INUIT TAPIRISAT OF CANADA

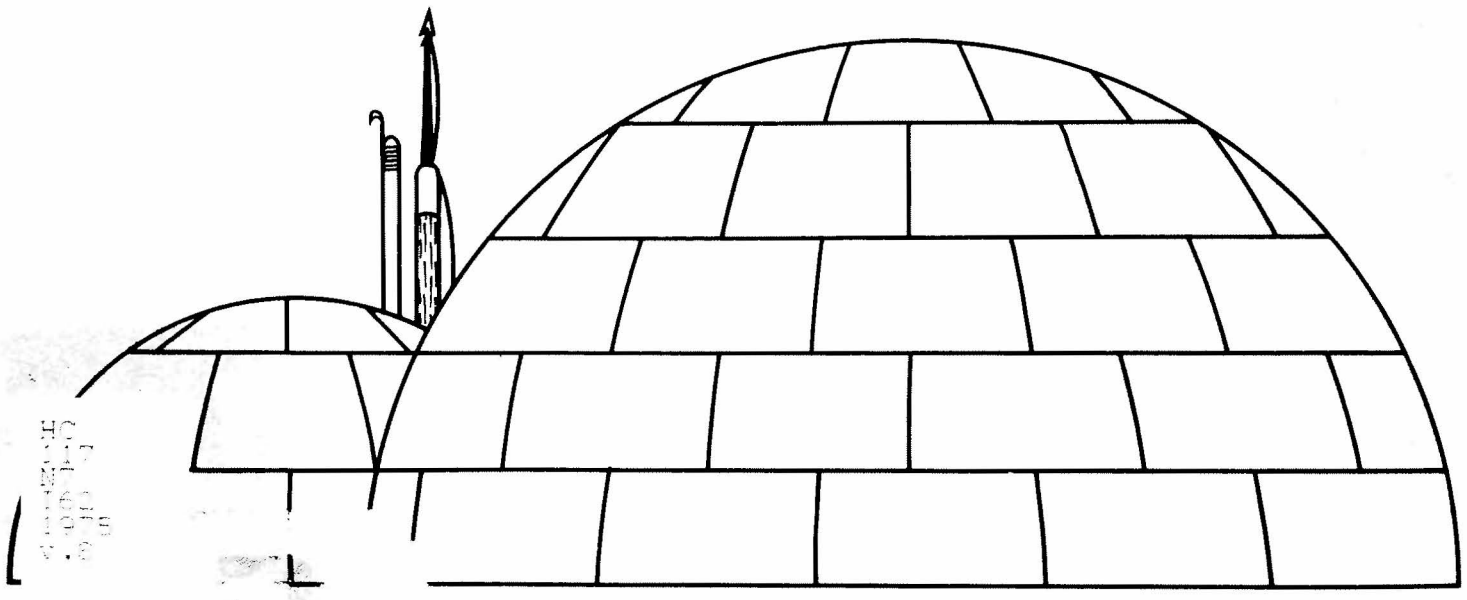
RENEWABLE RESOURCES PROJECT

8

VOLUME

THE SOCIO-ECONOMIC IMPACT OF NON-RENEWABLE RESOURCE DEVELOPMENT ON THE INUIT OF NORTHERN CANADA

DONALD MANN



PREFACE

The Renewable Resources Project is one of three research projects conducted by Inuit Tapirisat of Canada as part of its overall land claims research. Along with the Inuit Land Use and Occupancy Project and the Non-Renewable Resources Project, this research was commissioned to assist in the development of a comprehensive land settlement for Inuit lands in the Northwest Territories and Northern Yukon.

The Inuit Land Settlement Proposal, Nunavut, was presented to the Federal Cabinet on February 27, 1976. Readers of these reports are urged to study the Nunavut proposal to gain a full understanding of the Inuit position.

The Renewable Resources Project was under the overall direction of Dr. Gordon Nelson, Dean of Environmental Studies, University of Waterloo. The views expressed in these reports are those of the authors and not necessarily of Inuit Tapirisat of Canada.

Impact of Mining and Hydroelectric Projects and
Associated Developments on Arctic
Renewable Resources and the Inuit

Consultant and Editor

J. C. Day

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PREFACE

This report, The Socio-Economic Impact of Non-Renewable Resource Development on the Inuit of Northern Canada, is one of a series concerning impacts of mining and hydroelectric projects. It is prepared to assist the Inuit Tapirisat of Canada in the forthcoming Land Claims Settlement with the Canadian Federal Government.

The examination of impacts is divided into four parts:

Biophysical Impacts of Hydroelectric Developments in the Arctic by Richard J. Turkheim,

Environmental Impacts of Arctic Oil and Gas Development by Si Brown,

The Impact of Mining on the Arctic Biological and Physical Environment by Philip van Diepen, and

The Socio-Economic Impact of Non-Renewable Resource Development on the Inuit of Northern Canada by Donald Mann.

The documents present a summary of selected literature on each subject. Inasmuch as each of the topics reviewed is immense, and in most cases scientific knowledge of the consequences of development is imperfect, the conclusions should be regarded with caution. The reports attempt to highlight areas of ignorance and potential danger which could prove significant for Inuit welfare. In light of their exploratory nature, the documents should be read in the sequence noted above as material presented in the first three companion volumes is complementary. It is important to realize that Turkheim's report

presents the first summary of hydroelectric potential in selected Arctic study areas and a synthesis of biological and physical impacts related to hydroelectric dams. Mann's report covers the socio-economic impacts associated with the biophysical changes explored by Turkheim, Brown, and van Diepen.

It is intended that these reports will be examined in conjunction with the renewable resource and other studies being conducted for the Inuit Tapirisat.

J. C. Day holds a B. Sc. degree in geology from the University of Western Ontario and a Ph. D. degree in geography (resources management) from the University of Chicago. He is currently Associate Professor of Geography, Faculty of Environmental Studies, The University of Waterloo. Within the general field of resource management, Dr. Day is especially interested in environmental impact or project assessment. In this context he has done research on the Rio Grande, U.S.A., The Parana, South America, and various reservoir and drainage projects in Ontario. He worked for a number of years in the North as a geologist and has been a consultant for or grant recipiant from the federal Department of Environment, Ontario Hydro, Canada Council and the National Research Council. Dr. Day is the author of two books and numerous scientific articles.

Donald Mann holds a B.A. (Honors) in geography from the University of Western Ontario. He is currently completing an M.A. at the University of Waterloo. In general he is interested in cultural ecology; more specifically he has done research on ecological approaches to land use and planning problems, notably in Pacific Rim National Park, Vancouver Island, and Rondeau Provincial Park of Ontario. He has a strong interest in environmental impact analysis where that term includes the effects of institutional, technical or other changes on socio-economic as well as biophysical factors.

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2.2-2.3 Many of the deleterious effects of Inuit-Kabloona interation result from wide differences in social goals, values, and technology. By and large, the rigid, aggressive Kabloona culture has economically dominated the ecologically superior Inuit. On a global basis this phenomena has always been the case, when different cultures confront one another.

3.2.1- Where cultural interaction has been intense, Kabloona activities have shattered the Inuit culture and economy by various means. The present widespread poverty and unemployment in the north largely have been caused by the Kabloona.

*Any non-native northerner (Vallee, 1962).

3.2.1-3.2.2 Employment often has been proposed as a panacea for northern unemployment and poverty. But this is probably incorrect as most forms of employment likely would expand and entrench existing problems. And in particular, the non-renewable resource sector has a poor chance of aiding the Inuit, even in the short run.

3.2.1-3.2.2 Employment from non-renewable resource extraction is dropping (per unit production), short-term, and unstable. Also low Inuit education levels, discrimination, and poor knowledge of English tend to inhibit successful, long-term employment.

3.2.3 Increased income from non-renewable resource employment could assist Inuit consumption of better food and clothing. However, it could also enable the purchase of liquor, drugs, and junk foods.

3.2.4 Economic benefits of increased income to the Inuit are circumscribed by transfer payment losses, imputed income losses, the low income multiplier, savings, and investment, and inflation in the North.

3.3.2 Non-renewable resource development will affect northern demography in several ways. The total Inuit population will increase rapidly, yet as a percentage of northern residents it will decrease due to an influx of non-natives. Also sex and age ratios will change, possibly decapitating traditional settlements by inducing young people to move to resource towns.

3.3.3.1 A dramatic increase in personal and property crime rates is expected to accompany increased non-renewable resource development.

3.3.3.2 Although better medical services and facilities are generally associated with development, medical health could deteriorate due to unfamiliar and inadequate housing, drugs and alcohol, infectious diseases, nutrition changes, and social stress.

3.3.4 Changing social and community structures will introduce a rigid heirarchy into the traditionally egalitarian Inuit society. The Inuit will be found at the base of the social and economic scales due to discrimination and inability to compete effectively in Kabloona employment enterprises. It is likely Inuit women will be the greatest victims of socio-economic lifestyles in resource towns.

3.3.4.2 The origins and structures of resource towns tend to inhibit the formation and stability of community associations. Native leadership roles will change and be ill-defined vis-a-vis conditions in traditional Inuit settlements. Social guides will be eroded and the Inuit will lack a strong identity with most settlements. These changes will be deleterious for native peoples.

3.4.2 Non-renewable resource development will continue to erode Inuit religion and language, contributing to cultural disintegration.

3.4.1 Inuit value systems will change, the effects of which are widespread and amorphous. Erosion of the sharing ethic, for example, could reduce or preclude the viability of the traditional economy. Family solidarity, respect for seniority, and the value of acceptance will also deteriorate in importance.

4.1 The most dominant factor of Inuit-Kabloona interactions is the increasing Inuit dependence. Inuit are losing control of their affairs through continued association with the Kabloona.

4.1.2-4.1.3 Two scenarios indicate possible Inuit futures. The most likely one is a continuation and acceleration of present trends. However, if the Inuit become more assertive and the Kabloona more willing to entertain Inuit social goals, conditions could change

for the better. But the former circumstances are more likely than the latter.

Recommendations

It would be relatively simple to make a series of recommendations for improvement of Inuit welfare in Northern Canada. Better education, housing, health facilities, and greater employment opportunities immediately come to mind. These adjustments, however, are not solutions but "band-aids" modifying effects rather than causes of native problems. While easing some of the symptoms of cultural conflict they embody no long-term solutions.

Rather, the root causes of Inuit cultural deterioration must be identified. The natives must gain control over the northern social economy. They must become more independent and economically diversified. Meanwhile northern development, which to a certain extent appears inevitable, must be planned and controlled. And economic growth should be staged to minimize the boom-bust nature of resource-based economies.

The natives economy should become more diversified with Inuit utilizing both renewable and non-renewable resources. The government could support the traditional Inuit economy by "grub-staking" programs, floor-prices for fur, and strict ecological controls to preserve habitats. Inuit co-operatives could be strengthened with government assistance to harvest fish and mammals, to form artists guilds, and so forth.

It appears that non-renewable resource development is a very poor solution for Inuit economic difficulties. It is recommended

that this be regarded as but one minor alternative for a small proportion of the native population. Better programs for apprenticeship, education, and manpower mobility should be established for natives who want non-renewable resource wage employment. It is felt, however, that massive programs attempting to draw Inuit into the energy and mineral extraction industries are unwise given the short-run nature of these developments and associated, negative, social impacts.

CHAPTER 1

INTRODUCTION

1.1 Background

The Inuit, the most northerly group of Canadian indigenes, came to North America 4,000 to 6,000 years ago according to anthropological and archaeological estimates (Jenness, 1964, 6). They arrived in Alaska by crossing the Bering Sea by boat or land bridge and by 1,000 A.D. spread as far east as Greenland (Stevenson, 1969, 182).

The approximate territory occupied by the Inuit is shown in Figure 1. It is essential to realize that they are a nomadic people and have at times travelled and lived far beyond the territory portrayed.

The Inuit are a circumpolar race (Fig. 1). Today they number about 60,000 with approximately 12,000 in Canada (Rowley, 1964, 11). Before first contact with the Caucasian, the Canadian Inuit population is believed to have reached 20,000 to 25,000. The two main causes for the population reduction are: the depletion of the large northern-mammal population (the mainstay of the Inuit diet); and the introduction of lethal diseases. Prior to contact with Caucasians, the Inuit were an isolated people living in small camps. They had little immunity to introduced diseases. In the 1930's and 1940's, approximately one tenth of the northern native population was killed by smallpox, measles, and tuberculosis (Mowat, 1951, 109). Concomitantly, the bowhead whale was hunted to the brink of extinction and the caribou were seriously depleted (Wolforth, 1971, 40; Jenness, 1964, 14). This was due to the excesses of Scottish and American whalers and the use of rifles by the Inuit hunters.

Inuit population reduction due to northward Caucasian migrations

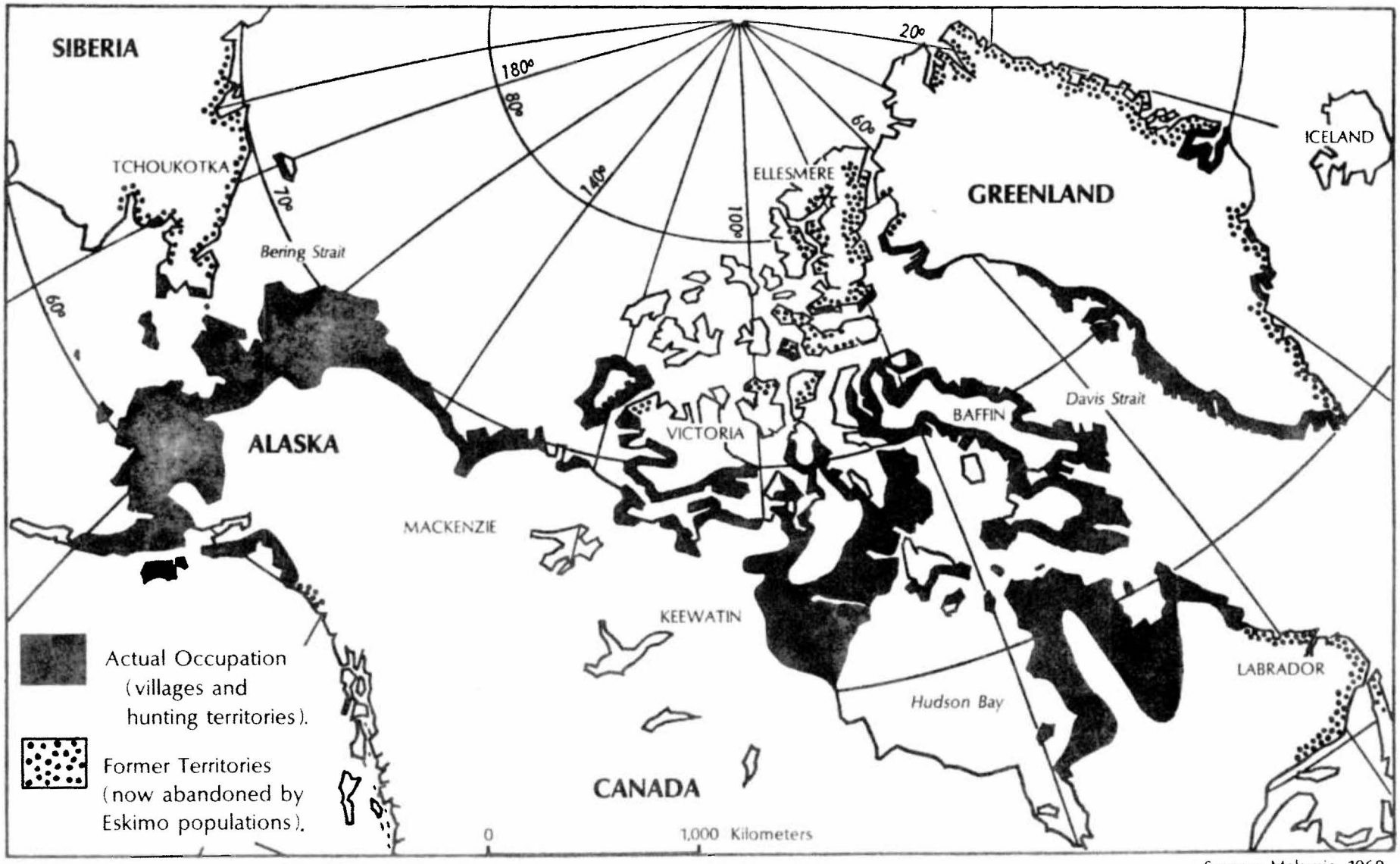

Figure 1. Arctic Territory Inhabited by Eskimo Populations.

Source : Malaurie, 1969.
Translated from French.

is but one example of the many changes the culture has undergone in the last 150 years. Missionaries, explorers, fur traders, whalers, the R.C.M.P., and others have all influenced the Inuit culture to some degree; this continues today at an accelerating rate.

This paper examines one aspect of Inuit-Caucasian relationships which has recently attained overriding importance for the Inuit. It concerns the socio-economic impact of northern Canadian non-renewable resource development on the Inuit population. Southern Canada is looking northward for new energy and natural resource supplies. It is inevitable that such developments will impose a completely new set of opportunities and dangers on the native peoples.

Since the industrial revolution, the appetite of the developed world for raw materials has been insatiable. Demand for non-renewable resources has grown exponentially in quantity and variety. The traditional energy source, coal, is now accompanied by oil and natural gas, hydroelectric power*, uranium, and its various isotopes. Similarly, iron--still the backbone of industrial development--has been joined by base metals such as nickle and tungsten, that are used in producing lightweight or high-strength alloys. Moreover, the demand for precious metals has been heightened by monetary crises, electronic developments, and increased affluence in the western world.

As a consequence of a vastly increased demand for minerals and energy in both volume and variety, the industrial nations of the world have had to increase the efficiency of extraction techniques and search further afield for the non-renewable resources.

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*Although not strictly a non-renewable or mineral energy resource, hydroelectric development is included in this context for the purposes of this paper because its socio-economic effects are similar.

Until recently, mineral and energy development in the inaccessible areas of supplying nations, such as Northern Canada, were greatly constrained by transportation costs, climatic and bio-physical factors, and lack of resource inventories. Some exceptions to this trend come to mind such as the Yukon Gold Rush, Yellowknife Gold Mining, Norman Wells oil development, and South Baffin Island mica mining. But, these were activities in search of precious metals or conducted by tenacious entrepreneurs; large-scale base metal, oil, natural gas, and hydroelectric production remained in Canada's southern regions.

However, profitability of base metal and energy production changed recently. Increasing demands for the quantity and variety of industrial inputs, coupled with diminishing supplies, has driven prices up. It is now economically feasible to tap many mineral and energy sources north of the 60th parallel and in some cases in the Arctic Archipelago.

Expansion of the resource-extractive sector into Canada's north has introduced significant social, cultural, and economic changes into traditional Inuit lifestyles. These changes will have far-reaching impacts on the natives for several reasons. They introduce different, and often times incompatible, land uses into Inuit territory. Perhaps more importantly, the resource development sector brings with it social, cultural, and economic components of the southern Canadian milieu. If past examples are any indication, resource development in the north introduces and intensifies the conflict between the Inuit and the Caucasian lifestyles.

Thus, the movement of the resource development industries into the north is perceived to be more than a competing land use. The

resource industry is based on southern economies and is framed in the southern Canadian social system. In the past, when the two cultures have met, the Caucasian socio-economic system has dominated, often with deleterious results for the Inuit.

1.2 Objectives

There are few comprehensive studies of the impact of Caucasian or Kabloona society on northern native lifestyles. From discrete examples and case studies, this paper attempts to evaluate the impact of non-renewable resource development on the Inuit.

A socio-economic impact statement is prefaced by an assessment of cultural differences in the interpretation and utilization of natural resources. The rationale for this methodology is that socio-economic change revolves around the Kabloona desire for non-renewable northern resources; it is the major reason for northern development. Moreover, Kabloona and Inuit interpretation and utilization of these resources is the cultural backdrop to impending socio-economic changes.

Socio-economic change is analyzed by assessing past, present, and future disturbances in Inuit society as a result of the various stages of non-renewable resource development. A matrix is used as an organizational and conceptual aid to understanding the complex problem. Objectives of the paper are to:

i) assess bicultural differences in the interpretation and utilization of natural resources and implications for socio-economic change.

ii) evaluate past and present changes in Inuit society as a result of non-renewable resource development.

iii) predict future changes based on extrapolation of present trends, and;

iv) identify linkages, whenever possible, between "causes" of socio-economic change and effects of change.

1.3 Constraints and Qualifications

Three difficulties constrain an evaluation of the socio-economic changes in Inuit culture due to non-renewable resource development.

The Kabloona has been active in the Arctic for over 100 years and much change was experienced prior to non-renewable resource development. The R.C.M.P., whalers, fur traders, missionaries, explorers, and the federal government all introduced changes prior to energy and mineral extraction expansion in the north. Therefore, socio-economic change has a long history and the inertia and direction of change has to some extent been predetermined.

The study area is large and it varies considerably in spatial characteristics such as population density, development attractivity, and so forth. Therefore, socio-economic changes will vary over space and time.

Often socio-economic research encounters the problem of the inseparability of impacts. The north is being developed quite rapidly and two or more development changes may contribute to a specific effect; sometimes it is impossible to attribute a given effect to a single cause.

CHAPTER 2

KABLOONA AND INUIT: CULTURAL DIFFERENCES IN THE INTERPRETATION AND UTILIZATION OF NATURAL RESOURCES

> In a modern world where men are dedicated to exploiting to the utmost the natural resources of this planet--a dedication that is stimulated by the very numbers of men on earth--the point of view exemplified by Faraday is necessarily uppermost. It could hardly be otherwise. Yet one cannot forget the bearded figure of Darwin watching quietly from the shadows. -Alexander Spoehr-

2.1 Introduction

Cultural differences in the interpretation and utilization of natural resources are the fundamental underpinnings associated with the interaction of a western, technological industrial society and a pre-literate, technologically-simple civilization (Hills, 1970, 44; Spoehr, 1956, 99). In the Canadian Arctic, two culture groups--the Inuit and the Kabloona--are attempting to use the same landscape for different goals and with antipodal technologies. Acculturation of the Inuit is a result of succumbing to the aggressive and competitive Kabloona as the two cultures attempt to utilize various components of the resource landscape. Cultural contact centers around resource interpretation and utilization. Changes or impacts induced by expansion of the mineral and energy extraction sector into a pre-technological society are the deep-seated but amorphous causes of cultural, social, and economic change.

2.2 Terms of Analysis

Three frames of reference will be used to analyze cultural differences in the interpretation of natural resources by the Inuit

and the Kahloona: natural resources and social goals; natural resources and social values; and natural resources and social technology.

Social goals is a broad term embracing the concepts of strategies, institutional arrangements, and social guides. Strategies are considered to be societal aims, goals or objectives, and the general means of achievement (Nelson, 1973, 352). They can be outlined specifically or may have evolved over a lengthy period and hence are implicit in a society.

Institutional arrangements are structures, forms, or means of guiding human behaviour towards a social goals of land or resource use (Nelson, 1973, 352). They may be rules, mores, taboos, laws, legislation and so forth. They may be implicit or explicit and rigorously or informally applied.

Social values are considered to be the summation of perceptions, attitudes, and values. Perceptions refer to group or individual cognitive impressions of a stimulus or situation (Nelson, 1973, 353: Schiff, 1971, 8). Attitudes generally refer to an individual's beliefs, feelings, or awareness of an object (Schiff, 1971, 8: Nelson, 1973, 353), while values are more fundamental beliefs that may guide or influence perceptions and attitudes. Values are things, concepts, or ideals that are held to be important in a society (Nelson, 1973, 352-353: Schiff, 1971, 7-8).

Social technology refers to the general orientation of the means of production, survival, and livelihood in a society. Ellul (1964) states that the "technique" of the western industrial society is efficiency and standardization. The concept of technique is equivalent to social technology.

2.2.1 Social Goals

The social goals of the Inuit are evidenced by the general characteristics of the traditional economy. Survival in the harsh tundra environment has been achieved by a subsistence economy operating in a socialistic manner. The resources provided by the natural environment were taken as needed, generally on a day-to-day or short-term basis. The economy operated with man as an intimate part of the natural ecosystem; short-term goals were determined by immediate needs for food, clothing, and shelter; long-term goals were simple continuence and survival.

The long-term goal of continuence and survival was assured by a subsistence economy which in turn guaranteed a constant, long-run return from the land and water ecosystems. Sharing or communal living yielded an equal distribution of costs and benefits for the collective good and comfort of "the People".

In Inuit society, institutional arrangements and social guides are amorphous and flexible. The society has no formalized or codified laws, regulations, penalties, or legal system. The political system was anarchistic and accordingly, social guides were simple, flexible, and variable. The social guides were developed, applied, and enforced by the people at large. For example, penalties ranged from ridicule and gossip to ostracism or in some cases execution (Mowat, 1951, 220-234). Resource conservation was not legislated but implicit in societal goals. Goals and means of achievement may be summarized as being "limited"; limited to immediate needs thus insuring long-term survival.

The strategies and institutional arrangements for southern industrial society as a whole, and the non-renewable resource development sector in particular, are dramatically opposed to those of the

Inuit. The energy and raw materials of the north are being exploited by a sector of a society that is a surplus economy, dedicated wholly to economic growth. The goal is not achievement of a steady state or dynamic equilibrium, but the creation of a surplus. And the surplus is reinvested--a positive feedback mechanism--to move the social economy as far away from equilibrium as possible; equilibrium or zero growth is implicitly bad.

The goal of surplus is achieved in a capitalistic system, where resources are utilized by individuals or specifically defined groups of individuals, for commercial rather than consumptive purposes. Innovation is stimulated by material wants and profit desirability; concomitantly, production of goods is stimulated by both need and unnecessary and cultivated wants.

Goals are short-term and entail the creation of as large a surplus as possible in the shortest period while garnering all possible benefits and distributing costs elsewhere. Most economic activities are expanded until marginal revenues equal marginal costs outside of any concept of sufficient returns. Thus, the goals may be termed unlimited.

Institutional arrangements are formalized in a rigid democratic framework and often codified and written. Laws, for example, are developed by Parliament, enforced by the police, and applied by the judiciary. Laws, regulations, taxes, and various social guides are complex and inflexible. Contrary to the Inuit society, resource conservation is historically recent and necessarily legislated and enforced. Spoehr (1956, 100) states that conservation is largely a feature of western society; less technologically advanced societies have an appreciation of nature built into their lifestyle.

It is evident that the social goals of the Kabloona and Inuit are often diametrically opposed insofar as natural resources are concerned. The strategies and institutional arrangements of the two groups for resource and land use appear to be in conflict: subsistence and surplus, capitalist and communal, dynamic equilibrium and growth and long and short time scales. Yet, both groups desire to apply their social goals to the same lands. The result will be conflict and competition. If past events are valid indications, the Kabloona will achieve and maintain primacy; for the Inuit confusion, frustration, and apathy will undoubtedly develop. It is difficult to assess the precise implications of imposition of radically different societal goals by aliens on a culture that has existed for over 6,500 years.

Moreover the social guides, or general means of achievement of goals, are equally opposite in terms of specificity, flexibility, and complexity. The impact of new institutional arrangements dedicated to supporting Kabloona strategies or goals has confused the Inuit in the past and is likely to coninue to do so in the near future. For example in the Mackenzie Delta, Gulf Oil Canada employed 54 Inuit from the Coppermine area as workers on oil exploration rigs in 1972 and 1973 (Hobart and Kupfer, 1973, 1). It was found that even though the Inuit had been carefully coached as to what exploration work entailed, few of them understood the work goals. This problem was indicated by discontinuity when work gangs were assigned several tasks. When instructed to do a series of assignments, the Inuit would do the first quickly and adequately, and then stop and wait until receiving further instruction from the superintendent. Hobart and Kupfer (1973, 12, 36, 66-68) suggest this is largely due to a lack of understanding of the

overall "game plan" of oil exploration.

2.2.2 Social Values

The Inuit have a unitarian perception of man, land, and resources for they consider themselves to be an integral part of the natural environment:

> The native peoples perception of their lands...is opposite to that of the non-native exploiter. The native person's perspective is rooted in an autochthonous culture--he is part of the very land he occupies--the culture of food gathering, tribal society. If this culture is changing due to outside forces, the consciousness as yet remains. Many Inuit living today were born in the then untouched traditional culture. (Cumming, 1973, 214)

Natives perceive the land as an ancestral home; communal resources that always will be there. This prevailing attitude leads toward stewardship rather than ownership concepts: the land and resources may be likened to a bank account and one survives on the interest while not affecting the principle. This view parallels Darwin's assessment of man's place in nature:

> ...man as a part of the huge and dynamic biocoenose, of which man was only a small part actually not very different from the other parts and subject to the same processes and regularities. (Spoehr, 1956, 100-101)

The land and its game resources are of significant value to the Inuit; their cultural roots are found in these resources although change seems inevitable.

> With the increasingly rapid transformation of a fur economy to a wage economy based in the near future upon the oil and gas industry, the practical importance of game resources will tend to diminish, but the cultural importance will increase. This is because the use of game resources is a most significant means by which native people can continue to have some sense and experience of the culture and heritage of their ancestors. (Cumming, 1973, 225)

Navsmith considers the value of land to northern natives in another

way: "the intermediate value of the Flats (Old Crow Flats) lies simply in the knowledge that they do exist intact" (1971, 25).

The resource developers come from a culture with an estrangement from nature and a homocentric viewpoint. Nature is mentally divided into component parts such as land, water, flora, and fauna with man existing as a distinct and separate entity: "an egocentric man in a homocentric world" (Spoehr, 1956, 100). Land is perceived as something to be owned and used; it may be bought, sold, leased, surveyed, subdivided, and so forth. The separate perception of resources is indicated by the distinction of surface land resources--claimed by the Territorial Government--and sub-surface resources--claimed by the Federal Government.

The prevailing attitude towards land resources is often called the principle of highest order use (Usher and Beakhurst, 1973, 3). This attitude is found throughout western industrial society and Carl Sauer has stated that "the concept of natural resources is largely derived from our own societies ceaseless attempts at finding new and more intensive uses for the raw materials of nature" (Spoehr, 1956, 93).

The resource developers have no cultural attachment to the land nor any long-term socio-economic investment. The attitude of southern entrepreneurs has often been summarized as "get in, get rich and get out". Lack of commitment to the land cannot help but be reflected in attitudes towards the native peoples.

2.2.3 Social Technology

> Interest in specific natural resources and the uses to which they are put is greatly conditioned by the nature of the technology imposed on such resources. Technology is in itself a part of man's culture and the interpretation of specific resources cannot be understood except as a facet of human culture.
>
> (Spoehr, 1956, 94)

Inuit social technology is "soft" according to Robin Clark's UNESCO classification system (Junqk, 1972, 8). It is ecologically adapted to natural resources with low energy consumption and little, if any, pollution. The means of production are labour intensive involving little specialization and emphasizing artisanship. Production is decentralized, based on nomadic hunting and food gathering, and it incorporates the local culture. The technological processes are simple and well adapted to the resource base.

Technology is not based on scientific research, but on intimate empirical knowledge of the resources base. Yi-Fu Tuan (1974, 34, 35) reveals that Aivilik Inuit are able to draw incredibly accurate outlines of Southampton Island despite the fact that they have never seen aerial photographs or topographic maps of the area.

The units of production--camps--are generally small and seldom include more than 10 households. These units are intradependent but not interdependent. Resource exploitation is based on diverse utilization of large mammals, small mammals, fish,and birds.

The Kabloona non-renewable resource development sector is ecologically dangerous, emits many pollutants, and recycles few by-products. The means of production may be summarized as highly specialized, capital intensive, centralized,and based on quantity. The processes are complex and involve a great deal of interdependence of productive units.

The quantity of production is often more important than quality, and resource utilization is often based on principles developed by an elite community of scientists and others. Generally resource development is "monocultural". Many of Canada's frontier resource towns are based on this principle of utilization of a single resource (Robinson, 1962).

It is evident that the technological interpretation of natural resources is radically different for the Inuit and the Kabloona. The influence of western social technology and natural resource utilization will have wide-ranging impacts on the traditional lifestyle. Urban centers or company towns, for example, are the settlement facilities generally associated with mineral development. This is not a traditional feature of Inuit society where small intradependent camps roamed the tundra. Similarly the principles of wastage and quantity which characterized Inuit Mackenzie Delta hunters during the introduction of the rifle and under the influence of Scottish and American whalers (Wolforth, 1971, 40), resulted from the adoption of Kabloona social technology by the Inuit hunters.

2.3 Summary

Assuming an increasing Kabloona presence in the Arctic and continued domination of the Inuit, it is likely that the Inuit social goals, structures, and technology will continue to be changed or replaced. Erosion of these cultural phenomena provide the environment in which many of the more specific effects of northern development occur. It cannot be stated that change or replacement of the traditional interpretation and utilization of natural resources causes some of the detrimental effects associated with development. For causes are multivariate and relationships can only be established as functional at the best of times. However, a society which is so intimately and immediately involved with natural resources and the land certainly will be greatly affected by the influence of dramatic changes in natural resource interpretation and utilization techniques.

Continued northern resource development will have some very precise impacts. The Inuit have an entirely different set of social

goals in relation to the natural environment which are often incompatible with Kabloona goals. For Inuit who attempt to integrate into the Kabloona social economy, the different social goals can be effective constraints. If the Inuit does not understand the "rules of the game" (the goals and means of achievement), entrance into a competitive and complex economy and society could be extremely painful and difficult. At the same time, Inuit who wish to retain their ancestral culture and remain in the hunting and trapping economy will encounter reduced opportunities. They must compete with the Kabloona for the use of the northern resources; history indicates that the Kabloona can be ruthless competitors.

The Inuit are becoming increasingly dependent upon the Kabloona as a result of northern development. Traditionally, the Inuit functioned in a society of small intradependent but non-interdependent camps or groups but development has made these people socially, psychologically, and economically dependent upon an alien socio-economic system (Vallee, 1966, 46). Inability to control one's own destiny can lead to frustration, apathy, and spiritual pathology.

In summary, lack of understanding and dependency are the two most important influences on socio-economic change in the Inuit of northern Canada. These trends can cause, or contribute to, some of the socio-economic developments analyzed in the following sections.

CHAPTER 3

SOCIO-ECONOMIC IMPACT OF RESOURCE DEVELOPMENT IN THE NORTH

3.1 Introduction

Given such an amorphous and extensive problem, it is necessary to develop a analytical framework. A matrix was constructed in which development influences are placed on the vertical axis and the Inuit culture on the horizontal axis (Fig. 2).

The subject on each axis is further divided to facilitate analysis and comprehension. The rationale behind each subdivision is that: influences of development in non-renewable resources may be considered as a series of phases: exploration and planning; construction and extraction; benefication, maintenance, and transportation; termination of activities and closure; and rehabilitation or rejuvenation. However for the purposes of this analysis, only two development stages are used: development and operation; and closure and rehabilitation. Stage one includes all developmental processes such as pipeline construction, hydroelectric dam building, mineral exploration and extraction, and ore benefication or upgrading. And stage two, closure and rehabilitation, considers the inevitable closure and abandonment of all non-renewable resource activities and implications for rehabilitation.

Although it would be more accurate to analyze development

INUIT CULTURE

	Economic Aspects				Social Aspects					Cultural Aspects		
	Employment	Income	Savings, Investment and Finance	Inflation, Prices, Demand and Supply	Demography	Social Pathology		Social and Community Structure		Social Values	Religion	Language
					Totals Spatial Change Non-spatial Change	Crime	Health	Kinship and Family Leadership, Elitism, Stratification, Castes				
Development												
Boom												
Exploration												
Extraction Upgrading												
Construction												
Transportation												
Bust												
Scaling-down												
Closure												
Rehabilitation												

influences under more specific stages, such as the five described previously, it is outwith this assessment to do so. The magnitude of developmental influences varies from stage to stage depending upon the type of development. The greatest mining impact is during extraction; the greatest pipeline development impact is during construction, and the greatest hydroelectric development socio-economic impact is during construction. In all stages, however, there is the consistent boom-bust character of rapid development followed by the inevitable slump. The two stages considered here are the most important socio-economically and accordingly they are used in the evaluation.

Aspects of the Inuit culture are subdivided into selected components on the horizontal axis (Fig. 2). The categories are somewhat arbitrary and are selected for conceptual and analytical convenience. This subdivision suggests that socio-economic changes are discrete which of course is false, as all socio-economic changes are intimately intertwined. However, it is too difficult to attempt an holistic analysis of socio-economic change and as a result this categorization is adopted.

Non-renewable resource development may be considered to be a cause of socio-economic change in Inuit culture. However, the horizontal axis, the Inuit culture and the changes in the several subheadings such as employment, income, and family structure, cannot simply considered as effects. The relationship between causes and effects is often hazy and ill defined. In Inuit society, for example increased disposable income can be caused by mineral development. Also, alcoholism can be indirectly caused by increased disposable income.

However, it cannot be said that mineral development causes alcoholism for two reasons: the relationships between the "cause" (development) and the "effect" (alcoholism) is multivariate and also the cause-effect relationship is nullified by an intervening variable: disposal income. Development and associated wage employment cause an increase in disposable income in many cases. In turn, an increase in disposable income is a contributing factor to alcoholism. Thus, a cause leads to an effect and the effect may, in turn, influence or "cause" a further effect. Therefore, socio-economic changes in the category sub-headings of the Inuit culture are not simply effects of mineral development but rather changes associated with development.

3.2 Economic Aspects

A large portion of the impact assessment is devoted to economic aspects of non-renewable resource development in the north. Economic aspects are sub-divided into four sections: employment; income; spending, saving and investment; and prices, demand, supply and inflation.

3.2.1 Employment

For several reasons, no attempt is made to assess or predict the number of jobs that would be created by expansion of non-renewable resource development in the north. It is beyond the scope of this study to estimate the number of mines, gas, oil, and hydroelectric projects that are planned for the north and these data are not available. It would be essential to know the employment characteristics of each proposed project to undertake such a task. Moreover, where sufficient data are available, such as the proposed Mackenzie Valley Pipeline, employment projections have been carefully documented by

various agencies: Gemini North Ltd., the Environmental Social Program of the Department of Indian Affairs and Northern Development (DIAND), and the Pipeline Assessment Group (Interdepartmental Study Group, Government of Canada). Clearly, a large number of jobs will be created if proposed developments materialize. The Mackenzie Valley Pipeline alone will require an average of 5,000 to 6,000 workers during the three-year construction period (Gray, 1974, 46; Jamieson, 1974, 11).

Induced employment is the foremost economic aspect of northern mineral resource development. It is a direct effect of development which, in turn, can affect a series of changes in income, spending, saving, investment patterns, inflation, and prices.

A cursory examination suggests there is a definite need for additional employment in both the traditional and the wage economy sectors of the Inuit labour force (Tables 1 and 5). Considerable unemployment and underemployment exists in these areas (DIAND, Northern Economic Development Branch, Economic Staff Group, Environmental Social Program, The Regional Impact of a Northern Gas Pipeline, 1974, 4-1). Northern development supporters assert that since the Inuit need employment and resource developers need employees, possibilities for exploitation of this symbiotic potential exist:

> Government estimates of unemployment among the male labour force of the Mackenzie Delta Valley have ranged as high as 50 percent...The construction of one or more large diameter pipelines for oil and gas in the Mackenzie Valley offers the possibility of ameliorating this situation.
> (DIAND, Northern Economic Development Branch, Economic Staff Group, Environmental Social Program, Regional Impact of a Northern Gas Pipeline, 1974, 4-1).

Moreover, northern development employment is often cited as a panacea for poverty. Clearly, poverty is prevalent in the Inuit culture even

TABLE 1(a)

LABOUR FORCE BY NUMBER OF WEEKS ENGAGED IN SPECIFIC ACTIVITIES OR WITHOUT WORK

Activity, Region and Ethnic Origin	1-3 Weeks			4-17 Weeks			18-31 Weeks			32-45 Weeks			46-52 Weeks			Total Engaged in Each Activity			No Weeks		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Wage & Salary Employment																					
Arctic Coast																					
Eskimo	1	-	1	70	3	73	49	1	50	11	3	14	117	35	152	248	42	290	176	29	204
Baffin																					
Eskimo	52	4	56	205	18	223	141	11	152	94	11	105	257	44	301	749	88	837	164	41	205
Keewatin																					
Eskimo	N/Av.	N/Av.	85	N/Av.	N/Av.	124	N/Av.	N/Av	74	N/Av.	N/Av.	33	N/Av.	N/Av.	129	N/Av.	N/Av.	445	N/Av.	N/Av.	64
Mackenzie																					
Eskimo	10	2	12	58	7	65	46	2	48	15	2	17	87	43	130	216	56	272	52	11	63
Indian	55	5	60	290	17	307	124	6	130	49	21	70	161	98	259	679	147	826	317	56	353
Metis	1	1	2	20	3	23	18	6	24	19	11	30	126	48	174	184	69	253	32	8	40
Yukon																					
Indian	8	2	10	61	6	67	29	1	30	13	3	16	42	10	52	153	22	175	40	13	53
Metis	-	-	-	4	3	7	3	-	3	3	-	3	16	6	22	26	9	35	4	1	5
Hunting Trapping Fishing																					
Arctic Coast																					
Eskimo	1	-	1	21	-	21	75	1	76	29	-	29	60	-	60	186	1	187	238	69	307
Baffin																					
Eskimo	22	-	22	130	1	131	137	-	137	98	-	98	73	2	75	460	3	263	453	126	579
Keewatin																					
Eskimo	N/Av.	N/Av.	23	N/Av.	N/Av.	53	N/Av.	N/Av	61	N/Av.	N/Av	60	N/Av.	N/Av.	40	N/Av.	N/Av.	237	N/Av.	N/Av.	272
Mackenzie																					
Eskimo	-	-	-	19	-	19	18	1	19	4	-	4	35	1	36	76	2	78	192	65	257
Indian	11	-	11	134	1	135	89	-	89	28	-	28	154	1	155	416	2	418	580	181	761
Metis	2	-	2	6	-	6	8	-	8	4	-	4	11	-	11	31	-	31	195	77	262
Yukon																					
Indian	-	-	-	3	-	3	10	-	10	2	-	2	2	-	2	17	-	17	176	40	216
Metis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	10	40

Source: DIAND, Northern Economic Development Branch, 1974

(continued)

TABLE 1(b)

Activity, Region and Ethnic Origin	1-3 Weeks			4-17 Weeks			18-31 Weeks			32-45 Weeks			46-52 Weeks			Total Engaged in Each Activity			No Weeks		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Self-Employment																					
Arctic Coast																					
Eskimo	1	-	1	26	1	27	20	1	21	2	1	3	8	26	34	57	29	66	367	41	408
Baffin																					
Eskimo	61	7	68	192	15	207	69	4	73	26	3	29	15	18	33	363	47	410	550	82	632
Keewatin																					
Eskimo	N/Av.	N/Av.	60	N/Av.	N/Av.	97	N/Av.	N/Av.	25	N/Av.	N/Av.	16	N/Av.	N/Av.	36	N/Av.	N/Av.	234	N/Av.	N/Av.	275
Mackenzie																					
Eskimo	-	-	-	2	1	3	-	-	-	-	-	-	2	3	5	4	4	8	264	63	327
Indian	3	-	3	6	2	8	2	1	3	4	-	4	5	3	8	20	6	26	976	177	1153
Metis	-	-	-	3	-	3	4	-	4	-	-	-	5	1	6	12	1	13	204	76	280
Yukon																					
Indian	2	-	2	1	-	1	4	-	4	1	-	1	-	-	-	8	-	8	185	40	225
Metis	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4	3	1	4	27	9	36
Without Work																					
Arctic Coast																					
Eskimo	1	-	1	21	1	22	67	1	68	37	1	38	41	2	43	167	5	172	257	65	322
Baffin																					
Eskimo	4	-	4	52	6	58	94	9	103	52	11	63	59	22	81	261	48	309	652	81	733
Keewatin																					
Eskimo	N/Av.	N/Av.	9	N/Av.	N/Av.	55	N/Av.	N/Av.	60	N/Av.	N/Av.	48	N/Av.	N/Av.	18	N/Av.	N/Av.	193	N/Av.	N/Av	319
Mackenzie																					
Eskimo	-	-	-	13	-	13	48	-	48	51	7	58	19	10	29	131	17	148	137	50	187
Indian	1	-	1	77	19	96	157	12	169	214	12	226	162	31	193	611	74	685	385	169	494
Metis	3	1	4	18	5	23	22	8	30	13	2	15	9	7	16	65	23	88	151	54	265
Yukon																					
Indian	-	-	-	10	2	12	27	3	30	45	4	49	56	20	76	138	29	167	55	11	66
Metis	-	1	1	3	-	3	3	-	3	2	3	5	3	-	3	11	4	15	19	6	25

Source: DIAND, Northern Economic Development Branch, 1974

when imputed values such as furs and land food are considered (Haysmith, 1972, 2; DIAND, Northern Economic Development Branch, Regional Planning and Manpower Section, A Study of Income Distribution in the Mackenzie District of Northern Canada, 1972, 2-3).

In light of current employment and poverty levels of northern natives a cursory examination of mining, hydroelectric, gas, and oil development opportunities suggests the possibility of alleviating some social and economic problems using non-renewable resource exploitation as a vehicle of change. But such a conclusion ignores the reasons that Inuit are poor and unemployed.

Historically, the concepts of unemployment and poverty were unknown in the Inuit culture. In the traditional subsistence economy it was virtually impossible to be unemployed because work was inseparable from all day-to-day activities. There was always work to be done but not necessarily a specialized job. Similarly poverty, as such, did not exist in the traditional culture. Certainly, some people starved to death and wresting a living from the harsh arctic environment was never an easy task. But co-operative, communal activities preserved an egalitarian society: no one was any poorer than another. Thus, poor is a relative term, a Kabloona concept.

Poverty and unemployment were introduced with the expansion of Kabloona activities such as whaling and fur trading into Inuit territory. With increasing diffusion of the southern wage economy northward these problems increased. Indeed, "unemployment and underemployment and their related social ills have been chronic in the north for over a decade" (DIAND, Northern Economic Development Branch, Economic Staff Group, Environmental Social Program, Regional Impact of a Northern Gas Pipeline, 1974, 4-1).

Expansion of the wage economy made the Inuit dependent upon a socio-economic system which they did not understand and in which they could not effectively compete. However, the Inuit lived in the Arctic for well-over 6,000 years. Could a society riddled with poverty, unemployment, and underemployment have done so? Not likely.

Poverty and unemployment are new to the Inuit culture--outgrowths of the expansion of an alien social economy. For example, when the Scottish and American whalers came to Hershel Island, local Inuit were hired to provide caribou meat for the sailors. Reduction in the price of baleen,and the virtual extinction of the bowhead whale, induced the whalers to pull out. The game resources--whales, musk-ox, caribou--were seriously depleted and jobs for Inuit, as procurers of meat, ended suddenly. Results of the whaling experience may be summarized as poverty and unemployment; "Now at the century's end, having shattered the aboriginal economy, the whalers were departing, and the Eskimos no longer possessing their ancient skills or food resources had to build their economy on a new base or perish" (Jenness, 1964, 14; Wolforth, 1971, 40, 54). In Keewatin, fur traders encouraged the Inuit to trap white fox to trade for rifles, ammunition, food and clothing. In doing so, the Inuit became dependent upon Kabloona traders. They were employees. When the price of fox fur fell in the depression and post-war years, the traders left. Again the Inuit were unemployed and they were poor. They had rifles with no bullets, empty food caches, and poor clothing. In lieu of hunting caribou and fishing, they had trapped the white fox which had no food value and did not make suitable durable clothing (Mowat, 1951, 137-140).

Unemployment and poverty resulted from foreign intrusion into the Inuit territory altering the resource base and firmly tying the

natives to an unfamiliar economy. One should question, therefore, whether the Kabloona social economy--where poverty and unemployment are prevalent--can hope to reduce or alleviate poverty and unemployment in an Inuit culture where these features were historically absent? Stating that northern development is the solution to unemployment and poverty is akin to stating that the solution to the world energy crisis is pumping more oil. The solution is no remedy. It is merely an expansion of the problem. But, that is what growth and development are all about.

Theoretically, employment associated with northern development could be beneficial to the Inuit by providing the unemployed with jobs and by increasing disposable income which would make possible the purchase of better food, shelter, and clothing. However, several features of the mining, oil, and gas industries cast doubt on the viability of employment related to such developments. To eliminate unemployment, long-term jobs must be made available to all individuals. But non-renewable resource development does not appear to be a good method for achieving this goal. Industry is capital intensive and, due to rapid technological change, labour-capital ratios are continually decreasing. From 1957 to 1967, the value of Canadian mineral production virtually doubled while employment rose slightly more than one per cent (Tough, 1972, 71). Proportionately, capital-intensive industry does not create a large number of jobs to cure unemployment.

Moreover, past, present, and future mineral extraction projects are characterized by a short life expectancy. The Rankin Inlet Nickle Mine lasted only six years and the Nanisivik lead-zinc mine at Strathcona Sound has a projected time horizon of twelve years even with government

intervention insuring a doubling of the economic extraction period (Williamson, 1969, 286; Anon. Inuit Monthly, July-August, 1974, 59). If constructed, the Mackenzie Valley Pipeline will also have a short lifespan depending upon proven reserves of natural gas, pumping capacity, and looping. De Pape (1974, 40) illustrates that the pipeline life could be as short as 17 to 20 years. Moreover, most of the employment from the proposed pipeline will fall in the construction stage which will last three to four years at most (Jamieson, 1974, 111). Therefore, northern non-renewable resource development, like whaling and fur trading, is characterized by boom and bust. The boom period is generally short lived. For example, of all mines operating in Canada in 1957, 45% were defunct by 1967 (Tough, 1972, 71).

Boom-bust economic development is not conducive to alleviating unemployment and underemployment problems. At best, it is a temporary or stop-gap measure. More likely, it would aggravate employment problems by drawing many people to short-term jobs which will cease to exist when resources are depleted, or economic conditions preclude further mining. It is ironic that the initial cause of many northern economic ills is being suggested as a solution to its own creations by myopic individuals with little understanding of past and future realities.

Other factors will circumscribe the benefits of non-renewable resource development realized by the Inuit. Some Inuit do not wish to participate in the Kabloona wage economy and non-renewable resource development clearly will not alleviate economic problems for those people. In fact, ecological effects of development will make life on the land more difficult due to habitat and game destruction.

However, an increasing number of northern natives indicate a

preference for wage employment, especially in the lower Mackenzie Valley (Gemini North, 1974, v. 6, c. 2, pp. 151-156). Several factors may influence the employment participation of Inuit who wish to work in non-renewable resource projects. Racial discrimination, both overt and covert, often deters Inuit from gaining, or successfully holding, employment. Usher (1974) predicts such racial problems can be expected to increase as northern development continues.

Other factors which could influence Inuit ability to enter mineral development employment are lack of experience and education, lack of English knowledge and lack of knowledge of economic opportunities. Formal education levels of the Inuit are generally low (Table 2). Only three Inuit outside the District of Mackenzie completed Grade 13 and only 20 in the Mackenzie Region did so (Table 2). Twenty-five percent of the Mackenzie Inuit never attended school and over 50 per cent of the Arctic Coast, Keewatin, and Baffin populations have no formal training (Table 3). Consequently, it is unlikely that the Inuit could participate in skilled and high-paying employment roles unless steps are taken to alleviate this constraint. For example, Bissett (1970, 20-21) developed a list of potential jobs that could be filled by Inuit in the Baffin Island Iron Mines Project. Not one was of a supervisory nature. The most skilled positions available were truck drivers and heavy machinery operators. Most jobs were helpers, labourers, janitors, charwomen, and so forth.

Lack of experience could also deter the movements of Inuit into jobs higher in the employment hierarchy. No data are available on native work experience; however, few are familiar with a wage economy and fewer still are familiar with gas, oil, mining, construction, and associated fields. Lack of experience is reportedly a constraint to

TABLE 2

POPULATION 14 YEARS OF AGE AND OVER BY HIGHEST GRADE OF ELEMENTARY OR SECONDARY SCHOOL COMPLETED[a]

Region and Ethnic Origin	Never Attended			Kind. - Grade 5			Grades 6-9			Grades 10-11			Grades 12-13			Unknown			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Arctic Coast Eskimo	340	268	628	121	102	223	76	80	156	3	2	5	1	1	2	38	30	68	579	583	1,882
Baffin Eskimo	731	627	1,358	365	335	700	104	109	213	6	2	8	-	-	-	66	65	131	1,272	1,138	2,418
Keewatin Eskimo	339	342	681	210	206	416	47	48	95	8	5	13	1	-	1	7	8	15	612	609	1,221
Mackenzie																					
Eskimo	96	87	183	85	98	183	135	146	281	34	23	57	12	8	20	8	7	15	370	369	739
Indian	557	489	1,046	289	263	552	403	400	803	56	58	114	40	23	63	67	52	119	1,412	1,285	2,697
Metis	29	26	55	48	67	115	167	143	310	40	72	112	21	15	36	9	10	19	314	333	647
Yukon																					
Indian	89	102	191	54	47	101	149	147	296	31	36	67	7	9	16	6	3	9	336	344	680
Metis	5	2	7	8	9	17	22	17	39	11	16	27	2	5	7	1	2	3	49	51	100

[a]Source: DIAND, Northern Economic Development Branch, 1974.

TABLE 3

PERCENTAGE DISTRIBUTION OF THE POPULATION 14 YEARS OF AGE AND OVER BY HIGHEST GRADE OF ELEMENTARY OR SECONDARY SCHOOL COMPLETED[a]

Region and Ethnic Origin	Never Attended			Kind-Grade 5			Grades 6-9			Grades 10-11			Grades 12-13			Unknown			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Arctic Coast Eskimo	58.7	57.2	58.0	20.9	20.3	20.6	13.1	15.9	14.4	0.5	0.4	0.5	0.2	0.2	0.2	6.6	6.0	6.3	100.0	100.00	100.0
Baffin Eskimo	57.4	55.1	56.4	28.7	29.4	29.1	8.2	9.6	8.8	0.5	0.2	0.3	-	-	-	5.2	5.7	5.4	100.0	100.0	100.0
Keewatin Eskimo	55.4	56.2	55.8	34.3	33.8	34.1	7.7	7.9	7.8	1.3	0.8	1.0	0.2	-	0.1	1.1	1.3	1.2	100.0	100.0	100.0
Mackenzie Eskimo	25.9	23.6	24.8	23.0	26.5	24.8	36.5	39.6	38.0	9.2	6.2	7.7	3.2	2.2	2.7	2.2	1.9	2.0	100.0	100.0	100.0
Indian	39.5	38.1	38.8	20.5	20.5	20.5	28.5	31.1	29.8	4.0	4.5	4.2	2.8	1.8	2.3	4.7	4.0	4.4	100.0	100.0	100.0
Metis	9.2	7.8	8.5	15.3	20.1	17.8	53.2	43.0	47.9	12.7	21.6	17.3	6.7	4.5	5.6	2.9	3.0	2.9	100.0	100.0	100.0
Yukon Indian	26.5	29.6	28.1	16.1	13.7	14.8	44.3	42.7	43.5	9.2	10.5	9.9	2.1	2.6	2.4	1.8	0.9	1.3	100.0	100.0	100.0
Metis	10.2	3.9	7.0	16.3	17.7	17.0	44.9	33.3	39.0	22.5	31.4	27.0	4.1	9.8	7.0	2.0	3.9	3.0	100.0	100.0	100.0

[a]Source: DIAND, Northern Economic Development Branch, 1974.

successful employment in the Mackenzie Delta oil fields (Hobart and Kupfer, 1973, 129).

Knowledge of English, in the work situation, seems to be of variable importance. Stevenson (1968, 10) states that facility with English was an important factor concerning successful employment of Inuit on the Great Slave Lake Railway construction, whereas Hobart and Kupfer (1973, 129) feel that language was not a significant constraint to successful employment of Coppermine Inuit in the Mackenzie Delta oil fields.

Despite increasing acculturation, many northern natives cannot speak English (Table 4). Those unable to do so are distributed as follows:

Arctic Coast Inuit	52%
Baffin Inuit	61%
Keewatin Inuit	53%
Mackenzie Inuit	3%

(Table 4)

Despite conflicting opinions it appears to be a truism that lack of fluency in English reduces the possibility of attaining a job, holding a job, or advancement to a position of seniority for the Inuit.

Finally, Stevenson (1968, 10) reports that comprehension of northern economic opportunities is a positive factor to work adjustment in the construction of the Great Slave Lake Railway. Stevenson found that Inuit who appreciated the economic opportunities of wage employment seemed to fit well in the work situation.

The benefits of resource development employment for the Inuit is also dependent upon the distribution of population and mineral resources. Traditionally, the Inuit have had little interest in mineral resources; they derived their livelihood from game resources and dispersed across the north accordingly. Mineral development

TABLE 4

NUMBERS AND PERCENTAGES OF PERSONS 14 YEARS OF AGE AND OVER
BY AGE GROUPS BY LANGUAGES SPOKEN

Region, Ethnic Origin and Languages Spoken	14-24 Years of Age						25-44 Years of Age						45 Years of Age & Over						Total					
	Male		Female		Total		Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Arctic Coast - Eskimo																								
Native language only	20	10.6	23	12.6	43	11.6	135	62.2	256	74.6	291	68.3	133	76.4	100	89.3	233	81.5	288	49.7	279	55.5	567	52.4
Native language + English	157	83.5	152	83.5	309	83.5	78	35.9	52	24.0	130	30.5	41	23.6	12	10.7	53	18.5	276	47.7	216	42.9	492	45.5
English language only	9	4.8	2	1.1	11	3.0	4	1.9	1	0.5	5	1.2	-	-	-	-	-	-	13	2.2	3	0.6	16	1.5
Language unknown	2	1.1	5	2.8	7	1.9	-	-	-	-	-	-	-	-	-	-	-	-	2	0.4	5	1.0	7	0.6
Total	188	100.0	182	100.0	370	100.0	217	100.0	209	100.0	426	100.0	174	100.0	112	100.0	286	100.0	579	100.0	503	100.0	1082	100.0
Baffin - Eskimo																								
Native language only	133	26.5	133	29.6	266	28.0	354	68.7	428	88.1	782	78.1	222	86.7	196	97.0	418	91.3	709	55.7	757	66.5	1466	60.8
Native language + English	366	73.1	314	69.8	680	71.5	159	30.9	57	11.7	216	21.6	32	12.5	5	2.5	37	8.1	557	43.8	376	33.0	933	38.7
English language only'	1	0.2	1	0.2	2	0.2	1	0.2	-	-	1	0.1	-	-	-	-	-	-	2	0.2	1	0.1	3	0.1
Language unknown	1	0.2	2	0.4	3	0.3	1	0.2	1	0.2	2	0.2	2	0.8	1	0.5	3	0.6	4	0.3	4	0.4	8	0.4
Total	501	100.0	450	100.0	951	100.0	515	100.0	486	100.0	1001	100.0	256	100.0	202	100.0	458	100.0	1272	100.0	1138	100.0	2410	100.0
Keewatin - Eskimo																								
Native language only	16	7.1	31	13.7	47	10.4	161	63.1	208	81.6	369	72.4	113	86.3	120	94.5	233	90.3	290	47.4	359	58.9	649	53.2
Native language + English	210	92.9	196	86.3	406	89.6	92	36.1	46	18.0	138	27.0	17	13.0	7	5.5	24	9.3	319	52.1	249	40.9	568	46.5
English language only	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Language unknown	-	-	-	-	-	-	2	0.8	1	0.4	3	0.6	1	0.7	-	-	1	0.4	3	0.5	1	0.2	4	0.3
Total	226	100.0	227	100.0	453	100.0	255	100.0	255	100.0	510	100.0	131	100.0	127	100.0	258	100.0	612	100.0	609	100.0	1221	100.0
Mackenzie-Eskimo																								
Native language only	-	-	-	-	-	-	-	-	1	0.7	1	0.4	8	9.8	16	20.8	24	15.1	8	2.2	17	4.6	25	3.4
Native language + English	92	62.2	92	59.4	184	60.7	129	92.1	120	87.6	249	89.9	73	89.0	60	77.9	133	83.6	294	79.5	272	73.7	565	76.6
English language only	56	37.8	63	40.6	119	39.3	11	7.9	16	11.7	27	9.7	1	1.2	1	1.3	2	1.3	68	18.3	80	21.7	143	20.0
Language unknown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	148	100.0	155	100.0	303	100.0	140	100.0	137	100.0	277	100.0	82	100.0	77	100.0	159	100.0	370	100.0	369	100.0	739	100.0

Source: DIAND, Northern Economic Development Branch, 1974

employment opportunities will be concentrated in specific areas which may not coincide with the present Inuit population distribution. In some cases, large-scale population relocations may be necessary for Inuit wishing to participate in such employment. For example many of the Rankin Inlet miners came from Chesterfield Inlet, Gjoa Haven, Eskimo Point, Baker Lake, Repulse Bay, and Churchill (Kusugak, 1974, 16-17). Similarly, some Arctic Bay Inuit will be forced to move to a new Strathcona Sound community to gain employment in the Nanisivik lead-zinc mine (Tremayne, 1974, 2-3). Inuit wishing to successfully participate in the wage economy will find various factors against them. Temporary benefits of wage employment will be limited to Inuit who can successfully compete in, and endure, the wage economy.

3.2.2 The Impact of Employment

The most obvious impact of employment is increased disposable income. This is a function of wages and employment duration. The impact of increased disposable income is discussed under a following sub-section.

It was previously stated that increased employment opportunities might alleviate Inuit unemployment which is currently high (Tables 1 and 5). Creation of new employment opportunities will attract the unemployed and reduce their numbers. In the light of current high unemployment levels among Inuit (Tables 1 and 5), it is interesting to speculate about the effect of creating new employment opportunities in the north. Vallee (1962, 44) reports that with the creation of employment opportunities in Baker Lake, it was not the unemployed, underemployed, or unsuccessful hunters who took the jobs. Instead, it was the successful hunters who were previously fully occupied in the traditional economy. Those not so adept at the traditional lifestyle, those in real need of

TABLE 5(a)

PERCENTAGE DISTRIBUTION OF THE LABOUR FORCE BY NUMBER OF WEEKS ENGAGED IN SPECIFIC ACTIVITIES OR WITHOUT WORK

Activity, Region and Ethnic Origin	1-3 Weeks			4-17 Weeks			18-31 Weeks			32-45 Weeks			46-52 Weeks			No Weeks			Total Labour Force		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Wage & Salary Employment																					
Arctic Coast Eskimo	0.2	-	0.2	16.5	4.3	14.8	11.6	1.4	10.1	2.6	4.3	2.8	27.6	50.0	30.8	41.5	40.0	41.3	100.0	100.0	100.0
Baffin Eskimo	5.7	3.1	5.4	22.5	14.0	21.4	15.4	8.5	14.6	10.3	8.5	10.1	28.1	34.1	28.9	18.0	31.8	19.6	100.0	100.0	100.0
Keewatin Eskimo	N/Av.	N/Av.	16.7	N/Av.	N/Av.	24.4	N/Av.	N/Av.	14.5	N/Av.	N/Av.	6.5	N/Av.	N/Av.	25.3	N/Av.	N/Av.	12.6	N/Av.	N/Av.	100.0
Mackenzie Eskimo	3.7	3.0	3.6	21.6	10.4	19.4	17.2	3.0	14.3	5.6	3.0	5.1	32.5	64.2	38.8	19.4	16.4	18.8	100.0	100.0	100.0
Mackenzie Indian	5.5	2.7	5.2	29.1	9.3	26.5	12.5	3.3	11.2	4.9	11.5	6.1	16.2	53.5	22.4	31.8	19.7	28.6	100.0	100.0	100.0
Mackenzie Metis	0.5	1.3	0.7	9.3	3.9	7.8	8.3	7.8	8.2	8.8	14.3	10.2	58.3	62.3	59.4	14.8	10.4	13.7	100.0	100.0	100.0
Yukon Indian	4.2	5.0	4.3	31.6	15.0	28.8	15.0	2.5	12.9	6.7	7.5	6.8	21.8	25.0	22.3	20.7	45.0	24.9	100.0	100.0	100.0
Yukon Metis	-	-	-	13.3	30.0	17.5	10.0	-	7.5	10.0	-	7.5	53.4	60.0	55.0	13.3	10.0	12.5	100.0	100.0	100.0
Hunting Trapping Fishing																					
Arctic Coast Eskimo	0.2	-	0.2	5.0	-	4.3	17.7	1.4	15.4	6.8	-	5.9	14.2	-	12.1	56.1	98.6	62.1	100.0	100.0	100.0
Baffin Eskimo	2.4	-	2.1	14.3	0.8	12.6	15.0	-	13.1	10.7	-	9.4	8.0	1.5	7.2	49.6	97.7	55.6	100.0	100.0	100.0
Keewatin Eskimo	N/Av.	N/Av.	4.5	N/Av.	N/Av.	10.4	N/Av.	N/Av.	12.0	N/Av.	N/Av.	11.8	N/Av.	N/Av.	7.9	N/Av.	N/Av.	53.4	N/Av.	N/Av.	100.0
Mackenzie Eskimo	-	-	-	7.1	-	5.7	6.7	1.5	5.7	1.5	-	1.2	13.1	1.5	10.7	71.6	97.0	76.7	100.0	100.0	100.0
Mackenzie Indian	1.1	-	0.9	13.5	0.6	11.5	8.9	-	7.5	2.8	-	2.4	15.5	0.6	13.1	58.2	98.8	64.6	100.0	100.0	100.0
Mackenzie Metis	0.9	-	0.7	2.8	-	2.0	3.7	-	2.7	1.9	-	1.4	5.1	-	3.8	85.6	100.0	89.4	100.0	100.0	100.0
Yukon Indian	-	-	-	1.6	-	1.2	5.2	-	4.3	1.0	-	0.9	1.0	-	0.9	91.2	100.0	92.7	100.0	100.0	100.0
Yukon Metis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	100.0	100.0	100.0	100.0	100.0

Source: DIAND, Northern Economic Development Branch, 1974.

TABLE 5(b)

Activity, Region and Ethnic Origin	1-3 Weeks			4-17 Weeks			18-31 Weeks			32-45 Weeks			46-52 Weeks			No Weeks			Total Labour Force		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Self-Employment																					
Arctic Coast Eskimo	0.2	-	0.2	6.1	1.4	5.5	4.7	1.4	4.2	0.5	1.4	0.6	1.9	37.2	6.9	86.6	58.6	82.6	100.0	100.0	100.0
Baffin Eskimo	6.7	5.4	6.5	21.0	11.6	19.9	7.6	3.1	7.0	2.9	2.3	2.8	1.6	14.0	3.2	60.2	63.6	60.6	100.0	100.0	100.0
Keewatin Eskimo	N/Av.	N/Av.	11.8	N/Av.	N/Av.	19.1	N/Av.	N/Av.	4.9	N/Av.	N/Av.	3.1	N/Av.	N/Av.	7.1	N/Av.	N/Av.	54.0	N/Av.	N/Av.	100.0
Mackenzie Eskimo	-	-	-	0.7	1.5	0.9	-	-	-	-	-	-	0.7	4.5	1.5	98.5	94.0	97.6	100.0	100.0	100.0
Mackenzie Indian	0.3	-	0.3	0.6	1.1	0.7	0.2	0.6	0.3	0.4	-	0.3	0.5	1.6	0.7	98.0	96.7	97.7	100.0	100.0	100.0
Mackenzie Metis	-	-	-	1.4	-	1.0	1.9	-	1.4	-	-	-	2.3	1.3	2.0	94.4	98.7	95.6	100.0	100.0	100.0
Yukon Indian	1.0	-	0.9	0.5	-	0.4	2.1	-	1.7	0.5	-	0.4	-	-	-	95.9	100.0	96.6	100.0	100.0	100.0
Yukon Metis	-	-	-	-	-	-	-	-	-	-	-	-	10.0	10.0	10.0	90.0	90.0	90.0	100.0	100.0	100.0
Without Work																					
Arctic Coast Eskimo	0.2	-	0.2	5.0	1.4	4.5	15.8	1.4	13.7	8.7	1.4	7.7	9.7	2.9	8.7	60.6	92.9	65.2	100.0	100.0	100.0
Baffin Eskimo	0.4	-	0.4	5.7	4.6	5.6	10.3	7.0	9.9	5.7	8.5	6.0	6.5	17.1	7.8	71.4	62.8	70.3	100.0	100.0	100.0
Keewatin Eskimo	N/Av.	N/Av.	1.8	N/Av.	N/Av.	10.8	N/Av.	N/Av.	11.8	N/Av.	N/Av.	9.4	N/Av.	N/Av.	3.5	N/Av.	N/Av.	62.7	N/Av.	N/Av.	100.00
Mackenzie Eskimo	-	-	-	4.9	-	3.9	17.9	-	14.3	19.0	10.5	17.3	7.1	14.9	8.7	51.1	74.6	55.8	100.0	100.0	100.0
Mackenzie Indian	0.1	-	0.1	7.7	10.4	8.1	15.8	6.6	14.3	21.5	6.6	19.2	16.3	16.9	16.4	38.6	59.5	41.9	100.0	100.0	100.0
Mackenzie Metis	1.4	1.3	1.4	8.3	6.5	7.8	10.2	10.4	10.2	6.0	2.6	5.1	4.2	9.1	5.5	69.9	70.1	71.0	100.0	100.0	100.0
Yukon Indian	-	-	-	5.2	5.0	5.2	14.0	7.5	12.9	23.3	10.0	21.0	29.0	50.0	32.6	28.5	27.5	23.3	100.0	100.0	100.0
Yukon Metis	-	10.0	2.5	10.0	-	7.5	10.0	-	7.5	6.7	30.0	12.5	10.0	-	7.5	63.3	60.0	62.5	100.0	100.0	100.0

livelihood alternatives, generally were not hired.

A similar effect is possible in the Mackenzie Valley if the proposed pipeline is constructed. For example, high labour demands could induce young Inuit to terminate their formal education and reduce their opportunities for future jobs and advancement. Also, some employment opportunities might be filled by those already employed elsewhere, but at lower-paying jobs (Canada, Interdepartmental Pipeline Assessment Group, Mackenzie Valley Pipeline Assessment, 1974, 23-31). Thus, employment benefits could be constrained or circumscribed by the attraction of new labour force participants such as students. Also, some individuals may change from lower-paying to more renumerative jobs. The assurance that a certain quota of Inuit will be employed on pipeline construction is no guarantee that unemployment will be reduced because there is no assurance that those who will be hired are chosen from the unemployed. It is probable that the pipeline company would prefer to hire workers with the most previous experience.

The same situation is likely to occur in mining and hydroelectric power projects. High wages associated with these jobs could enlarge the real labour force by pulling people from schools, the traditional economy, or simply by relocating people to higher-paying positions. Reduction of unemployment would depend upon the number of previously unemployed people given jobs, not simply the number of jobs created, which is often the form of measurement used. Unless the unemployed are pulled into non-renewable resource employment or jobs vacated by those seeking resource development employment, unemployment levels may not significantly decrease.

Some indirect impacts of non-renewable resource employment are considered in the following sub-sections.

3.2.3 Income

Socio-economic impacts of increased disposable income contain both good and bad implications. In a poverty-ridden society, new income has the potential to increase the provision of life's necessities yet it also has the ability to enable the purchase of alchol, drugs, needless luxury goods, and junk foods.

Major considerations of this report are the marginal increase in Inuit disposable income induced by new jobs and the income-multiplier effect of new employment in northern Canada.

The contribution of northern mineral development to increased disposable income is not simply the total wages paid minus taxes. It is total wages paid minus taxes, transfer payment losses, and traditional income losses. For example, if a worker was receiving weekly welfare payments of $100 and obtained mine employment at $150 per week, the increase in disposable income is $50. Similarly, an Inuit from the traditional economy who obtains a $150 per week job does not have an increased disposable income of $150. The increase is equal to $150 minus revenues from hunting or tranping and minus the additional expenditures required to replace the imputed value of land food, and traditional clothing (assuming he ceased traditional activities when employed). If a person quit a $100 a week job to take a $150 job in the oil and gas industry, the disposable income would similarly increase by $50. Thus, the calculation of disposable-income changes is very complex and any statistics assessing income increases due to northern development must be examined carefully.

The income multiplier is often used by economists to evaluate local or regional benefits from income changes. Increases in northern wage payments can be expected largely to be spent in the north. This

position is taken by northern development supporters. Based on the theory that new jobs will increase disposable income, and that spending of disposable income will multiply to create other jobs, increased expenditures will be beneficial to the regional economy (Jamieson, 1974, 110-111). However, there is considerable doubt as to the value of the multiplier. Income losses to the south due to the undiversified nature of the northern economy mean that the multiplier is quite small (probably not much greater than one):

> The 'multiplier effect' is likely to be somewhat limited in the North, however. Its deficit position in relation to the rest of Canada and its extreme dependence on outside imports of all kinds create large and rapid leakages of income. (Jamieson, 1974, 110)

In summary, although resource development will increase disposable income, the benefits must be assessed in light of their marginal,rather than total influence on disposable income. Regionally or nationally, increased employment may be beneficial by reducing transfer payments but, on a local basis, the Inuit will only benefit if marginal incomes rise. Secondly, the income multiplier, associated with the benefits of increased disposable income, is low in the Arctic due to leakages of funds to the south and lack of economic diversity. As a consequence, jobs created by increased disposable income likely will not be great.

3.2.4 Finances

3.2.4.1 Spending, Savings and Investment

Increased disposable income in the north resulting from non-renewable resource development can be spent, saved, or invested. Given the boom-bust nature of many northern projects, one would expect the Inuit to save or invest as much of their disposable income as possible as a hedge against low employment periods. But generally, this does not occur.

Traditionally, the Inuit lived day-to-day from the land: a continuous income was assured by sharing, communal living, and the permanence associated with this resource. Moreover, in a subsistence economy no surplus was accumulated, precluding saving. Historically, the Inuit had no bank accounts, stocks, or bonds, for they were unknown and unavailable and considered unnecessary. As a result, when Inuit are paid wages for employment, they tend to spend it all for there is no cultural precedent for saving. Nor does the boom-bust Kabloona economy have a precedent in the Inuit culture circumscribing any tendency for future financial planning. Thus, although the seasonality and general impermanence of industrial employment necessitates saving, little is conducted. The long-run value of increased disposable income is decreased by immediate spending rather than saving or investment for future times of need.

Inuit spending patterns are often irrational. Income is often gambled away, spent on alcohol, or non-durable luxury goods (Stevenson, 1968, 9; Wolforth, 1971, 56: Simpson and Bowles, 1969, 351). A former Rankin Inlet resident cited an example where an Inuit purchased an expensive suitcase to carry fish (Smith, 1974, p.c.). A burlap sack would have served equally well and the money spent on the suitcase could have been saved or better spent elsewhere.

Summarily, disposable income benefits are related to savings, spending, and investment patterns. Due to lack of experience in a boom-bust wage economy, the Inuit do not make full use of new economic opportunities. Moreover, costs can be associated with increased disposable income because it provides the environment for increased alcohol consumption, gambling, and drugs.

3.2.4.2 Inflation

Prices in the Northwest and Yukon Territories are generally the highest in Canada for most goods and services. In addition, northern resource development will increase disposable income and Inuit have a high propensity to spend this income.

The flow of resource development funds to the north will likely increase rapidly in the near future, especially if the Mackenzie Valley pipeline is built. A rapid inflow of large amounts of money could stimulate inflation which is already over 10 percent, on the national average.

Experience from Fairbanks, Alaska, illustrates what could happen in northern Canada if large-scale resource development projects continue as planned. The Mackenzie Valley Pipeline proposed by the Canadian Arctic Gas Consortium is much larger than the Alaska Pipeline; its impact on demand, supply, and prices of the northern economy, indeed the national economy, could be much greater judging by recent developments in Fairbanks, Alaska (see p.46).

Inflation impacts are wide-ranging but a scarcity of goods and a rapid escalation of prices could seriously affect the total northern economy. The effect on native peoples would be greatest because they are the poorest group with the highest-unemployment rates. They would suffer the most from shortages and high prices.

3.3 Social Aspects

3.3.1 Introduction

A preliminary assessment of the implications for the Inuit of the consequences of oil, gas, mineral, and hydroelectric development in the Canadian north is subdivided for convenience into demography, social pathology, social and community structure, and changes in traditional culture.

TOWN MAY REGRET PIPELINE PRAISE

In the past few years we have written so many editorials supporting the trans-Alaska pipeline project and urging that we get on with it, that now the project is beginning, we feel a bit hypocritical in writing an editorial complaining about its impact.

Nonetheless, we feel compelled to point out that thus far the project is having very little positive impact on the average citizen, that in reality it is having a negative impact on most of us.

One of the biggest impacts has been the project's impacts on the price structure, forcing us into a whirlwind of inflation, the likes of which we have never seen before.

The cost of real estate has skyrocketed and landlords have started raising their rents to almost unbelieveable figures. And various groups of tenants are having to band together in associations to fight what they call unconscionable rent increases, evictions, etc..

The demand for building lots with utilities available is particularly great, and it appears that before long the vacant lots in the city will disappear. The population of the city will go up, of course, but it's a cinch that it will not be as comfortable living in a crowded city with little breathing space.

Construction will probably boom outside the city in the borough (county), but there again there is apt to be environmental impact. The impact could be serious on the public health since a study not too long ago showed that at least one third of area wells were polluted.

Then there is the impact on traffic. Once we had a few snarls at eight in the morning and at noon and traffic jams at the five o'clock rush. Now the traffic is running heavy all day, and it is becoming increasingly difficult to get around anytime during the day from eight to five.

The cash registers of the businessmen are beginning to jingle. And those who are fortunate to be employed on the pipeline construction are in a good position. That green stuff will allow them to overcome their problems.

But by and large the average citizen is being hit, and hit hard. The easy-going slow paced Fairbanks is losing its personality and is becoming another old, crowded, stilted, impersonal fast-paced city.

And what does all this add up to for the average citizen? A great deterioration of the quality of life. (Conservation News, Vol. 39, No. 24, 1974, 11)

3.3.2 Demography

3.3.2.1 Totals

Estimates of the current northern Inuit population vary considerably. Stevenson (1969, 181) suggests 15,000 while others range from 12,000 (Rowley, 1964, 11) to 20,000 (Department of Indian Affairs and Northern Development. The Eskimo/Inuit of Canada. 1974, 3). The modal population in the literature reviewed is approximately 14,000.

The rate of Canadian Inuit population increase is large when compared to national rates and other countries. Birth, death, and natural increase rates for Northwest Territories culture groups are illustrated in Table 6. If current conditions continue, the Inuit population will double in 20 years (Navsmith, 1972, 2).

It is difficult to assess the impact of northern development on the total Inuit population for population growth is determined by three factors which influence totals in different directions:

(a) natural live birth rate,
(b) natural death rate,
(c) emmigration rate.

It seems reasonable that more and better medical facilities will accompany development. This will increase the birth rate. However, the birth rate of southern Canadian society is currently much lower than among Inuit. Whether cultural contact will influence the Inuit birth rate negatively is unknown. Undoubtedly, there will be some acculturation influences such as birth control and family planning which may reduce the Inuit birth rate to some extent. Concomitantly, the death rate will be reduced by better medical facilities which will tend to increase population totals. Out-migration from the Arctic will likely increase as native peoples become aware of job and other opportunities in the south. The dimensions of such movements are unknown. As a consequence, the impact of development on total Inuit population

TABLE 6

VITAL STATISTICS, N.W.T.
BY ETHNIC STATUS[a]
1961-1972

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Live Birth Rate												
Indian	44.52	41.17	39.77	41.12	37.85	37.14	39.56	42.6	40.1	41.26[d]	34.10	29.10[d]
Inuit	61.30	58.08	59.19	59.71	58.62	52.69	53.69	53.3	49.4	49.44[d]	38.31	35.12
Other	40.25	36.21	34.84	38.20	31.74	30.58	30.45	32.1	28.0	32.12[d]	34.06[d]	31.95
All Groups[b]	48.53	44.92	44.21	46.57	42.25	40.07	40.97	41.7	38.0	40.14[d]	35.66[d]	32.55[d]
All Groups[c]	48.6	47.3	48.4	50.6	47.6	40.3	41.7	41.9	38.0	NA	NA	NA
(Canada)	(26.1)	(25.3)	(24.6)	(23.5)	(21.4)	(19.4)	(18.2)	(17.6)	(17.6)	(17.4)	(16.8)	(NA)
Crude Death Rate												
Indian	NA	NA	9.33	6.63	7.90	7.17	6.70	7.7	6.5	7.19[d]	8.73[d]	6.76[d]
Inuit	NA	NA	17.20	4.03	11.56	13.01	10.98	10.6	10.1	11.11[d]	11.24[d]	8.89
Other	NA	NA	5.08	3.39	2.98	3.89	4.49	3.16	4.1	4.61[d]	5.97[d]	5.22[d]
All Groups[b]	NA	NA	10.13	7.92	6.98	7.93	7.35	6.6	6.7	7.45[d]	8.49[d]	6.88
All Groups[c]	11.4	12.9	11.1	8.6	7.9	8.0	7.5	7.4	6.8	NA	NA	NA
(Canada)	(7.7)	(7.7)	(7.8)	(7.6)	(7.6)	(7.5)	(7.4)	(7.4)	(7.3)	(7.3)	(7.3)	(NA)
Natural Increase Rate												
Indian	NA	NA	30.44	34.49	29.95	29.96	32.86	34.9[d]	33.6[d]	34.07[d]	25.40[d]	22.34
Inuit	NA	NA	41.99	45.68	47.06	39.68	42.71	42.7[d]	39.3[d]	38.30[d]	27.07	26.23
Other	NA	NA	29.76	34.81	28.76	26.68	25.96	28.94[d]	23.9[d]	27.51[d]	28.09	26.73
All Groups[b]	NA	NA	34.08	38.65	35.27	32.14	33.62	35.1[d]	31.3	32.68[d]	27.17	25.67[d]
All Groups[c]	37.2	34.4	37.3	42.0	39.7	32.3	34.2	34.5	31.2	NA	NA	NA
(Canada)	(18.4)	(17.6)	(16.8)	(15.9)	(13.8)	(11.9)	(10.8)	(10.2)	(10.2)	(10.3)	(10.1)	(NA)

Source: Compiled by Gemini North Ltd. from C.M. Lu and D.C.E. Mathurin, Population of the Northwest Territories to 1981 (Ottawa: DIAND, November 1973), Government of the N.W.T., Report on Health Conditions in the Northwest Territories, various years and Dominion Bureau of Statistics/Statistics Canada, Canada Year Book, various years.

[a]Per 1000 population.

[b]Based on calculations using information from Lu and Mathurin and Northern Health Reports cited above.

[c]Vital Statistics taken directly from Canada Year Book, various years. Natural Increase Rate for all groups, 1961-1972, used for population projection model. See Volume II, Chapter III.

[d]Figures differ slightly from those in Northern Health Reports due to recalculation for more precise data. NHS data were erroneously rounded in some cases. Inuit 1970 Live Birth Rate differs greatly because of incorrect NHS calculation.

NA = Not available

The data also shows a much higher rate of natural increase per 1000 population for the N.W.T. compared to the Canadian average even though both are dropping over time. (Gemini North Ltd., 1974, Bk. 1, Vol. 2, Ch. 3, 129)

and rates of increase are largely unknown. In the short run, however, it is expected that the population will increase fairly rapidly (Navsmith, 1972, 2; Government of Canada, Interdepartmental Pipeline Assessment Group. Mackenzie Valley Pipeline Assessment, 1974, 20). Short-run population-boom effects may be partially offset in the long run by acculturation and out-migration.

The Inuit percentage of the Territories total population is highly variable spatially and precise information is not available. Regional data displayed in Table 7 illustrate gross Inuit population distribution as totals, but no percentage figures are available. In decreasing order of population the regions are Baffin, Keewatin, Arctic Coast, and Mackenzie. As development proceeds, it is expected that the Inuit will constitute a smaller percentage of the total population despite rapid natural increase. In the Mackenzie Valley, for example, Inuit and Treaty Indians comprise only 33 percent of the total population (Inuit 7%; Indians 26%). The Canadian Government's Interdepartmental Mackenzie Valley Pipeline Assessment Group (1974, 20) indicates "a significant erosion of the numerical status of Native People in the Northern Territories" has already occurred and with population increase levels (Indian 1.24; Inuit 3.56; and other *6.01) this trend is expected to continue. Therefore, although development may contribute positively to total Inuit population, the percentage of natives in the total population is expected to continue to decline.

3.3.2.2 Spatial Distribution

> "Now that the Eskimos and Indians are becoming sedentary, the white man has become nomadic". (Valentine, 1963, 48)

Before the coming of the white man, many Inuit were nomadic people who lived and wandered through much of northern Canada beyond

*Including Metis and Non-Status Indians.

TABLE 7

POPULATION BY AGE GROUPS

Region and Ethnic Origin	0-14 Years of Age			15-19 Years of Age			20-44 Years of Age			45-64 Years of Age			65 Years of Age and Over			Total Population		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Arctic Coast Eskimo	549	539	1,088	93	90	183	290	278	568	142	93	235	32	19	51	1,106	1,019	2,125
Baffin Eskimo	1,172	1,203	2,380	256	241	497	729	661	1,390	218	173	391	38	29	67	2,413	2,312	4,725
Keewatin Eskimo	652	602	1,254	97	110	207	361	344	705	113	104	217	18	23	41	1,241	1,183	2,424
Mackenzie Eskimo	400	411	811	83	84	167	228	207	435	73	70	143	15	11	26	769	783	1,532
Mackenzie Indian	1,228	1,239	2,467	267	235	502	789	694	1,483	335	278	613	160	155	315	2,779	2,601	5,380
Mackenzie Metis	401	348	749	77	76	153	167	189	356	44	52	96	30	13	43	719	678	1,397
Yukon Indian	414	323	737	65	73	138	158	167	325	73	71	144	35	34	69	745	688	1,413
Yukon Metis	95	80	175	11	14	25	25	28	53	6	4	10	2	2	4	139	128	267

Source: DIAND, Northern Economic Development Branch, 1974.

tree line (Fig. 1). But, past exogenous economic influences such as whaling and fur trading made the Inuit increasingly dependent upon the Kabloona Culture inducing settlement and mobility pattern changes (Wolforth, 1971). In the Belcher Islands, establishment of a fur trade post contributed to "the formation of large sedentary and possibly permanent villages situated at the point of trade and subsidy" (Freeman, 1967, 173).

Expansion of resource development industries into Inuit areas will continue and increase this trend to agglomerate. In future, the Inuit population distribution will not orientate primarily to game availability but rather to the location of jobs and social services. The extent to which conglomeration occurs will be dependent upon a variety of factors. Inuit acculturation and desire to participate in the wage economy of the south as well as the need for medical and social services associated with development will determine rates of movement to, and establishment in, larger settlements. Besides such positive attractive forces to new settlements, there will undoubtedly be negative forces pushing or forcing the Inuit into a sedentary settlement lifestyle. The ecological impact of northern non-renewable resource development, no matter how carefully controlled, will both alienate hunting and trapping lands and probably reduce game and fur bearing populations. As life on the land become less feasible and life in settlements becomes more attractive, the population distribution will change.

The 1969 Inuit distribution reveals that many are now in large settlements (Fig. 3). The degree of permanence of the current Inuit settlement pattern is questionable for several reasons. Many new settlements to which the Inuit will be attracted will not be permanent towns. Canadian resource development frontier settlements, which are

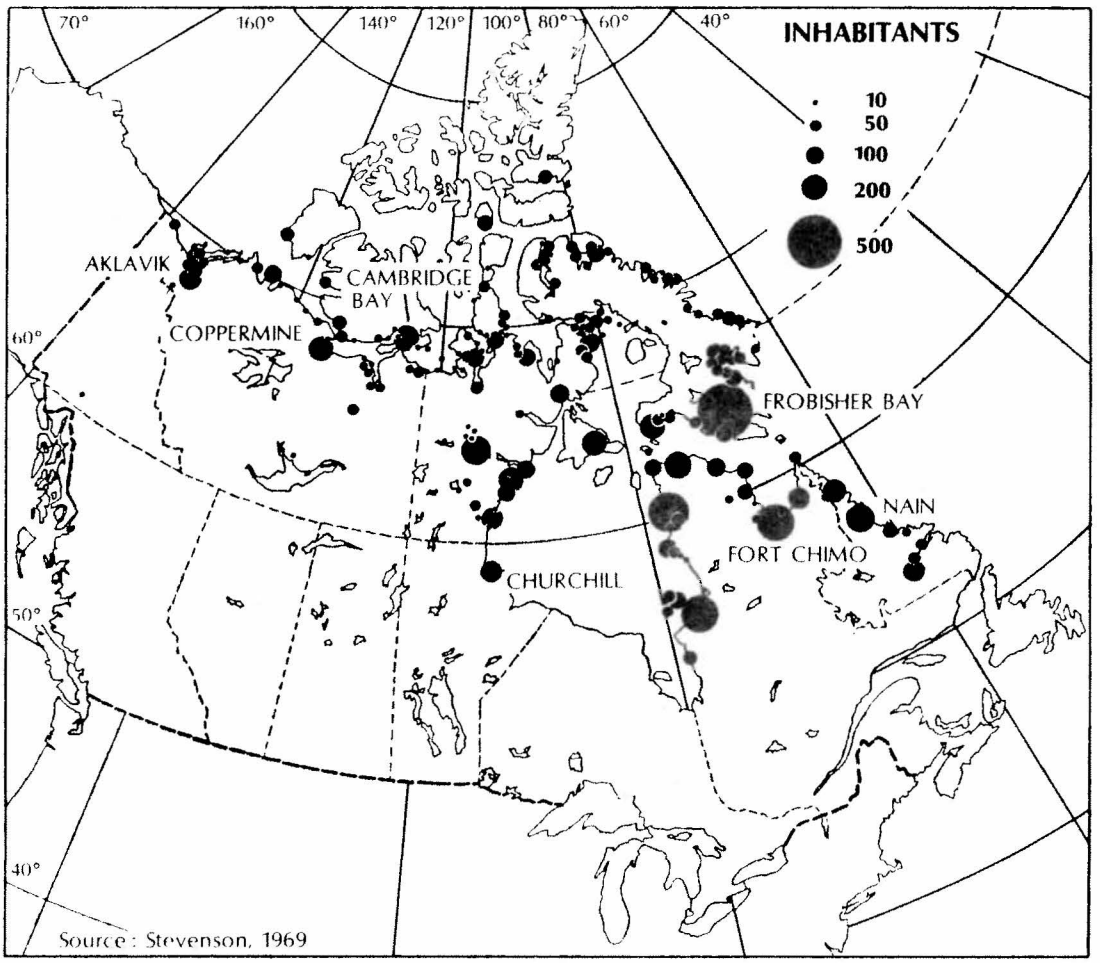

Figure 3. Inuit Settlements, 1969.

often company towns,are characterized by impermanence (Robinson, 1962, 91; Fried, 1966, 38). Rankin Inlet nickle mining lasted only a few years (1956-62) before the company left. Economic viability of Yellowknife gold mining was recently in doubt until the price of gold greatly increased (Department of Indian and Northern Affairs, Socio-Economic Impact of Gold Mine Closure in the Yellowknife Region, 1972, 1). Often development settlements in the north are boom-bust ventures; they are economically viable during exploration, extraction and beneficiation stages; however, a bust is inevitable given finite resources.

Thus, during the early development stages, mineral development will contribute to formation of a sedentary, urban Inuit population. However, an inevitable bust stage may influence population distribution. What Inuit workers in "busted" resource towns may or can do has not been determined.

3.3.2.3 Changing Age and Sex Distributions

Changes in Inuit sex-ratios and age distribution will be induced by northern development. Many resource development employment opportunities are for males only. Thus, Inuit men will be attracted to non-renewable resource centers producing high male : female ratios in resource settlements and low ratios in traditional camps and settlements from which the workers are hired. Development will, therefore, change the sex ratios over northern regions but will likely have little effect upon total native male-female ratios unless a significant southward worker migration is experienced. Since males will get most of the resource development jobs, their exposure to the Kabloona wage economy may draw some males south in search of work.

Preference of the mineral and energy industries for male

workers will draw transients from the south which will further skew the total population sex ratio of resource towns, but will unlikely affect the traditional sector. In the resource towns, competition for female companions will be high and,coupled with associated racial overtones,could be a contributing factor to social tension.

Similarly, development will alter the age population pyramids of northern settlements. Resource towns generally have high concentrations of young adults with few young children, few teenagers, and few elderly (Lucas, 1971; Robinson, 1962, 81). Conversely, traditional population areas will have a surplus of elderly and teenagers younger than the working age. Lack of young people in traditional settlements could decapitate many traditional settlements. If providers and child-bearers are gone, these communities could languish.

3.3.3 Social Pathology

Social pathology concerns deterioration in the social health of a society. Two major indicators, crime and medical health, are used to analyse the Inuit social health.

3.3.3.1 Crime

No society is free from crime and the traditional Inuit culture is no exception (Mowat, 1951, 183-200). Crime is increasing, however, in the Inuit population and northern development appears to be a major cause (Gzowski, 1975, 33; Stevenson, 1968, 1; Balikici, 1968, 162; Valentine, 1963, 45). Current northern crime rates are as much as 10-times higher than the rest of Canada and the rate of crime increase is also much greater.

Violent crimes were 2 per 100 population in 1968 in the Mackenzie Valley and 0.4 per 100 population in the rest of Canada. The violent

crime rate in the Mackenzie Valley doubled from 1968-1969 while it remained the same in Canada as a whole. Similar trends are experienced in crimes against property (Gemini North Ltd. 1974, Bk. 2, Vol. 2, Ch. 7, 747).

Little is known about the causes of social violence but crime appears to increase with northern economic development and many crimes are related to alcohol abuse. Consequently, the following discussion is largely hypothetical as the real answers are unknown.

3.3.3.1.1 Some Possible Causes.--The Inuit are, as a result of northern development, becoming a minority despite the fact that they were once the only human tundra occupants. The Kabloona, who will soon dominate the Inuit in numbers, have long dominated the natives economically. The Inuit were once independent, but many are now tied to a wage economy and an alien society they do not understand and in which they experience difficulty competing. This can result in feelings of deprivation, inferiority,and frustration. Exposure to the outside world exposes the material inferiority of the Inuit while the prevailing northern social economy constrains attainment of such material goals by native people.

Traditional Inuit social controls have been eroded by development and replaced by Kabloona strategies and institutional arrangements. The Inuit neither identify with,nor understand,these resulting in social disorganization.

Gemini North concluded that crime rates rose in the Mackenzie Valley primarily due to two factors:

> (a) an increase in development pressures including increases in cash income, population, and exposure to the outside world.

> (b) the single most important factor in the increase in violent crime is the abuse of alcohol.
>
> (Gemini North Ltd. 1974, Bk. 2, Vol. 2, Ch. 7, 740).

It is impossible to predict accurately the impact of non-renewable resource development on crime rates. But based upon extrapolation of present trends, crime is expected to increase greatly in the future. Perhaps the most important questions do not concern the rates at which crime increases but rather: when crime rates will stabilize, if ever; and what impact economic "bust" will have upon crime. One northern scholar asserts:

> It would be my opinion that unless a rational economy can be developed in the northern communities and a reasonable application of our knowledge of the dynamics of cultural erosion and racial discrimination can be made effective, the major problem of northern communities will be ever increasing violence. Frobisher Bay and Inuvik will become the Watts and Newark of the Canadian North, (Dr. J. D. Atcheson quoted in Gemini North Ltd., 1974, Bk. 2, Vol. 2, Ch. 7, 808).

Resource towns "going bust" will likely not have a deflationary effect upon crime rates. It is not inconceivable that economic collapse will stimulate unprecedented crime and violence. Many benefits of resource development end with industrial closure yet many of its costs remain unameliorated at that time.

3.3.3.1.2 Some Examples.--On May 25, 1974, a young Inuit in Aklavik shot and killed a Catholic priest, wounded an R.C.M.P. officer, and started a shooting spree resulting in his own death and the death of a close friend. Peter Gzowski summed up the causes of the senseless slaughter as frustration and alcohol abuse induced by rapid northern development:

> Few people would question the inevitable development of the North. Many, though, question the apparently reckless way that development is being carried out. The bulldozer and the seismic blast, it could be argued, the liquor stores and the welfare cheques and subsidized housing...all of these things may yet turn out to be the measles and the tuberculosis of the 20th century, and the symptoms they raise to be the destruction of self respect and a confusion about who and what a whole generation of people are supposed to be.
>
> (Gzowski, 1975, 34).

Yet, frustration, lack of self respect, and readily available alcohol are not the only influences on crime rates. Juvenile delinquency simply can be a result of lack of adequate leisure and recreational facilities which are, in turn, caused by infrastructure deficiencies characteristic of many northern communities. Changing sex-ratios in northern towns from the influx of unattached Kabloona transients and Inuit males are also causing a distinct problem. Several authors cite adultery, prostitution, promiscuity, and associated deviance as related to female availability as well as other factors (Jamieson, 1974, 108; Interdepartmental Advisory Committee on Northern Development. Sub-committee on Science and Technology. Science and the North. 1972, 36). Thus, the scenario of northern crime is complicated with various effects and multivariate causes.

3.3.3.2 Medical Health

Since first contact with whites, Inuit health generally has deteriorated due to nutritional changes, introduction of communicable diseases, drugs, and alcohol, and increasing incidence of mental illness.

With better medical and health services and increasing disposable income associated with northern development, certain aspects of native health are expected to improve. Concomitantly old problems may worsen and new ones may be introduced. Collectively these could lead to a

general deterioration of Inuit health.

3.3.3.2.1 Nutrition.--Traditional Inuit food was large mammals and fish which yielded low carbohydrates and high protein. Development changed the traditional diet so that many Inuit now eat Kabloona foods. Some diseases and physical disorders related to their new high carbohydrate, low protein nutrition are:

Poor dental health and cavities;

Hypertension;

Eye disorders, arteriosclerosis of the eyeground, myopia;

Tuberculosis and diseases associated with protein reduction;

Diseases related to high cholesterol, heart disease, high blood pressure;

Diseases linked to excessive sugar consumption including:

Acne vulgaris,
Cholelithiasis,
Obesity,
Artherosclerotic cardiovascular disorders,
Secular growth acceleration,
Diabetes mellitus,
Increased levels of blood lipids.

(Cass, 1969, 243-257; Forsius 1969, 259-264; Gemini North Ltd., 1974, Ch. 2, Vol. 7, 651-678).

The Inuit are not sufficiently familiar with southern foods to know what has nutritional value. In fact, clever packaging and deceptive advertising by food companies make it difficult for anyone to practice good nutrition, experience notwithstanding. As development continues, the Inuit will likely obtain more and more foods from Kabloona stores rather than from the land. And the nutritional value of much of this food is questionable:

...the grains that became liquor, the fruits and vegetables that lost all their food value going into cans and jars full of syrups and condiments, the potatoes and corn that became various kinds of chips,

> crackels, crunchies and yum-yums, the cereals that became breakfast novelties less nourishing (as a matter of scientific fact) than the boxes they are packed in...
>
> (Roszak, 1973, 405).

3.3.3.2.2 Communicable Diseases.--The Inuit population was, in the past, decimated by the introduction of communicable diseases for which they had no immunity: smallpox, tuberculosis, measles, and so forth (Mowat 1951, 109; Cass, 1969, 245). Increases in immunity, better housing, health care, and other factors greatly improved native health with respect to the above diseases. However development could contribute to new problems such as veneral disease, primarily gonorrhoea. Gemini North (Bk. 2, Ch. 2, Vol. 7, 1974, 659) found that "the rate of infection (gonorrhoea) is increasing dramatically among the Indian and Inuit population, and seems to be remaining stable in the 'other', or outsider, population". The rates of incidence were over 60 percent higher among Indians and Inuit. Syphillus is not yet a problem in the north although it is prevalent in southern Canada. With northern expansion, it seems inevitable that this problem will be introduced; because it is communicated in the same manner as gonorrhoea it could spread rapidly and its effects are much more dangerous.

3.3.3.2.3 Drugs.--According to past northern experiences, alcohol consumption increases with the degree of development. This could cause scerosis of the liver and associated internal disorders to proliferate. There is also a possibility that a northern drug culture could be created as transient Kabloona workers may import hallucinogens and narcotics when they take employment. Such drugs have widespread physiological, social, economic, and psychologic ramifications. Drug use is expected to markedly increase with development.

3.3.3.2.4 Mental Illness.--Although little is known about Inuit pre-development mental health, Boag (1966, 138-139) states that levels of northern mental illness may increase as southern Canadian economy and culture move northward:

> ...the Inuit is subjected to the stress of culture change and it's a common finding in other parts of the world that, as simpler non-western societies adopt western culture, their rates of mental illness tend to rise to the same as ours and the symptomatic pictures come to resemble those common in our society.

Boag (1966, 140) concludes that:

> the fate of the Eskimo is an open question. They are in a difficult period of transition. Some groups show the evidence of social breakdown and concomitant behaviour problems. Others appear to be making good progress towards stable adaptation to our society. The risk is that to the extent that they are only partially integrated, they may become a deprived minority living on the fringes of white society, with all the implications of this for poor mental health.

3.3.3.2.5 Housing and Health.--Unfamiliarity with western-style housing and the general poor quality of northern native housing, can contribute to medical problems such as pneumonia and diseases such as infectious hepatitus.

A former Rankin Inlet mining community resident related the problem of over-heated natives houses and the resultant pneumonia and other respiratory problems. The Inuit are used to unheated tents, ice huts, and igloos and remain fully dressed while indoors. When living in heated houses they follow the same practice causing heavy perspiration. Consequently, they are more susceptible to colds, pneumonia, and other respiratory diseases on going outisde. Moreover, it was common not only to remain in one's outer clothes but also to set the thermostat at high levels causing houses to be overheated even by Kabloona standards (Jacobsen, 1971, 292; Smith, 1975, p.c.).

Sanitary facilities are lacking in many Inuit settlement houses where the "honey bucket" is used to dispose of human wastes. Similarly drinking and washing water are often not isolated, raising the possibility of the spread of infectious diseases. Because of discriminatory servicing of houses, such as in Inuvik, the Inuit have poor water supply, sanitary facilities, and associated health problems.

3.3.4 Social and Community Organization

3.3.4.1 General Aspects

The community and social structures of Inuit society are changing rapidly under the impact of development. Traditionally, the Inuit lived in small communities or camps comprised of no more than 10 families. The extended family and kinship bound the camp together and it formed the basis for social organization(Grayburn, 1966, 120-121). The communities were rural in orientation. They looked to the land for livelihood while the people looked to one another for communal support, through sharing. Social decision making, social controls, and leadership were all flexible. The camp leader was generally a prestigous hunter for this attribute was highly valued in the male. Decision making was not authoritarian and informal discussions were held prior to significant undertakings since the society was culturally homogeneous and egalitarian. Its members could express opinions freely and, thus, social stratification was non-existant. The social system was quasi-anarchistic; the camp leader had only slightly more influence than other men (Mowat, 1951, 198).

Within the community itself there were no cliques or friendship groups. If a person was a member of the community, he was permitted all of its rights and privileges. On a personal basis, community roles

were well-defined, based on a sexual division of labour. The males were providers of raw materials for food and clothing while the women prepared these materials into useable and edible items and looked after the children (Jamieson, 1974, 102). Infants were cared for by their mothers while older children were left to entertain themselves with their peer groups until able to assist their parents in daily tasks.

With development, often the Inuit are drawn to white communities or the Kabloona move in and dominate existing native communities. Many larger northern communities are of white origin or at least were developed and expanded by whites. Aklavik, Inuvik, Rankin Inlet, and the new community for the Nanisivik Mines, Strathcona Sound are a few examples. As development continues, Kabloona influence will expand in already existing communities and it is likely that many new towns will spring up around mines, oil and gas fields, and construction sites of large energy projects.

Many of these communities, and the social systems that evolve in them, will be foreign to the natives. Kabloona communities are sedentary, larger in size and distinctly urban. Wolforth (1971, 109) states that despite population totals, many northern settlements have a distinct urban, rather than village flavour. Moreover, these settlements are oriented inward to the non-renewable resource rather than outward to the land.

There are other important differences between development towns and traditional Inuit villages. These communities are rarely culturally homogeneous, and often contain Inuit, Kabloona, and sometimes Indian and Metis. The communities are tied together not by family structure or kinship, but by economics: employment of one form or another. The leadership, social decision-making, and social organization is a rigidly-defined heirarchy where a few make decisions affecting the many.

Sexual division of labour is often less rigidly defined where the male is generally the provider. Childrens' acitivites are often more controlled.

Northern development can contribute significantly to the disintegration or change of Inuit social and community structures. Growth in size and lack of homogeneity can contribute to racial tension, clique formation, and the development of friendship groups. Parsons (1970, 10-11) notes this is an extensive problem in Inuvik and Jamieson (1971, 102) states that similar problems could arise as a result of Mackenzie Valley Pipeline construction.

Perhaps the most disruptive feature associated with development for the Inuit is the change from a flexible to a rigid social organization. In northern towns, some aspects such as social controls, and decision-making are now Kabloona in orientation if not actually dominated by the Kabloona. And community leadership is often dominated by the Kabloona. Where a white is not the leader, it is a native who gained his prestige on the Kabloona success scale rather than the traditional native one. For example, successful employment has become the new criterion for leadership rather than hunting and trapping. Indeed, native community leaders may be picked by the Kabloona rather than the people (Gemini North Ltd., 1974, Vol. 2, Ch. 7, p. 811).

With economic development, Inuit social controls have been eroded and replaced by Kabloona controls such as the R.C.M.P., legal codes, and the courts. The Inuit do not understand, trust, or know how to use these foreign controls. This leaves their society with a weakened organizational framework where traditional controls such as ridicule and ostracism are becoming less effective. The Inuit look to the Kabloona

for leadership and social guides. These aspects of Kabloona society - as well as being foreign - have sometimes emerged as "capricious, authoritarian and discriminatory" (Dunning, 1959, 122).

On a personal level, the lack of clearly-defined sexual roles in the changing social structure has caused some serious problems (Jamieson, 1974, 102). Stevenson (1968, 10) found Inuit women in new industrial towns to be disoriented. The result was messy homes, poor clothing and meals, child neglect, and excessive drinking. Without traditional social roles these women lacked a sense of direction and purpose.

3.3.4.2 The Resource Town: Social and Community Structures

Ira Robinson (1962) and Rex Lucas (1971) discussed in considerable depth Canadian single-industry, resource-development towns. Their work suggests that development of such northern settlements will have far-reaching impacts on traditional Inuit social organizations and community structures.

Although sedentary, the resource development town is traditionally impermanent. In general, the only reason for such towns' existence is non-renewable mineral resources of the area. When the resources are depleted, the town will bust and become a ghost town unless sufficiently diversified as commercial interests leave. Even Yellowknife, one of the most diversified northern settlements, will experience serious socio-economic difficulties when gold mining ends (Department of Indian and Northern Affairs. Socio-Economic Implications of Gold Mine Closure in the Yellowknife Region., 1972) unless governments subsidize its continued existence. This uncertainty is heightened by the dependence of the town on world or national product demand, product prices, and technology. For example, Elliot Lake, Ontario, experienced serious financial trouble when the U.S. federal government did not act on its

options to continue to buy Canadian uranium in 1962 (Robinson, 1962, 96). Rankin Inlet suffered when the nickle ore was depleted in the 1960's. Similarly, technological change could erode the demand for some minerals by synthetic replacement.

In addition to the uncertainty of the viability of the towns, many residents of resource towns - indeed of most arctic settlements - are transients. Usually the main reason for going north is financial profit or promotion. When these goals are achieved, residents often return south. Therefore, many Kabloona residents have no long-term commitment to the land. This is exemplified by the difficulty experienced in organizing community associations, church groups, and so forth (Robinson, 1962, 87). Thus northern settlements often lack social infrastructure, cohesiveness, and permanence.

Other factors contribute to the lack of social cohesiveness to the point where socio-economic and ethnic stratification become significant features. In the resource town, the population is generally small and everyone knows the employment status and approximate wage of each community member: "the family takes its social status in the community from the position, wage and prestige of the breadwinner" (Lucas, 1971, 148). The fact that social status is obvious and controlled by the company employment heirarchy, which is generally rigid, leads to the formation and institutionalization of distinct social strata.

Besides this socio-economic stratification, many northern developments have a very distinct ethnic stratification which is part and parcel of racism. Usually the dominant cultural group, the Kabloona, forms the apex of the heirarchy and the subordinate group, the Inuit, forms the base. Although not a resource town per se, Inuvik

exemplifies this ethnic stratification (Parsons, 1970, 8-11).

Socio-economic and ethnic stratification of northern communities are highly significant because both socio-economic and ethnic heirarchies interact and tend to reinforce a general population stratification. For example, a native employed as a mine labourer is on the bottom of both the socio-economic and the ethnic hierarchies. His wages, position, responsibility, and prestige are lower than the owners, managers, superintendents, and skilled workers. Moreover, because he is an Inuit he is a member of the subordinate culture and lower on the ethnic hierarchy. Since these two hierarchies are inter-related and visible, the Inuit in many cases holds the lowest social rank in the northern community. This stratification could have far-reaching sociological and psychological effects as well as inhibiting formation of a cohesive community mentality. Dichotomies such as poor-rich, Inuit-Kabloona, subordinate and dominant are evident and self-reinforcing. The characteristics lead to racism, segregation, racial stereotyping, and general inter-cultural distrust.

3.3.4.4 The Impact of Northern Resource Communities on the Inuit

According to Vallee (1962, 213-214), Inuit identification with, and integration into, a community is largely dependent upon formation of some form of native community association or organization. Formation of effective community associations seems to occur under the following circumstances:

1. Where the Eskimos command resources and facilities which are valuable and scarce;

2. Where in the pre-settlement period leadership was channeled through one or two families of a strong band organization;

3. Where there is no formal segregation between the Eskimos and Kabloona;

4. Where no one Kabloona institution is overwhelmingly dominant in the community.

(Vallee, 1962, 213)

All mineral and energy development communities in the north are located near, and based upon, resources that are valuable and scarce. These are the reasons why the Kabloona expanded into the north. However, seldom do the Inuit control these scarce and valuable commodities. Oil, gas, water, and minerals are all controlled by private Kabloona enterprises and the federal government. Thus, mineral and energy resource towns fail to meet the first condition for a flourishing community organization and, in turn, a stable cohesive community.

Secondly, resource towns can be located where there was little previous Inuit presence, thereby circumscribing the leadership roles that develop in the pre-settlement period. The Nanisivik Iron Mine at Strathcona Sound will create a new community where social organization will be based not on pre-settlement leadership and cohesion, but upon the employment-social heirarchy, constraining formation of a sound community association. This occurrence is not uncommon in the north.

Usher (1974) states that racial discrimination is common in the north and it is likely to increase with development. The socio-economic hierarchies of resource towns tend to institutionalize and reinforce ethocentric attitudes so that these communities are likely to fall short of Vallee's third criterion for community cohesion and association formation.

Resource towns are based upon the domination of one institution, the private energy or mineral company. Therefore, the fourth criterion --no single dominant Kabloona institution--is diametrically opposed to Vallee's evaluation. Even Yellowknife, the most diversified resource

town north of 60, is highly dependent upon the private gold-mining operations (Department of Indian Affairs and Northern Development. Socio-Economic Implications of Gold Mine Closure in the Yellowknife Region., 1972, 11, 22, 36, 47).

In summary, few resource-development towns will meet most of Vallee's criteria; community cohesion and association formation will therefore be inhibited. Inuit who live in such towns will find themselves in communities that are fragmented, lack a strong community organization, and promote segregation and discrimination.

3.4 The Impact of Development on the Traditional Inuit Culture

Prior to the period of non-renewable resource development in the north, Kabloona expansion had affected the Inuit culture considerably. Religion, language, values, and other changes began many years ago. Yet the pace and extent of change is expected to increase dramatically with resource development.

3.4.1 Changing Value Systems

Some dominant values in the traditional Inuit life style were sharing, seniority and respect, acceptance and withdrawal, frankness, creativity, and family solidarity (Williamson, 1969). Several of these values will change dramatically in resource towns.

3.4.1.1 Sharing

Sharing is discussed above as an aspect of a subsistence economy as a means of collective preservation in a harsh environment. With increasing northern development and the subsequent change to a surplus wage economy, the sharing ethic is being rapidly eroded. In its place materialism, individualism, and singular actions and attitudes are emphasized. This seems to result directly from develop-

ment because such changes are most prevalent in the Mackenzie Valley Inuit where the highest development levels have been experienced (Wolforth, 1971, 47).

Erosion of the sharing ethic represents more than a change in Inuit value systems. It can result in social conflict within the culture: "Regularly employed and relatively well-paid native workers are often pressured to share their bounty with less-fortunate friends or kinsmen. Refusal to do so can lead to hostility and social isolation and... internal stress in the family" (Jamieson, 1974, 104). Williamson (1969, 277) cites the example of one employed Inuk who was under great pressure to share his fortune with his kinfolk. At the same time the area administrator was pressuring him to support only his wife and children. "In the face of this pressure, the man ultimately left his job and returned to hunting and government relief. In the process, he ceased to be sullen, harried,and miserable and though his income was much smaller and much less reliable, he became emotionally more secure and discernably more happy".

Because the value of sharing differs fundamentally between the traditionally Inuit and the Kabloona societies, Inuit associated with both groups are under great social pressure resulting in intra-cultural conflict. Generally, as more and more Inuit enter the wage economy it is expected that sharing will decrease and individualism and materialism will increase. Associated with this change will be an increase in internal social conflicts.

The change in sharing patterns associated with development also could reduce the viability of living off the land. If the erosion of sharing permeates the culture, a necessary aspect of

of social life on the land could be eliminated. If the Nunamuit* (those Inuit who choose to live on the land) also adopt the Kabloona values as the Kabloonamuit* (those who live in wage-economy settlements) have done, a necessary insurance for successful life on the land will disappear. Erosion of the sharing principle could considerably reduce the viability and feasibility of the traditional livelihood methods where sharing was necessary for survival.

3.4.1.2 Respect and Seniority

The Inuit culture places high value upon respect and seniority (Williamson, 1969, 269-272). With the influx of Kabloona values these features may not persist. For the Kabloona society values youth and newness as exhibited by clothing fashions, media advertising, cosmetics, and the general desire to "look and act young". Senior citizens often are ignored, regarded as burdens to be endured, and isolated in special institutions. As a result of these differences in values and attitudes associated with the alien development culture, the roles of senior Inuit could deteriorate; they may become as forgotten as their Kabloona counterparts. With the migration to resource-development jobs and towns, the elderly may be left behind physically and socially. The result will be a partial fragmentation of family solidarity and kinship which in turn could lead to loneliness and bitterness for elderly natives.

3.4.1.3 The Value for Acceptance, Tolerance and Withdrawal (arunamut)

> The traditional pattern of acceptance of vicissitudes about which the individual or the group can do nothing tends to persist in the modern context wherever individuals have not learned the techniques of manipulating modern organizational practices and retained the non-assertiveness in social relations that was more common in the past (Williamson, 1969, 279).

*Terms developed by Vallee, The Kabloona and Eskimo, 1962.

Acceptance of change has been a traditional Inuit value and it is evidenced by flexibility of their social system (Willmott, 1968, 155-156; Williamson, 1969, 279). This led to more rapid acculturation than would be expected in a rigidly-structured society. Coupled with acceptance is withdrawal and tolerance values.

These phenomena are important not only in the sense that they provide an environment facilitating socio-economic and cultural change but they are also negative in the sense that they permit uncontrolled acculturation which is possible under development conditions. Initially it appears that Inuit stoicism (arunamut) could lead to relatively swift and painless assimilation into the wage economy. However, the change albeit swift, is not necessarily painless. Simply because the natives tend not to complain about certain situations does not mean that they are satisfied. Inuit failure to voice complaints and opposition tends to allow development and change to continue unchecked while inwardly, frustration may be rampant.

Acceptance, tolerance, and withdrawal were perfectly suited to the traditional way of life where community solidarity was essential and vicissitudes of the natural environment were common and uncontrollable. In modern Inuit society, these values and attitudes can be dangerous for two reasons. Acculturation associated with development, which can to a certain extent be controlled, could continue unchecked whether desired or not. The pervasive dominance of the Kabloona in the natural and social environment is an example of this.

Secondly, the arunamut syndrome is dysfunctional in that it provides few controls, social guides, or institutional arrangements for new situations. Alcoholism, drunkenness, high crime rates and so forth were not part of the traditional lifestyle. Naturally strategies and institutional arrangements did not evolve to control non-existent

problems. These changes are akin to natural phenomena. Just as the Inuit stated arunamut to the vagaries of the weather, they say arunamut to Kabloona vagaries. They seem to regard them as things controlled from outside their culture. For example, alcoholism and drinking are modes of behaviour where the Inuit look to the Kabloona rather than their own society for guidance: culturally integrated modes of control have so far not largely been developed (Williamson, 1969, 280).

> Tutelage with respect to drinking proceeds in the orbit of Euro-Canadian control. Eskimos concerned about drinking hold the Euro-Canadian responsible for what they deem to be the troubles promoted by alcohol. They expect him to use his power and responsibility more than he has in fact done, in order to correct conditions (Honigman and Honigman, 1968, 200).

Therefore, the values of acceptance, withdrawal, and tolerance tend to erode Inuit social guides. The above example concerning alcohol shows how these social guides, when dysfunctional, can lead to severe social repercussions. The Inuit have no traditional means of controlling these new, introduced problems. Moreover, they appear to regard them as beyond their control like weather changes. Their stoicism prevents the evolution and development of new strategies and institutional arrangements to facilitate successful participation and to control development.

3.4.1.4 Family Solidarity

Various changes associated with development are fragmenting the traditional Inuit family solidarity. The causes range from an increased propensity among the young to leave the traditional land-lifestyle for participation in a wage economy to the increased use of partitioned housing in the north which tends to restrict physical and social interaction. The breakdown of family solidarity--a cornerstone

of the Inuit culture--could contribute significantly to the recent increase in social disorganization. The wage economy - land economy dichotomy can separate parents and children through differential social goals (strategies) and different social values (perceptions, attitudes and values). It has been observed that younger Inuit, by and large, regard entrance in to the Kabloona wage economy as more favourable than life on the land: "the young people appear not to be particularly interested in practicing the traditional skills of their fathers" (Naysmith, 1972, 5-6). Therefore, the socio-economic underpinnings of society are radically different over but one generation. This can lead to mutual misunderstanding by both age groups and the breakdown of the family as a cultural, social,and economic unit. A family unit with a long history of cohesiveness and necessary closeness will suffer broad effects from this erosion.

Schooling, medical care, vocational training, apprenticeship training, and wage employment all tend to separate parents and children geographically.The children often must leave home to live in school hostels, receive medical treatment, or obtain wage employment or training. Similarly, dispersed housing and partitioned housing can either geographically or physically separate family sub-groups.

> Equally, in contrast to the past, there are now other sources of learning, new consumption values and demands, dispersed and partitioned housing which does not permit the traditional physical closeness, exile institutional schooling in remote hostels for the children and prolonged hospitalization, each with its own acculturation effects and all weakening the influence of the family as the most important social unit. (Williamson, 1969, 278-279).

3.4.2 Religion and Language

Inuit religion and language have been greatly modified by development. The Mackenzie Delta, the region of greatest Kabloona intrusion, has the highest level of English usage north of the 60 parallel (Table 9).

In fact, 76.6% of the native population can speak English and 20.0% can only speak English. Only 3.4% of the people understand no English. In the remainder of the Arctic lack of English knowledge ranges from 52.4 to 60.8% (Table 9). The Inuit language will, however, languish with resource development assuming future changes follow present trends.

The factors for the reduction in use of the Inuit tongue are the general dominance of the Kabloona social economy, the necessity of English knowledge for successful economic interaction, and the lack of a standard spoken and written Inuit dialect. The Inuit language is divided into five dialetic groups:

(1) Greenland
(2) Labrador and Northern Quebec
(3) Central-Baffin, Coopermine and Archipelago
(4) Caribou or Barrenland
(5) Mackenzie or Western
(Lefebvre, 1963, 15-18).

Moreover, the written form the the language was introduced from the south and at least two general forms of orthography are used: the syllabic and the arabic (Kabloona) characters. Given the concern expressed for preservation of the French language in Quebec, despite an accepted written and spoken dialect and millions of Quebecois, it seems likely that the Inuit language could succumb rapidly under continued acculturation.

According to Lefebvre (1963, 17), two necessary ingredients for preservation of the Inuit language are "unification of the many dialects we have now in the North...(and)...the acceptance of a standard written and spoken dialect..." A further consideration is the provision of native language education in the schools. Currently classes are conducted in English.

Little can be said about the impact of resource development on the Inuit religion for intrepid missionaries were hard at work converting the Inuit in the 1800's, primarily to the Anglican and Roman Catholic faiths (Wolforth, 1971, 31; Vallee, 1962, 24). Development will simply entrench Kabloona religion and the traditional native religion will continue to wither. Ramifications of this occurrence are unknown other than the acknowledgement that this change will contribute to general cultural erosion.

CHAPTER 4

CONCLUSIONS

4.1 Summary

Mining, oil, gas, and hydroelectric development have caused serious and widespread change in Inuit society, economies, and culture. It is expected that past and present trends will continue in future at increasing rates.

The key to solving the socio-economic problems associated with non-renewable resource development lies not in after-the-fact remedial action but in understanding the causes of socio-economic change. Solutions will not lie in modifying effects but in evaluating and ameliorating causes.

There are many causes of the deleterious effects of socio-economic change. Fundamental differences in Kabloona and Inuit social goals, values, and technology have restricted the Inuit socio-economic opportunities physically and mentally. It is difficult to function successfully under alien goals, rules, and enforcement agencies. Moreover, as a result of constraints to effective Inuit participation in northern development, the natives have become dependent upon the Kabloona. From the Kabloona comes employment opportunities, food, clothing, housing, medical care, laws, by-laws, and statutes.

Many Inuit have lost their freedom, independence, and life goals. They do not understand or appreciate the Kabloona alternatives, and due to various constraints, they have great difficulty in achieving them. They are becoming a marginal culture trapped between the traditional lifestyle and the Kabloona lifestyle. Seemingly they can

neither retain the former nor achieve the latter.

4.2 Scenarios for the Future

Two different scenarios have been constructed to consolidate previous discussions and suggest possible futures for the Canadian Inuit. The scenarios are antipodal extremes and the possibility futures intermediate between the extreme positions should not be ignored.

4.2.1 Scenario One: Cultural Extinction Through Assimilation

Scenario one is constructed on the assumption of continued unrestricted, non-renewable resource development and concomitant boom-bust economic growth.

In industrialized countries energy and mineral shortages have reached crisis proportions. Consequently the federal government rescinds the already inadequate environmental and social legislation regarding northern development. The Mackenzie Valley Pipeline is looped, and new gas and oil conduits are added. Exploration is expanding at a frantic pace stiumlated by high prices, tax write-offs, and the formation of several additional resource crown corporations. The northern landscape is dotted with seismic thermokarst ditches, oil and gas derricks, and mine towns. Highways, hydroelectric corridors, and feeder pipelines crisscross the landscape preventing or disrupting migratory movements of mammals such as the caribou. Many additional wildlife habitats have been destroyed in the course of development.

The people of the north, the Inuit, are now sedentary, located in a series of urban centres surrounding gas and oil patches, mines, and construction sites. Those that have not long-since been attracted by wage employment opportunities in Kablona industries have been forced off the land. The Nunamuit - those choosing the traditional way of life - have lost the opportunity to continue as their forefathers.

Hydroelectric lakes, power and transportation corridors, mines, and energy fields have displaced some Inuit from their camps and hunting territories. Inuit not directly displaced from the land have had the option of the traditional lifestyle precluded by two major developments: caribou, whale, seal, white fox, and muskrat populations have been decimated; and the Inuit population has grown rapidly. There are no longer enough renewable resources to support the people. Only one alternative remains. Most Inuit must migrate to the northern urban centres or starve.

Some resource towns have gone "bust" due to resource depletion; the Inuit are unemployed and the welfare cheque is ubiquitous. All Inuit are now English-speaking Christians who must live in prefabricated subsidized tenements. These settlements are economic ghost towns. Many people live there but the construction project, mine, or oil company that initiated the towns closed long ago. Missionaries, RCMP, and government social welfare workers are left. Kabloona workers have returned south or migrated to new boom towns elsewhere. The resource ghost towns have relatively sophisticated infrastructures such as recreational facilities. However, there is no means to pay for or maintain them with the collapse of the northern economy. The liquor stores and bars continue to thrive as do the crowded alcohol and drug rehabilitation centres. Jails are located in even the smallest settlements and several large prisons have been built north of the 60 parallel to incarcerate the rising number of criminals. Crime rates are 15 to 20 times the national average.

In regions where resource development continues southern transients continue to move in bringing money to spend on alcohol, drugs, and women. Promiscuity, veneral disease, and prostitution are widespread.

Inuit drawn to these towns are confronted by racial discrimination and poor employment opportunities. Inuit workers who come from hydro-electric dam construction projects find to their dismay, that lack of education or too-specialized apprenticeship on the dam construction work leads only to jobs as mine labourers. Other Inuit who quit school when young to work on the Mackenzie Valley Pipeline, again find work on the looping construction. Still they are labourers but this time they have no illusions about the work; it is simple short-term employment. After three years, they know they will be unemployed, possibly permanently.

The aboriginal culture has been shattered by social and economic erosion. Social values have changed resulting in increased materialism. Societal goals are lacking due to apathy and frustration. Traditional Inuit social guides cannot control aberrant behaviour and neither can Kabloona law enforcement agencies.

Social technology has changed too. Now hunting and trapping are based upon recreational objectives, and utilize the snowmobile, binoculars, and high-powered, automatic, telescopic rifles. Caribou are valued as trophies with the head and antlers more prized than the flesh or hide which are discarded. Around resource towns, recreational overhunting has reduced the already threatened animal population eliminating potential Inuit income supplements. Inuit medical health is low due to poor nutritional practices, disease, and increasing mental illness. Large hospitals and drug addiction centres are necessary in every settlement.

Due to increasing racial and criminal developments in the north the main concerns of administrative, judicial, and legislative agencies are law and order rather than social justice. The increased radicalism

of northern natives in response to past and present injustices and inequities is aggravating problems and increasing inter-cultural hostilities. Race riots, personal crimes, and sabotage are common. Hydrocarbon pipeline shipments have been ahlted several times by bomb damage or threats and the Canadian Armed Forces regularly patrol the conduit.

4.2.2 Scenario Two: Cultural Survival Through Adaptation

Rapid developments of the 1960's and 1970's have somewhat stabilized in the Canadian north due to strict land use and resource management controls imposed by the government. Due to energy conservation measures in the south, recycling programs, and the elimination of all energy exports, much of the northern non-renewable resource base has not been developed. The Mackenzie Valley pipeline will be built in the near future. After years of careful study scientists have ensured through sophisticated route planning and technological design innovations, that its environmental impacts will not disrupt northern physical, biological, or social systems in a major way.

Native peoples realize the limited nature of northern mineral and energy economic opportunities. The Inuit Tapirisat Council, in co-operation with the federal government, has aggressively encouraged the development of renewable rather than non-renewable resource opportunities in the north. With government assistance, the native brotherhood operates co-operatives across the north producing caribou, fish, and fur products for local consumption and export to the growing southern markets.

Careful game management coupled with strict environmental controls have stabilized and improved faunal populations, and a grubstaking program

enables some Inuit to outfit themselves with hunting and trapping equipment to return to the traditional lifestyle on a part- or full-time basis. Some Inuit who are interested in wage employment in the non-renewable sector are attendending vocational schools, manpower apprenticeship programs, business administration colleges, and universities depending upon desired goals. With the judicious development of human resources it appears that Inuit will not only occupy most of the labour, foreman, and superintendent positions but most administrative and executive positions in non-renewable resource development projects as well. The Mackenzie Valley pipeline is a joint project of the Northern Native Brotherhood Councils and the Canada Development Corporation.

Many Inuit who wish to work in northern mines remain living in traditional camps and are flown to mine towns every two weeks. The shift pattern is two weeks work and two weeks off for the natives to hunt, fish, and trap to supply food and clothing, supplement incomes, or recreate.

With the government encouraging staged non-renewable resource utilization and lengthened extraction periods, the boom aspect of resource development has been de-emphasized reducing associated social costs. Economic benefits (boom) have been extended over a longer period due to government regulations regarding minimum extraction periods. Regulations also allow for relocation of willing Inuit workers to areas of new economic opportunities.

The northern economy can be described as diversified when compared to its virtually "monocultural" past. Inuit are working in mines, oil and gas projects, construction, and for the government as before. However, economic opportunities have been enlarged with assistance to the traditional way of life: Inuit operated co-operatives

developing renewable resources, recreational lodges, tours, and artist guilds run by the native brotherhood and associated programs.

The most fundamental change involves the population policy. Paralleling recognition of the long-term importance of a stable population for Canada as a whole, the Inuit have aggressively promoted family planning to regulate the number of northern inhabitants.

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