecting harvesting data, for example, can change the value. Furthermore, the importance of women's labour in domestic production remains unreported in terms of replacement value for clothes and food production.

The **arts and crafts** sector involves a large number of people relative to the population but its economic value is not well documented. The importance of arts and crafts lies to a large degree in its contribution to identity creation but also provides income for urban as well as rural areas. The fostering of this sector will contribute greatly to the economic development in small communities. But overall, more information is needed on its value to the economy, the level of participation and the purpose of this participation.

The economic contribution of **tourism** is modest at present. Recent growth in the industry occurred through the growth of one single segment, the Aurora viewing industry, with the urban centre of Yellowknife being the main benefactor. Building on one individual segment for industry growth creates high vulnerability.

The Territory's cultural and geophysical diversity offers more than just outdoor experiences but an opportunity for its inhabitants to co-operatively manage land and resources in a sustainable way. Tourism, including related industries, can play a bigger part in the economy than it does now by taking advantage of niche markets and seasonal and part-time patterns. At present, the potential for a tourism market in the Northwest Territories, created by existing natural capital, cultural diversity and existing demand in the tourism market is offset by limited infrastructure, little community involvement in rural areas, untapped opportunities in specific target marketing and a disadvantageous organisational structure.

The world tourism market has in recent years shifted toward sustainable tourism, making efforts to minimise negative local impacts (environmentally as well as socially) and maximise local benefit and involvement. The Northwest Territories has the

opportunity to set a (Canadian) example in developing a sustainable tourism diversified according to regional geophysical and multicultural environments.

The long distance of the NWT from major centres of economic activity, combined with its low population, put it at a disadvantage in developing industries that rely on low transport costs and economies of scale. As such **manufacturing** in the NWT is likely to remain small-scale, filling specific niches and furnishing some of the needs of the resource sector. Diamond manufacturing is being promoted by the territorial government as a source of wealth-generation in the NWT, although the prospects of the industry are unclear.

The prospects for the **service sector** are generally sound, given a reasonable outlook for resource development and the public sector. Improvements in communications technology are reducing the importance of location and may favour the development of exportable services from the NWT. However, there are several factors working against placing too much reliance on the high-tech sector and other business services as a mainstay of growth. These include a lack of human capital and a dense network of high-tech firms and educational institutions in other regions of Canada.

6.2 Strategic Considerations

The Conference Board has identified three strategic considerations affecting the shape of economic development in NWT. These strategic considerations are not recommendations—rather, they are observations of events and issues that we believe will greatly influence the long-term growth of the NWT and which should therefore receive attention by all stakeholders.

6.2.1 CHOOSING AN ACCEPTABLE PACE FOR DEVELOPING NWT'S ECONOMY

This report has talked a lot about the current and future economic opportunities that exist throughout the NWT. In many cases, the issue of "pace of development" came to the fore and as such was considered an appropriate title for this report. Clearly, there are diverging views of how and at what speed the Territory should proceed with the development of its rich store of natural resources. The camps can be separated in two. Some believe that the current market is ripe for further resource extraction and that the Territory should take advantage of it while it can. Others believe that the Territory is already operating at or near full capacity and suggest slowing things down until local resources become available before proceeding with any further development. Again, it cannot be overstated that despite these differences, all parties seemed united in their belief in environmentally responsible, sustainable economic development.

There are benefits and costs to both approaches, and they both hinge on the fragile nature of the outlook itself. A natural gas pipeline up the Mackenzie Valley, a third diamond mine at Snap Lake, extensions to the life of Con and Giant Mine and incremental road and bridge construction to prolong the winter season for roads into the Mackenzie Valley are all economic activities show some risk of not taking place. The pipeline could be built along the Alaskan highway not only eliminating the Mackenzie Delta reserves from producer's radar screens for at least one full decade, but also bringing all exploration activity to an immediate standstill. DeBeers could pull out of the

NWT because it finds the cost of doing business lower in other Canadian jurisdictions such as Saskatchewan or Alberta. Miramar may choose to close its operations when its project at Hope Bay (Nunavut) opens and if the costs of its Yellowknife operations cannot be reduced. Of course, such events would still leave the Territory with two diamond mines operating and a small natural gas industry, but a far cry from its potential. The challenge is to proceed in such a way as to maximise the benefits (secure all of the prospective projects along with the direct and indirect benefits) and minimise the costs (environmental, social, and opportunity costs) of the opportunities that currently exist.

With this said, how should the Territory proceed; what is the best pace for development? There is little doubt that the current economy is operating at or near its capacity, and the benefits of further growth will go largely to outsiders, such as the so-called job-tourists and the federal government through the TFF agreement. Because of the labour shortage, any future development impact settlements will have to be realistic in the employment targets set and focus on royalty payments. This will leave the Territory without any of the wage, training and work experience benefits that usually stem from such a project. It also increases the costs of production that the producer may or may not be willing to bear.

The alternative is to slow the pace of development down until the local population and government are ready and able to take full advantage of all the benefits; that is, until the issues of human and organisational capital deficiencies are dealt with. The risk in this approach is that the investing firms may not be willing or able to wait. This is especially the case for the NWT where the two most significant projects on the horizon (Mackenzie Valley pipeline and Snap Lake diamond mine) have credible alternatives. There is also world demand and supply issues that, while seemingly secure for both natural gas and diamonds, come with some uncertainty and any collapse could make northern resource development unprofitable. So clearly, the pace of development chosen will impact the Territory, and quite possibly in a very profound way.

The most likely scenario likely lies somewhere between these two alternatives. The fact remains that the NWT is incredibly rich with natural resources, much of which will be developed over time. The issues are how to best manage that development and in regions where development is delayed or non-existent, what can be done to ensure residents receive adequate opportunities. The Conference Board feels it will be important that diversification funds be developed for such situations. As well, it is of vital importance that the governing bodies in the NWT develop sound investment strategies with their new revenue streams to ensure long-term prosperity.

In the end, the Conference Board cannot identify the acceptable level of economic development for the residents of the NWT. We can only suggest that mechanisms be in place for residents to have an informed debate and to choose options based on a clear understanding of the tradeoffs associated with the pace of development chosen. In order for this to occur, there must be a sufficient level of trust in the Territory among stakeholders.

6.2.2 Laying a Foundation for Sustainable Growth

Presently, the NWT economy is performing well, particularly with the addition of the new diamond mining industry. This growth is leading to certain expectations such as renewed calls for devolving additional responsibilities from the federal government to the territorial level. Systemic change is most frequently made in either affluent (boom) times and in difficult (bust) times. However, in bust periods there are fewer financial resources available and changes are usually related to cost-cutting and service-reduction measures as seen in the NWT during the mid-1990s. In periods of strong economic growth, such as currently found in the NWT, there is greater financial manoeuvrability to implement changes necessary for ensuring long-term sustainable growth. Can the NWT capitalise on the current boom to institute improvements and services that will cushion the next economic downturn and lead to sustainable growth?

As pointed out in the report, there are some problems with respect to human capital and social/organisational capital that hinder economic development in the NWT, as well as unresolved issues of physical capital deficiencies. These include inequities in health and education levels within the Territory, a complex regulatory and governance system, and a general lack of common ground in which to build relationships. The current success in the NWT should not mask these underlying socio-economic problems in the Territory, but rather take advantage of the current economic conditions to work constructively to tackle these issues. By doing so, the NWT will be better prepared to withstand its next economic downturn when it occurs.

There are many prospects for diversification, but the one put forward most often in this report was that of greater natural resource diversification. Not only should the NWT work toward promoting and ensuring vertical integration of resource developers, mine suppliers and manufacturers within the Territory as it has done, but it should also promote a structure that allows for all sizes of operators to do business. There is a lot of merit in attempting to attract large multinational corporations into a region as it offers a significant risk/reward trade-off. However, if such actions come at the detriment of the smaller operators, the prospects of growth over the long term will weaken significantly. It is often the case that from small and medium businesses come new innovations and new discoveries that form the backbone of industry. The NWT has a history of such operations—one that should be preserved.

6.2.3 Achieving Effective Governance

This report also highlighted the importance of working toward closure on issues of land claims, devolution, regulatory requirements, land entitlements, and government responsibilities. It is understandable that these issues are ones that, when settled, represent the future of the NWT for a long time to come, and therefore cannot be treated lightly or too hastily. These are important decisions that involve laying the social/organisational capital building blocks in place; i.e., how the Territory will organise itself to work with the other forms of capital to generate wealth.

Control over one's resources is very important to all regions. The NWT is no exception. However, devolution to the GNWT, Aboriginal self-government and decentralisation to the regions (regionalisation) must all fit together in a coherent manner or risk building an

organisational framework that is unstable or unworkable from the outset. The Territory cannot afford to be over-governed.

To this end, *Common Ground* was meant as a focal point for the NWT at a time when there is a real probability of further Balkanisation. In its past, the Northwest Territories has undergone repeated divisions. Regionalisation, settlement of land claims agreements and the establishment of seven Aboriginal self-governments have the potential to divide the region further if they are not undertaken within a territorial wide context. This "common ground" should be sought, recognising the advantages of sharing a common vision most often outweigh those of acting independently, and dispelling concerns of further governance complications.

CONCLUDING COMMENTS

This report has attempted to provide an independent assessment of the NWT economy and of the structural issues that will likely influence its economic performance over the long term. A holistic approach was taken that allows for an analysis of several forms of capital that are required to support high economic performance and a high quality of life. Unlike many other jurisdictions, including its northern neighbours, the NWT is in the midst of considerable economic growth. The challenge is in ensuring this growth can be sustained over the long term while improving the quality of life of the Territory's residents.

Appendices

Appendix A: Acronyms

Acronyms

DIAND	Department of Indian Affairs and Northern Development
GNWT	Government of the Northwest Territories
FAS	Fetal alcohol syndrome
MVAPC	Mackenzie Valley Aboriginal Pipeline Corporation
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVPG	Mackenzie Valley Pipeline Group
NRTEE	National Round Table on the Environment and the Economy
NWT	Northwest Territories
PYLL	Potential Years of Life Lost
RWED	Northwest Territories Department of Resources, Wildlife and Economic Development
TCF	Trillions of cubic feet (of natural gas)
TFF	Territorial Formula Financing

Appendix B: References

"*A Comparison of Natural Gas Pipeline Options for the North*", Canadian Energy Research Institute, October 2000.

"*An Evaluation of the Economic Impacts Associated with the Mackenzie Valley Gas Pipeline and Mackenzie Delta Gas Development*", prepared by Wright Mansell Research Ltd., May 2002.

"*Arctic Ecotourism Market Research Study: Final Report*", prepared for Unaaq Inc., April 1995.

"*Best Practices in Natural Heritage Collaborations: Parks and Outdoor Tourism Operators*", prepared by Pam Wight and Associates for the Canadian Tourism Commission, 2001.

"*Budget Address Northwest Territories, 2002-2003*", Northwest Territories Department of Finance, February 2002.

"*Business Program Review Committee Final Report*", Northwest Territories Department of Resources, Wildlife and Economic Development, July 2001.

"Canadian Values Challenge the Canadian Way", Stephen Vail, The Conference Board of Canada, 2000.

"*Common Ground*", Economic Strategy Panel Final Report, GNWT, June 2000.

"*Demand for Aboriginal Culture Products in Key European Markets 2000*", prepared for Aboriginal Tourism Team Canada and Canadian Tourism Commission by Price Waterhouse Coopers.

"*Demand for Aboriginal Tourism Products in the Canadian and American Markets*", Aboriginal Tourism Team Canada

"*Draft Co-operation Plan of the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories*", Northern Pipeline Environmental Impact Assessment and Regulatory Chairs' Committee, December 2001.

"*Exploration Overview 2001, Northwest Territories, Minerals*", DIAND, November 2001.

"*Fraser Institute Annual Survey of Mining Companies, 2001/02*", co-ordinated by Laura Jones and Liv Fredericksen, The Fraser Institute, December 2001.

"*Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories*", Northwest Territories Department of Transportation, November 2000.

"*Mapping the Policy Landscape: Considering Northern Gas Pipeline Options*", Canada West Foundation, December 2000.

"*Mapping Social Cohesion: The State of Canadian Research*", Jane Jenson, CPRN Study No. F/03, 1998.

"*Northern Parks – A New Way*", A Report of the Subcommittee on Aboriginal Economic Development in relation to Northern National Parks of the Standing Senate Committee on Aboriginal Peoples, September 2001.

"*Northern Territories Transportation Systems Study*", Transport Canada, February 1999.

"*Nunavut Economic Outlook*", The Conference Board of Canada, May 2001.

"*The NWT Health Status Report 1999*", Northwest Territories Health and Social Services, Northwest Territories Department of Health and Social Services, December 1999.

"*The NWT Housing Needs Survey - 2000*", Northwest Territories Housing Corporation and Northwest Territories Bureau of Statistics, March 2000.

"*Operating Diamond Mines and Recovery Plants in the Republic of South Africa, 2001*", Department of Minerals and Energy, Republic of South Africa.

"*Our Common Future*", United Nations' World Commission on Environment and Development, 1987.

"*Overview of Trends in Canadian Mineral Exploration*", Natural Resources Canada.

"*Pressures on the Arctic Ecosystem from Human Activities*", Northwest Territories Department of Resources, Wildlife and Economic Development, March 1998.

"*Report on NWT Geoscience Needs Workshop 2000*", C.S. Lord Northern Geoscience Centre, January 2001.

"*Responding to Global Climate Change in Canada's Arctic: Vol. II of Canada Country Study: Climate Impacts and Adaptation*", Maxwell, Barry, Environment Canada, 1997.

"*Review and Recommendations by the Business Program Review Committee*", Northwest Territories Department of Resources, Wildlife and Economic Development, October 2001.

"*Securing Our Future: Government of the Northwest Territories Response to the Economic Strategy Panel* Common Ground *Strategy*", Northwest Territories Department of Resources, Wildlife and Economic Development, December 2000.

"*Smoke Alarm: A Summary Report on Smoking in the Northwest Territories*", Northwest Territories Health and Social Services, April 2001.

"*State of the Debate: Aboriginal Communities and Non-Renewable Resource Development*", National Roundtable on the Environment and the Economy, 2001.

"*State of Knowledge Report: West Kitikmeot/Slave Study Area*", prepared for West Kitikmeot/Slave Study Society, April 1999.

"*Towards a Better Tomorrow: A Non-Renewable Resource Strategy for the Northwest Territories*", GNWT Financial Management Board Secretariat, November 2000.

"*The Slave Geological Province: Transportation and Economic Development*", The Conference Board of Canada, 2001.

"*2000 NorthwesTel Annual Report*", NorthwestTel, 2001.

"*2001 NWT Socio-Economic Scan*", NWT Bureau of Statistics, May 2001.

Appendix C: Acknowledgements

The Conference Board would like to thank the following groups for their help in developing this report. Particular thanks are owed to Resources, Wildlife and Economic Development, without whose co-operation and assistance this report would not have been possible.

Aboriginal Summit

BHP Diamonds Inc.

Bureau of Statistics, GNWT

Canadian Association of Petroleum Producers

DeBeers Canada

Department of Finance, GNWT

Department of Indian Affairs and Northern Development

Department of Transportation, GNWT

Diavik Diamond Mines Inc.

Ekati Diamond Mine

Mackenzie Valley Aboriginal Pipeline Corporation

Mackenzie Valley Environmental Impact Review Board

Miramar Mining

NWT Chamber of Commerce

NWT Chamber of Mines

NWT Construction Association

NWT Manufacturers Association

Paramount Resources

UNP 03-0006

255 Smyth Road, Ottawa, ON K1H 8M7 Canada
Tel. (613) 526-3280 • *Fax* (613) 526-4857 • *Inquiries* 1-866-711-2262