

The Political Economy of Northern Development

by K. J. Rea

ANALYDD

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Professor Rea's publications include *The Political Economy of the Canadian North* (University of Toronto Press, 1968), a study of the economic development of the Yukon and Northwest Territories to the early 1960s. He has also edited, with J.T. McLeod, a volume of readings, *Business and Government in Canada* (Methuen, 1969). Currently he is studying the economic history of Ontario from World War II to the present and is completing an introductory textbook on political economy.

Professor Rea has acted as a consultant to the British Columbia Health Security Programme Project, the Ontario Committee on the Healing Arts and the Ontario Commission on Post-Secondary Education.

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Foreword

This study by Dr. Kenneth Rea from the University of Toronto Department of Political Economy is the second of six studies commissioned by the Science Council concerning the development of the Canadian north. It reviews the history of northern development in Canada from a political – economic perspective and compares our experience in development with those of several other countries with similar arctic and sub-arctic regions.

Should the Canadian north be developed; if so, when, how, by whom, and for whose benefit? Rea's examination of these issues suggests some pre-conditions that must exist for an equitable solution. Historically, the development of the north has been controlled from centres of economic and political decision making outside the region. However, the growth of the service industries in the north, the decentralization northward of some public administrative agencies, and the emergence of special interest groups based in the north, especially native people's organizations, may affect the balance of internal versus external decision-making power. While there was harmony between private commercial interests and federal and provincial government interests with respect to resource use, the initiation and operation of resource development was left to private firms, largely foreign. With growing public concern over the extent of foreign ownership and control, the Canadian governments must take a more active role in decision making in the resource development field.

As with all background studies, the analysis and conclusions are those of the author and do not necessarily reflect the views of the Science Council.

The other studies concerning northern development are:

- Northern Development and Technology Assessment Systems: A study of petroleum development programs in the Mackenzie Delta – Beaufort Sea Region and the Arctic Islands, Science Council of Canada Background Study No. 34, by Keith et al. (It was released in January 1976.) - Decision Making in the North: Oil Sands Case Study, by Canadian Resourcecon Limited (W.R. Lee, D.K. Strang, G.A. Constable and G.R. Staple) (This will not be published. Mimeographed copies are available from the Science Council.)

- Le processus décisionnel dans la conception et la réalisation du développement nordique au Canada - La Baie James, préparé par Eric Gourdeau avec la collaboration de Pierre Dansereau, Louis Edmond Hamelin et Guy Rocher (This will not be published. Copies are available from the author, Eric Gourdeau, 2376 avenue Royale, Quebec.)

- Arctic Mining: A Case Study of Decision Making - The Strathcona Sound Mine - Baffin Island, by R. Gibson (It is in the process of being revised. No decision has been made whether to publish, to distribute in mimeographed form, or to release to the author.)

- Offshore Petroleum Exploration on the Labrador Continental Shelf: A Study of Decision Making, by R.D. Voyer (This will not be published. Mimeographed copies are available from the Science Council.)

J.J. Shepherd

Executive Director

Science Council of Canada

Preface

I designed this study to provide an overall view of northern development in Canada and abroad. Time and resources limited certain parts of the study, especially consideration of northern development abroad. Because it takes much time to accumulate new primary data, I have dealt only sketchily with some important Canadian social developments, especially the provision of health and educational facilities in the north and the roles played by the native peoples' organizations.

Even with these limitations, my approach remains very broad. I define "the north" to include the northern parts of seven provinces as well as the Yukon and Northwest Territories (NWT). My conception of northern development includes political and, more narrowly-defined, economic relationships. This "political economy" approach to development focusses attention on evolution and the performance of relevant social decision-making systems. It is broader than, but incorporates, both economics and political science: it includes the study of the processes and institutions of the market economy, which are seen as constituting one of several possible systems through which a society may make choices concerning the use of resources, both "human" and "natural": it also concerns itself with the way such choices are made through the medium of political processes and institutions.

Acknowledgements

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Kenneth J. Rea Toronto April 1975

I. Introduction

Defining the Problem

This study provides an overview of northern development in Canada. In the broadest terms, this is governed by the interaction between western industrial culture and the particular environment to be designated as "the north".

A Geographic and Demographic Profile of the North

The Land

For the purposes of this study, we define the Canadian north broadly to include not only areas most geographers would consider to be "northern" – for example, the arctic and subarctic climatic zones, the area lying north of the the tree line or north of the boundary of continuous settlement – but also areas which administrators and policy makers have habitually thought of as "northern". We include, in what we define as the north, most of Hamelin's extreme, far, and middle north and part of what he considered the near north in Alberta, Ontario and Quebec.¹ For historical and contemporary administrative reasons, we include the important mining, forestry and hydro producing areas in northern Ontario and northern Quebec.

In this study the north includes all of the Yukon and Northwest Territories (NWT); British Columbia (B.C.) north of the Prince George - Prince Rupert railway belt; Alberta north of Edmonton; Saskatchewan north of Prince Albert; and Manitoba north of The Pas and east of Lake Winnipeg. In Ontario, we include the area comprising the Northwestern and Northeastern Ontario Planning Regions, but exclude the large centres of Sudbury, Thunder Bay, and the Fort Francis-Rainy River area from most of the discussion. Similarly, we include the adjacent northwestern parts of Quebec, taking in the Abitibi, Témiscaming, Chicoutimi, Mistassini, and northwestern Lac St. Jean regions along with New Quebec and the north shore of the St. Lawrence beyond Sept Isles. We include all Labrador, but none of the Island of Newfoundland. (See Figure I.1.)

Climatically, this definition of the Canadian north includes both the arctic and the subarctic zones of Canada. Geologically it includes virtually all the Canadian Shield, the Hudson Bay lowlands, much of the northern cordillera, and a large part of the interior sedimentary basin underlying the Great Central Plains. Much of the southern part of the area is heavily forested, but north of the tree line is the tundra, an often marshy plain containing rock-outcroppings, and lichens and other rudimentary flora.

The eastern parts of the north are generally cold and, to the southerner, inhospitable environments. Truly arctic climatic conditions prevail from the far northern islands of the arctic archipelago south through New Quebec and Labrador. Even the coastal regions have extreme winter temperatures and short, cool summers. The landscape varies from the polar deserts of the eastern arctic islands, through the relatively wet, mossy land of northern Ungava, to the dense forests east of Hudson Bay and south of latitude 53°. The mountainous and rocky coast of Labrador, pierced by fiords and river outlets are largely





Source: 1971 Census of Canada

devoid of conspicuous vegetation. In southern Labrador, notably in the Hamilton river valley, forests are interspersed with muskeg. Many of the rivers of the Labrador peninsula fall sharply near the coast, creating numerous water-power sites.

Moving west around James Bay, arctic climatic conditions persist, despite the low latitudes, through parts of northeastern Ontario. Much of northern Ontario drains into James Bay or Hudson Bay; the north by our definition extends south across the height of land to include the northern part of the St. Lawrence-Great Lakes watershed.

Most of northern Ontario is in the Canadian Shield and south of the tree line, which skirts the coast of Hudson and James Bays. Near the Bays, however, the Shield gives way to the flat, marshy Hudson Bay lowlands where trees are sparse and disappear entirely along the coast. Within the Shield, the terrain is broken by countless lakes interconnected by streams. Muskeg and swampy areas abound. Soils are thin and unsuited for agriculture except in the clay belt, which extends along the 49th parallel from Lake Abitibi almost to Lake Nipigon about 160 km south of James Bay. The belt has both climatic and soil conditions suitable for agriculture and contains valuable stands of heavy timber.

The shield terrain and the boreal forest continue through western Ontario and northern Manitoba, north along the west coast of Hudson Bay into Keewatin District in the NWT. The climate and terrain of the area west of the Bay resemble those in northeastern Ontario and northwestern Quebec more than those in corresponding latitudes east of the Bay. The tree line and the mean January isotherms trend to the northwest, and relatively favourable subarctic conditions extend into higher latitudes further west.

Except for that part which extends from near Churchill south along the coast into Ontario and which is in the Hudson Bay lowlands, northern Manitoba lies in the Canadian Shield. There are many rapids and falls on the rivers which descend from the shield country to the lowlands. Once serious hazards to Hudson's Bay Company traders, they are now valuable hydroelectric sites. Much of northern Manitoba is heavily forested.

Toward the 60th parallel the forest gives way gradually to the scrubby brush of the "barren lands" of Keewatin District. These barrens, still part of the Shield, but lacking surface vegetation, extend westward into Mackenzie District, where they give way to the Mackenzie Valley lowlands, a northward extension of the Great Central Plains. The plains sweep northwestward in a narrowing triangle with its apex near the Mackenzie River Delta, squeezed between the Shield on the east and the cordillera on the west. The boundary between the Shield and interior plains runs through northern Saskatchewan; eastern Saskatchewan is all within the Shield; a portion of western Saskatchewan lies in the transition zone between the plains and the Shield. Only the extreme northeastern corner of Alberta is in the Shield, the rest of the northern part of the province is flat or gently rolling prairie. Some of the prairie, notably in the Peace River area, is fertile agricultural land. Despite the high latitudes, the climate is subarctic through most of northern Saskatchewan and Alberta, with warm summers,

severe windy continental winters, and light precipitation. These conditions prevail over much of the prairie from the south right up to the Mackenzie Delta.

Most of northern Saskatchewan is forested and, although agriculture is possible in places, poor soils and a short growing season make it generally unsuitable for commercial farming.

Northern Alberta is made up of three distinct physiographic regions. In the northeast corner, around Lake Athabaska, is the Canadian Shield. West of this the plains, where fertile soils abound, stretch to the Peace River Valley and merge with the foothills of the third region, the Rocky Mountains. There are extensive areas of swamp and muskeg throughout northern Alberta and many mixed forests. The climate of northern Alberta varies greatly from east to west because of major changes in elevation, but is generally continental, with cold winters and hot summers.

The rivers and the similarity of the terrain make the western part of Mackenzie District from the 60th parallel north to the arctic coast a natural extension of northern Alberta, while the rougher eastern parts of the district resemble northern Saskatchewan and Manitoba. The latter areas, however, have no "natural" transportation routes to compare to the Athabasca-Slave-Mackenzie river system.

The far northeastern part of B.C. belongs to the geological and topographical forms predominant in the north-central plains. Although there are areas of fertile soil in many of the large interior valleys, forests predominate throughout the entire inland region and, along with minerals, constitute the principal natural resource.

West of the Rockies and the Mackenzie Mountains, northern B.C. and the Yukon Territory share climatic and physical features quite distinct from those of the eastern and central parts of the north. The "natural" orientation of these areas is to the Pacific. Most of northern B.C. is mountainous. It has far fewer lakes and rivers than most parts of northern Canada. The extreme climate varies more with altitude than latitude. High mountain ranges render precipitation highly variable throughout northern B.C. and the Yukon.

The central Yukon comprises a broad plateau of rolling hills and isolated mountain peaks, bounded on the east by the Mackenzie, Franklin, and Richardson ranges which separate the Yukon Territory from Mackenzie District, and on the west by the high Cascade, Coast, and St. Elias ranges. The interior plateau is deeply cut by the principal river of the northwest, the Yukon, and by its large tributaries, the Pelly, Steward, Klondike, and Fortymile. Much of northern Yukon Territory consists of rolling plains falling away to the arctic coast. Tree growth is extensive in south-central Yukon, but large stands of commercial value are usually found only in the main river valleys. Forest cover becomes thin and sporadic toward the arctic coast and the continuous tree line disappears in the mountainous extreme northwest.

The western arctic coast presents a less inhospitable environment than the eastern arctic coast, although distinctly arctic climatic conditions prevail to the east and north of the Mackenzie Delta. Long, cold, and dark winters and desert-like terrain place the arctic archipelago among the least habitable parts of the earth's surface. It is appropriate to visualize the polar regions with the north pole at the centre of a map. The islands of the Canadian high arctic are located in the Arctic Ocean, a 13 million square kilometre (km²) landlocked sea. As described by Moira Dunbar, a continental shelf, most of which is under 100 metres (m) deep, extends from the surrounding land masses. The waters of the shelf are divided into marginal seas – the Chukchi, East Siberian, Laptev, Kara, and Barents. The latter affords an outlet for the Arctic Ocean to the Norwegian Sea. Other minor outlets are via Bering Strait and Baffin Bay. The main channel between the Arctic Ocean and the Atlantic is between Norway and Greenland.²

The climate of the polar region is distinguished by the long, cold winters and the cool, brief summers, during which temperatures do not rise much above the freezing point. The summer is warm enough, however, to melt the winter's light accumulation of snow and to loosen up the pack ice which covers the ocean throughout the year.

The Population

The population of northern Canada is small, concentrated in widely scattered settlements, and largely transient. Because of the direct relation between population growth and particular economic developments in the north, to which is added an extreme seasonal fluctuation, the problems of interpreting population statistics are particularly acute in the north. Collecting such statistics in remote areas is also difficult. Thus any generalizations about northern population trends is suspect.

It is possible to adapt our definition of the north to Canadian census divisions for purposes of establishing the gross distribution and growth patterns for the population.³ We have done this arbitrarily and the results contain a number of anomalies which we will point out.

Tables I.1 and I.2 show basic census data. Figure I.1 shows the census divisions referred to. Beginning in the east, Labrador is a separate census division for which data are available since 1951. The rapid growth of the population there, which more than tripled over the next two decades, is attributable mainly to iron ore mining and hydroelectric power developments. Less than 3 per cent of the population is native Indian and Inuit and, despite the rapid natural increase of that population, nearly all the total increase must be attributed to immigration.

In Quebec, the largest census division is Saguenay (number 60) which includes all the north shore and also the area of New Quebec, designated "C" on the map. Most of the Saguenay population is located in centres along the St. Lawrence, several of which are quite large, notably Sept Isles (24 320 in 1971) and Baie Comeau (12 109). The rapid population growth since 1951 can again be attributed to the mining developments further north which were responsible for the expansion and development of new port and other facilities along the St. Lawrence coast. These developments also explain the population increase in New Quebec since 1951 (Table I.2). Of the approximately 10 000 people in New Quebec in 1971, 1/3 were located in the ironmining town of Schefferville. The native Indian and Inuit population of Saguenay and New Quebec accounts for about 6 per cent of the total.

Census Division	1921	1931	1941	1951	1961	1971
10. Labrador	NA	NA	NA	7 890	13 534	28 166
Quebec						
60. Saguenay	16 663	22 161	29 419	42 664	81 900	111 272
16. Chicoutimi	35 578	55 724	78 881	115 904	157 196	163 348
34. Lac St-Jean Ouest	22 181	30 031	39 061	50 878	61 310	57 074
01. Abitibi	14 807	23 692	67 689	86 356	108 313	112 244
68. Temiscaming	11 764	20 609	40 471	55 102	60 288	54 656
Ontario						
48. Timiskaming	26 657	37 043	50 604	50 016	50 971	46 485
04. Cochrane	26 293	58 033	80 730	83 850	95 666	95 836
46. Sudbury	43 029	58 251	80 815	109 590	165 862	198 079
01. Algoma	43 695	46 444	52 002	64 496	111 408	121 937
47. Thunder Bay	49 560	65 118	85 200	105 367	138 518	145 390
19. Kenora	19 139	25 919	33 372	39 212	51 474	53 23 0
Manitoba						
16.	10 091	19 877	25 452	32 834	46 781	69 218
Saskatchewan						
18.	4 445	6 456	11 039	14 654	20 708	21 821
Alberta						
12.	23 723	34 400	43 973	39 886	47 310	54 647
13.	23 416	37 680	47 155	46 638	45 431	43 786
14.	6 677	10 917	14 281	14 443	19 282	21 665
15.	20 817	44 447	53 491	61 800	76 884	94 762
British Columbia*						
08.	17 631	21 534	25 276	40 276	74 240	128 205
09.	18 986	18 698	18 051	20 854	38 203	56 242
10.	2 144	7 013	8 481	14 395	31 061	43 816
Yukon	4 157	4 230	4 9 1 4	9 096	15 628	18 388
NWT	8 143	9 3 1 6	12 028	16 004	22 998	34 807

Table I.1 – Population of the North by Census Divisions, 1921-71

*Old census divisions.

Table I.2 – Additional Census Data for Northern Canada

Census Division	1921	1931	1941	1951	1961	1971
Quebec						
A. Abitibi District	319	335	2 609	3 385	11 321	21 308
B. Mistassini	841	1 052	1 025	1 3 4 8	1 796	2 702
C. New Quebec	1 958	2 584	3 067	4 470	8 121	10 002
British Columbia*						
2. Bulkley-Nechako	NA	NA	7 889	12 075	17 437	27 145
14. Fraser-Ft. George	"	,,	7 882	14 801	31 726	64 364
16. Kitimat Stikine	,,	,,	7 983	9 669	23 031	37 326
21. Ocean Falls	,,	,,	3 767	5 209	6 260	4 215
23. Peace River Liard	"	,,	8 4 4 4	14 625	31 352	43 996
25. Skeena "A"	"	,,	11 381	13 295	17 592	21 299
27. Stikine	"	,,	1 093	804	1 224	1 419

*New regional districts.

Moving west in Quebec, we include the divisions of Chicoutimi (number 16), Lac St. Jean Ouest (number 34), Abitibi (number 1), and Témiscaming (number 68). Chicoutimi includes several major centres: Chicoutimi (1971 population about 34 000) is the largest, followed by Jonquière (28 430), Arvida (18 448), Chicoutimi-Nord (14 086), and Kenogami (10 970). There is virtually no native Indian population recorded. The Lac St. Jean Ouest division (number 34) also includes relatively large centres, such as Dolbeau, Mistassini, and Roberval on its southeast fringe.

The large Abitibi division (number 1) includes the areas of Mistassini and "Abitibi District" identified as "B" and "A" respectively on the map. Mistassini's just over 2 700 population in 1971 was predominantly native Indian (2 535). Abitibi district ("A") by contrast has experienced heavy immigration associated with mining and other developments since World War II. The population has more than doubled in each of the past two census decades and consequently the native population is now a negligible proportion of the total.

Four-fifths of the population of Abitibi division is found in the southwestern segment which encompasses the mining and pulp and paper centres along the CNR east of Lake Abitibi. The rapid growth of population in this region occurred in the 1920s and 1930s. The same general pattern is found in Témiscaming (number 68), where about half the total population is located in the Noranda-Rouyn conurbation. This is one of the few northern census divisions to show an absolute decline in population during recent years. The other absolute declines are found in adjacent Ontario divisions which share the same economic base.

Division number 48 in Ontario (Timiskaming) includes long established but declining mining centres such as Cobalt and Kirkland Lake. Their decline is reflected in the decrease in the division's total population since 1941. Similar trends are evident in the data for the large Cochrane division (number 4) further north. The latter division includes a substantial native Indian population but, due to the nonnative population in the mining and pulp and paper towns in the southern part of the division, it accounts for only about 3.5 per cent of the total.

Census divisions 1 and 46, lying south of Cochrane, include two major cities which should probably be excluded from "the north". Census division number 46 includes Sudbury which, with its satellite towns, accounts for at least half the total population of this division. Similarly, census division 1 (Algoma), includes Sault Ste. Marie, which had a 1971 population of over 80 000 out of the division's total of approximately 122 000.

Further west census divisions 47 and 19 comprise all but the southwestern Rainy River area of northwestern Ontario. Number 47 (Thunder Bay) includes another major city, Thunder Bay, which accounted in 1971 for 108 411 of the division's total population of 145 390. Number 19 (Kenora) further north is an enormous geographical area with a small, scattered population of which more than 20 per cent is native Indian.

Northern Manitoba consists of a single census division, number

16, which contained in 1971 a native Indian population of about 21 000 and several important urban centres – The Pas, Flin Flon, and Thompson. Much of the population growth of the last two census decades in northern Manitoba is attributable to the growth of Thompson, which in 1971 accounted for 19 000 of the division's total population of 69 218.

Northern Saskatchewan also comprises a single census division, number 18, just over half the total population of which is native Indian.

In Alberta, a case could be made for limiting this discussion to census divisions 12 and 15, but for reasons which will become clear when we discuss the development of northern Alberta resources, we also included divisions 13 and 14. Table I.1 shows that the population of division 12 grew only slowly in the post-war decades and that of division 13 has actually declined. Since the 1971 census, developments associated with the tar sands will have drastically altered this trend. In 1971 native Indians comprised about 15 per cent of the population in the northeast.

Northwestern Alberta includes a large population based on agriculture, especially in the Peace River region, which makes it atypical of the north as a whole. Native Indians comprised about 12 per cent of the population of census division 15 in 1971. Census division 14 further south includes several important towns such as Edson (3 818 in 1971), Hinton (4 911), and Whitecourt (3 202).

B.C. presents certain difficulties when we attempt to reconcile census divisions with our definition of the north because of the redefining of these divisions to conform to the Regional District boundaries established between the 1966 and 1971 censuses. Figure I.1 shows the divisions based on the regional districts used for the 1971 census. The corresponding data are shown in Table I.2. Figure I.2 shows the old divisions with data based on pre-1971 census divisions. These data are updated to 1971 in Table I.1.

The rapid population growth in the new census division 14 (Fraser – Ft. George) is largely accounted for by heavy immigration attracted by the forest industry developments centred at Prince George. In 1971 Prince George had a population of over 33 000. The new town of Mackenzie (2 332 in 1971) is also in the census division. Substantial native Indian populations are found in northern B.C., particularly in the western divisions. About 16 per cent of the Kitimat-Stikine (number 16) division's total was classed as native Indian in 1971.

The Yukon and NWT comprise separate census divisions. Much of the Yukon's population is centred in Whitehorse: most of that of the NWT is in the Mackenzie Valley. About 14 per cent of the Yukon population in 1971 was native Indian. The native population of the NWT is much greater both in absolute numbers (about 7 200 in 1971) and as a proportion of the total (over 30 per cent in 1971). In the NWT 23 657 of the total population of 34 807 in 1971 was located in Mackenzie District, 3 402 in Keewatin, and 7 747 in Franklin.



Economic Growth and Economic Development

It is important to distinguish here between two terms "economic growth" and "economic development", which are often used interchangeably in casual conversation. We will use "economic growth" to refer to an increase in the productive capacity of the economy of a region or community as measured, for example, by changes in the real value of goods or services produced in it. Economic growth might be caused by the discovery and exploitation of previously unused natural resources, or by the physical enlargement of an existing mining or forestry enterprise. Thus a region could experience economic growth without there being any change in the type of economic activity being carried on there. For example, in a northern Ontario community dependent on a pulp and paper mill for employment and income, any increase in the real output of that mill would constitute "growth" of the local economy. In the terminology used here, however, we would not say that there had been any economic *development* in this situation.

By "economic development" we mean a change in *structure* of an economy, particularly a change in the direction of less reliance on primary extractive activities such as farming, logging, and mining, and more on secondary manufacturing and processing for employment and income in the area.

Historically, western economists have used the term "economic development" almost as a synonym for "industrialization". Thus, right after World War II, most development programs involved measures to promote manufacturing, especially "heavy" industries such as steel and metal fabricating. Such a strategy represented an (now somewhat discredited) attempt to create development immediately by installing modern industry in countries previously dependent on raw material extraction. Despite the failure of such strategies, the association of development with industrialization continues. Recently, the rise in importance of the so-called "tertiary" or "service producing" types of economic activity in the industrialized economies has complicated our understanding of "development". In Canada, the growth rates of financial and commercial activities, the personal service industries, health, education, and other "professional" services, have outstripped the growth rates of all other kinds of economic activity. Primary activities have declined in importance as sources of employment and the slack has been taken up more by the expanding service sector than by manufacturing and other "secondary" types of productive activity. Thus economic development may entail a shift of emphasis (as measured by occupational distribution of the labour force, for example) from primary employment to either secondary (manufacturing) or to the tertiary (service) employments. This has been important in the case of the Canadian north. Historically, the north has displayed a tendency toward "growth" without "development". More recently it has displayed a tendency to develop like a "post-industrial" region, having skipped the industrialization stage, except in some of the areas along the southern fringe.

The Political Economy of Development

The experience of under-developed countries since World War II has shown the interdependence of the economic and political forces which control development. While a country's potential for growth and development may be constrained by certain strictly economic circumstances, such as the resource base, access to markets, size and quality of the labour force, supplies of capital, and so on, the country's actual growth and development within these constraints are shaped by political considerations. Nor does the market for the country's products depend upon the "forces of supply and demand". Markets everywhere are regulated to a degree which prevents "supply and demand" from shaping and pacing growth and development. Because of this deliberate, discretionary manipulation of economic forces, growth and development are better approached from a "political" economy than a "market" economy perspective. Much of this study is concerned with the way policy has shaped the economic life of northern Canada and how various organizations and interest groups have influenced the formulation and implementation of this policy.

The word "development" implies, in the context of this study, some economic self-determination in the north. For example, the expansion of local mining industries may create markets for wood products, such as mining props and timbers, which might conceivably be supplied by the establishment of a local forestry industry. Such linkages can lead to "self-sustaining development" in a particular region. In fact, such linkages are usually weak in northern Canada: thus the area has tended to "grow" rather than to "develop" economically. The "self-determining" elements of the economy of northern Canada are unimportant relative to external influences.

The term "development" may apply not only to economic, but also to political and social aspects of life in a country or region. Again, the term implies the creation of opportunities for "self-determination", for a country or region's political and socio-cultural experience to be shaped by internal forces.

The Issues

We have adopted a political economy approach and will consider both economic and political issues. These are essentially the same in the north as elsewhere.

Economic Issues

The economic issues involve not only growth and development, but also the matters of efficiency, stability, and distribution. Like the terms "growth" and "development", the latter three concepts have special meanings in conventional economic literature.

Economists use the term "efficiency" to refer to an optimum allocation of resources, usually in terms of human "welfare". Each society must decide on the uses of scarce economic resources, such as labour, capital goods, and raw materials. Although such decisions could be left to chance, most societies have tried to evolve systems for allocating resources so as to achieve the greatest possible satisfaction ("welfare") for the community as a whole. These systems can have important spatial effects, particularly in a large country like Canada. For example, an efficiency issue could take the form of a question such as, "Would total welfare in Canada be greater if we allocated one million person hours to an improved road between points X and Y in the Yukon or to a widening of Bayview Avenue in Toronto?" In conventional economic analysis, such issues are normally assessed in the context of a static system, and the ideal outcome is conceived of in terms of some criterion of "static allocative efficiency". It is also possible, however, to assess allocation among alternative uses over time, that is, to think in terms of "dynamic allocative efficiency" and determine whether a resource would yield greater satisfaction if used to create a future rather than a present benefit.

"Stability" issues involve short-term fluctuations in the levels of employment and income. The productive capacity of the economy must be fully utilized to avoid the waste of satisfactions which occurs when resources are unemployed or under-employed. Such issues are involved when regional disparities develop due to higher unemployment in some areas or due to uneven regional impacts of national measures.

"Distribution" refers to the sharing out of the products of the economy. All societies must adopt some distribution system. Problems arise when occupational groups, or even whole regional populations are dissatisfied with their share of the total output of goods and services. In modern states, income is often deliberately transferred from the people of one region to those of another, as well as among earners of different levels of income, giving rise to controversy about what is "equitable".

All these issues arise in connection with the Canadian north. Would it be "efficient" to allocate more resources to northern development? Can an expansion of economic activity in the north be reconciled with maintaining reasonable stability in the Canadian economy and in the country's economic relationship with the rest of the world? Are incomes in the north equitable? Is the economy of the north being developed rapidly enough or too rapidly? If we relied upon a pure market system to make all these "decisions" about allocation and distribution, and if we relied on it to keep the system stable and expanding at the right rate, our economic life would not be so bound up in politics as it is. But, in fact, we also use our systems of political decision-making to allocate, distribute, stabilize, and develop. Consequently the economic issues become political issues.

Political Issues

The fundamental political issues have historically focussed on how the north should be developed and who should benefit. Over the years several federal and provincial governments have enunciated northern development policies which we will refer to in subsequent sections. The question of whether growth and development were desirable has occasionally arisen – notably at the turn of the century with the conserva-

tion movement and, more recently, with the "ecology" movement. But throughout most of the period we will be discussing, the belief in growth and resource exploitation as necessary to "progress" was strong.

Governments have stood or fallen on their ability to devise measures that would develop the hinterland *now*. They have seen the "problem of northern development" mainly as a matter of overcoming physical obstacles to the exploitation of resources – that is, as an engineering problem.

The preoccupation with growth has also overshadowed the question of who would benefit from developing the north. The easy and seemingly persuasive answer was simply that everyone would. So long as there were no apparent losers, the question was not politically sensitive. The fact that the permanent population of the north had a negligible interest in or opportunity to participate in the political process, also helped to gloss over potential problems. Now the situation has changed and the question of who will benefit dominates discussions of northern development. An even more fundamental question – "Why develop the north at all?" – remains overshadowed by the growth and development orientation of most Canadians, but may yet emerge as an issue if the zero-growth outlook ever acquires a popular following.

II. Decision-Making Structures and Processes

The Market Mechanism

The system of decision making which relies upon the "forces of supply and demand" to organize the economic life of a community is a relatively modern phenomenon, even though some forms of market behaviour are to be found in ancient history and in many recent and contemporary "primitive societies". In northern Canada there is evidence of a long-established indigenous population, but little is known of either the traditional economy of the native people or of the culture in which it was embedded. What we do know is that even before Europeans established large settlements in the southern parts of what is now Canada, most of the north had already been incorporated into the commercial life of western Europe and the traditional economy of the northern peoples reoriented to serve the needs of distant markets.

One of the most remarkable things about the economic history of northern Canada is how little its essential characteristics have changed in three centuries. Until recently the economy of northern Canada was based mainly on the exploitation of primary resources, producing a few "staple" commodities for export. Consequently, economic growth has been determined by external forces, notably by demands emanating from western Europe and the rest of North America. However, the demands could not be met without incentives to reward effort and initiative; technologies suitable for a frequently intractable natural environment; an information system capable of recording and communicating demands and possibilities; organizations capable of acting on such information; and access to labour and capital.

The system of capitalistic, commercial and industrial enterprise, which became the dominant mode of economic organization in the western world in the late 18th century, met all these requirements. Private ownership of the means of production established commercial profitability as the criterion of resource use and made profits the reward for enterprise; the application of science to problems of production yielded the necessary technologies; market prices provided the versatile information system required by consumers and producers; the corporate form of business enterprise made possible the accumulation of unprecedented concentrations of capital under a single ownership while at the same time reducing risks and making long-term planning feasible. In the 19th century, the emergence of liberal democratic institutions in the principal nation states accommodated this economic system. They provided reasonably stable and peaceful international relations and adopted policies which were tolerant of international movements of goods, workers, and capital.

In such an institutional setting, it would appear likely that individual businesses would be the principal decision-making bodies. To the extent that *laissez-faire* was an ideal in 19th century Canada, the role of the state in the economy was widely held to be one of facilitating and accommodating business. However active the Canadian government may have been in providing social overhead capital in the form of canals, roads, and railways, and despite the social similarities between business and government leaders and the relative weakness of ideological barriers to government involvement in the economic life here, in contrast to the situation in the United States (U.S.), it has become conventional to regard the state's economic role as supplementary rather than primary. Accepting this convention tentatively, we begin our survey of the decision-making structures and processes which have shaped economic activity in northern Canada by looking at the behaviour of commercial business enterprises.

Commercial Enterprise in the North

Please refer to Figures II.1, II.2 and II.3 for geographic locations of places mentioned in the text.

General Characteristics

To be successful under the prevailing conditions of remoteness, lack of transport facilities, and immense area, businesses in the Canadian north have typically had to be large; to have access to outside, usually foreign, financial capital; to be able to import technologies; to be affiliated with outside markets for their product; and to export their products in a crude form except when induced by legislation, financial incentives, or extraordinary transportation costs to add value through processing their output locally. Private firms operating in northern Canada have faced some unusual operating difficulties, some relating to the physical environment, remoteness from centres of population, and other geographical characteristics of the region, but many deriving from the fact that the major natural-resource-using firms have had to operate on Crown land, and, therefore, under regulations which were not always to their commercial advantage.

Fish, fur-bearers, and arctic sea mammals were the first northern Canadian resources to be commercially exploited by Europeans. The Labrador coast, today one of the least developed parts of the north, was probably among the first areas to be exploited. Europeans were fishing off Labrador in the early 16th century, but local settlement in Labrador was discouraged by the techniques and organizational patterns of the early fisheries, notably those of France. When by the mid-18th century the British dominance in the area was confirmed, the island of Newfoundland emerged as the local base for the Labrador "floater" fishery which supplemented the British home-based West Country fishing operations. As Fay notes, the West Country customs records from 1790 on contain references to furs, seal oil, and seal skins, which suggests that a diversified trade was carried on in conjunction with these fisheries.¹

The early European fishermen made contact with Inuit living along the Labrador coast as far south as the Gulf of St. Lawrence. Fur traders subsequently established contact with the Montagnais and Naskapis Indians of the southern and northern interior. Small numbers of European fishermen settled permanently along the coast, often intermarrying with native people and maintaining a meagre existence by supplementing fishing with some hunting and trapping.

The Hudson's Bay Company established fur trading posts in the early stages of European acquaintance with Labrador and this trade Figure II.1 – Canada North of 60°



Figure II.2 - Northern Centres in Western Canada



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subsequently dominated the economy of the interior regions. Moravian missions were also established in Labrador beginning with the mission at Nain in 1771. These missions became directly involved in the fur trade, as well as Christianizing the Inuit and supplying health and welfare services.²

Further north along the arctic coasts whaling became an important industry in the early 18th century. British vessels took whales, particularly the Bowhead, initially in Davis Strait and Baffin Bay, and later, when whales became scarcer, from the less accessible reaches of the arctic archipelago. After 1850, New England whalers had a strong impact on the economy of the arctic because they would winter in the north so as to operate for two successive seasons on each voyage.³ When whaling deteriorated in the eastern arctic in the late 19th century due to depletion of the resource, some whalers turned to trading with the native people, and others to direct exploitation of small whale species such as the beluga, to sealing, and to hunting the walrus and polar bear.

This pattern of economic activity established in the eastern coastal regions in the 18th and 19th centuries continued until World War II. A variety of residents and non-residents continued the Labrador fishery. The number of resident fishermen (the "liveyeres") remained small: by the 1930s, there were only some 5 000 residents. The non-resident fishermen consisted of two groups: one, the several hundred "planters" (or "stationers") who each summer travelled from the island of Newfoundland to temporary camps in Labrador to fish for cod, using small boats and simple gear, and dry-cure their catch onshore. The second group were the schoonermen or "floaters" who operated from larger vessels in which they were able to follow the fish and return their catch to Newfoundland for curing.⁴ This Labrador coastal fishery was an unusual northern commercial enterprise in that it was competitive, had numerous small-scale producing units, and was relatively labourintensive. Yet, like other northern commercial activities, the Labrador fishery was based on a natural resource; most of the product was exported to world markets at prices the producers were unable to influence; most of the capital, labour, and enterprise required came from outside, and only a limited amount of processing was done in the producing region. The industry proved unable to adapt to changing market conditions in the 1950s. The heavily salted "Labrador-cure" cod was sold in relatively stable markets in the Mediterranean and in Puerto Rico until the 1920s when policies of domestic self-sufficiency in some important importing countries, changes in consumer preferences, and increased competition from the Icelandic fishery combined to force the Labrador product off the market. Incomes declined, and by 1954 the industry had virtually ceased to exist. The industry's individualistic organization and its inability to secure public subsidization were responsible.⁵

The whaling industry of the eastern arctic was a different matter. Although competition existed among producers, these producers were each equipped with an elaborately constructed and outfitted ship, with financing and marketing support provided by merchants and traders of ports such as Dundee in Scotland and Boston in the U.S. As with the fisheries, the products, mainly whale oil and whale bone, were exported, with only limited processing in the producing region. Most of the labour was imported, although some Inuit were employed in the industry.

The business practices of the whalers can be explained by orthodox price theory – they were individual profit maximizers operating on a common property resource.⁶ Profits were often great but in the absence of external regulation the whalers not only virtually exterminated the whale population, but also destroyed the traditional native economy of the eastern arctic. They indirectly contributed to the reduction of the wildlife resources upon which the Inuit had once been able to subsist.⁷ They introduced disease and alcohol which further weakened the ability of the Inuit to cope with this deteriorating environment. Scientists exploring the area late in the 19th century were appalled by the condition of the native people.⁸

The fur trade of the interior of Labrador and northern Quebec was part of the North American fur industry which centred on Montreal and Hudson Bay. The principal fur trading posts were established near the mouths of the major rivers along the Labrador coast, around Ungava Bay, and on the eastern shore of Hudson Bay. The interior regions drained by these rivers, however, remained unexplored by the Europeans until the end of the 19th century. From 1839, Hudson's Bay Company traders had an overland route from their post at Fort Chimo on the Koksoak River near Ungava Bay to posts on the lower Hamilton River, but the trade of the region was served mainly by coastal vessels and the interior was left to the Inuit in the north and to the Indians and a small number of European trappers to the south until the 1940s and 1950s.

The fur trade of the Labrador peninsula had two distinct components: that carried on with the Indians of the south, which in organization and product resembled the trade elsewhere in the continental north; and that carried on with the Inuit. The latter was not systematically organized until the early 1900s when the Hudson's Bay Company and some smaller competitors were drawn into the arctic by the increase in the value of the white fox relative to other available species. The Inuit of northern Labrador and Quebec subsequently developed links with European fur trading similar to those of Indians elsewhere in the north, although some important differences remained. One was that the Inuit retained, until recently at least, a greater degree of mobility, hunting over a wide territory with no traditional hunting grounds allocated among them. They also retained an orientation to the sea, which in later years meant alternating between hunting seals, notably the ringed seal, and going inland after the white fox when it was available and of good value.

The Hudson's Bay Company established the first post specifically intended for trading with the Inuit, Wolstenholme, at Eric Cove on the south shore of Hudson Strait in 1909 and opened others throughout the area until World War II. The company's motive was purely commercial. The expected returns from the arctic trade were high enough to attract a number of smaller firms, some of which survived for many years. But, by the 1950s all had disappeared. The reasons are obvious. The uncertain yield of a single crop economy (the fluctuation in the size of the white fox population combined with fluctuations in prices) created serious problems for both the trading company and the Inuit. For the latter it meant extreme and sometimes disastrous fluctuations in income. For the former it meant a need to finance sometimes heavy losses for as many as two years out of four. Added to this were "the large and ever-increasing capital outlay required, the tremendous cost of transporting supplies and personnel and the comparatively few customers throughout the length and breadth of the area".⁹

The development of the fur trade in the St. Lawrence region becomes the story of Canada itself. The St. Lawrence-based fur trade proved a voracious consumer of wilderness as the traders were pushed westward by agricultural settlement and forest industries and lured into the interior by the availability of fur.

The conventional economic history of Canada treats the fur trade as a dynamic but transitory force in the "opening up", first of central Canada, then the northwestern interior, the Pacific coast and, finally, the far northwest and high arctic regions. As a factor in Canadian economic development it takes its place as one of the great "staple trades" upon which depended the investment, population increase, commercial activity, social and political development of the St. Lawrence heartland from the French regime until new staple trades were developed in the first half of the 19th century.¹⁰

However, as a factor in *northern* economic development the fur trade must be viewed from a different perspective. It not only established the basic communications and settlement patterns of the northern economy, it became a permanent structural element in the political economy of the north. Indeed, it is tempting to define the north as that part of Canada in which the fur trade remained an important part of the social, economic, and political-administrative structure after 1821.

In 1821 the Northwest and Hudson's Bay companies amalgamated. The resultant Hudson's Bay Company reorganized the fur trade and established a highly centralized monopolistic system of political economy throughout the north. The four "departments" of the reorganized company shaped the social, economic, and administrative structures of the entire region in accordance with policy decisions made in London. However, the area under this system of control was eroded by the advance of settlement. The Montreal department, which included the Canadas (and later Labrador), was most immediately affected by the economic development and territorial expansion of what are now southern Quebec and Ontario. The western department, which controlled the trade west of the Rocky Mountains, was subjected to the expansion of settlement in the colony of B.C. and competition from American and Russian interests. Least affected were the southern department, which controlled the area east of Hudson Bay and between James Bay and the territory of the Montreal department, and the northern department, which had jurisdiction over the territory between Hudson Bay and the Rockies from the U.S. to the Arctic Ocean.¹¹ The latter "ruled" the continental interior until 1869. Even after the establishment of Canadian federal and provincial jurisdictions, the northern parts of the area, which concern us, remained by default a preserve of the fur traders and missionaries.

Innis refers to the northern department of the Hudson's Bay Company as "an excellent example of the economies of monopoly in the fur trade. Seldom has there been an instance in which monopoly control was exercised over a wide area through such a long period of history in a single industry as in the northern department from 1821 to 1869.¹² Innis and others show that this monopoly control was mainly directed to minimizing production costs. (The Company probably had little power either to expand supply greatly or to influence the market prices.) The strict economizing efforts of the northern department included judicious manipulation of credit privileges, to make the Indians productive by keeping them "in a proper state of subordination";¹³ efforts to achieve self-sufficiency in food and supplies at the various posts by means of local food production; strict recruiting, apprenticeship, and other personnel policies which were applied both to the men imported from England and to "Canadians"; and an elaborate organization of transportation and communication facilities which was devised to keep these major overheads as low as possible.

Even after the Hudson's Bay Company monopoly of administrative and commercial power in the area was dissipated by political and economic changes in the 20th century, the local economy throughout northern Canada retained certain characteristics: almost all the population were dependent on an outside agency for employment and income; the trading posts and the water transportation routes connecting them were the focus of economic activity; temporary European residents carried out local administration and other decision-making activities in the north; the resource base was extremely narrow; income and employment were unstable in the short run and insecure in the long run, being dependent on fluctuating fur yields, international market trends, and the possibility of depletion of the resource.

The decline of the fur trade in southern Canada was due to the effect of agricultural settlement on the fur bearers. In the north, mining and forestry operations can similarly be cited as the cause of the decline of the fur trade. However, enormous areas of the north suitable for fur production were not touched by such operations. In such areas the cause of the decline must have been trapping practices. For one thing, many areas were over-trapped during the period of rivalry between the Hudson's Bay Company and the Northwest Company before 1821.

During the 1830s and 1840s the Hudson's Bay Company attempted to restore beaver populations through direct restrictions on the number and size of beavers which would be purchased and by manipulating its tariff to encourage trappers to concentrate on the more plentiful species. Its subsequent ability to manage these resources was reduced, however, by increasing competition from other traders and by the increasing number of itinerant white trappers who began operating in many parts of the north in the late 19th and early 20th centuries.¹⁴ As a perhaps not entirely disinterested authority has written:

"It should be said at once that the Indian is, by nature, and if

unmolested by white trappers, a wise trapper; that is to say, he realises that he has a permanent interest in the maintenance of the fur supply and that it is to his advantage to avoid overtrapping and to leave enough breeding stock to maintain the population. The same applies to the better type of white trapper who is permanently resident in the country. It is the itinerant trapper who is mostly responsible for the disappearance of the beaver. He comes to a district for one or two seasons only, has no real or permanent interest in it, and is only concerned to make as big a catch in as short a time as possible. Consequently, he traps excessively, often cruelly, and with no regard to the maintenance of the stock. In competition with this trapper the Indian realises he must get what he can while he can and throws his natural caution to the winds. The result is depletion."¹⁵

The provincial and territorial governments imposed restrictions on trapping beaver, muskrat, and some other species in the early 1900s and have since undertaken other conservation measures in order to sustain the traditional incomes of northern residents. In many areas, however, the period between monopoly control by the Hudson's Bay Company and the establishment of effective conservation measures by the provincial and territorial governments was marked by the extinction of the most valuable species of fur bearers and subsequent severe welfare problems for the native populations – problems which governments failed to recognize until recent years.

Expansion of the Export Base and Emergence of the Dual Economy

Beginning in the late 19th century, the early commercial economy of the north, based on fish, marine mammals, and fur, was supplemented by several new resource-based industries, such as logging, mining, and pulp and paper. These industries and related transportation and electric power generating activities, along with some agricultural settlement, broadened the resource base of the area and brought about economic growth. Although these industries created additional income and employment opportunities for northerners, they did little to alter the structure of the economy. In part, this is attributable to a "dual economy" phenomenon encountered in many regions which support western industrialism: the new industry-related activities are carried on in enclaves separated from continuing traditional economic and social arrangements. Many elements of such a dual economy existed in the Canadian north, particularly between 1870 and World War II. Since then the economy has experienced changes: tertiary sector activities have expanded enormously, governments have become more involved in resource exploitation, and the political processes have changed rapidly. In the remainder of this section, we will review some of the major new resource developments undertaken by private enterprise in the north prior to World War II and consider the role of government in shaping these developments. In the succeeding section, we will examine the events of World War II and the post-war years.
Privately-sponsored Developments 1870-1939

The Forest Industries

In the 19th century the timber trade eroded, at least temporarily, the southern limits of the north in central Canada. The demand in Britain for squared timber and the Imperial preferences granted during the Napoleonic wars led private firms to exploit timber along the St. Lawrence and its major tributaries. Subject to minimal control by pre-Confederation governments, the timber companies stripped most of the valuable stands of large trees. In the second half of the century, U.S. markets for sawn lumber gave a new impetus to forest production in central Canada. Because the lumber companies depended on the rivers to move logs to the mills, the height of land between the St. Lawrence and Hudson Bay drainage basins held the northward advance of the industry in check. The subsequent expansion of the lumber industry in the late 19th century was westward as the CPR and Grand Trunk railways opened up the forests north and west of the Great Lakes.

The 19th century forest industry influenced the boundary of the north in central Canada, for despite conflicts between lumbering interests and agricultural settlers, much of the agriculture in north-central Canada was associated with the clearing of forested land, the creation of local markets for foodstuffs by the lumber camps, and the labour attracted by the lumbering activities. But all these activities were divorced from the economy of the north and probably had little direct influence on it. This was not so, however, with the new pulp and paper industry which developed around the turn of the century. Although it too was first established on the margins of the north, it eventually became both technically and commercially feasible to carry the industry deep into the remote spruce forests of the Canadian Shield. In the 20th century the industry has expanded from the St. Lawrence valley through northwestern Quebec, across Ontario, and into the northern parts of the Prairie Provinces.

In central Canada the pulp and paper industry was initially based on stands of spruce, which had little or no value as lumber. Supplies of this material, highly suited as pulpwood, were readily accessible throughout the region. By the 1890s paper making was already an established industry in central Canada: it was begun early in the century using rags as a fibre source, and after 1860 mainly wood pulp.¹⁶ It was not until the 20th century, however, that rising U.S. demands for newsprint led to a massive development of the industry in Canada. American newsprint users, faced with dwindling pulpwood resources in the eastern U.S., sought to develop foreign sources of supply. Despite the bulkiness of pulpwood, transportation facilities were available which made it feasible to import Canadian pulpwood to feed the U.S. paper mills. The governments of Quebec and Ontario, however, sought to promote the establishment of paper mills in Canada by restricting the export of pulpwood. There ensued a protracted struggle between U.S. newsprint users and U.S. paper manufacturers over the possible use of U.S. tariff policy to force withdrawal of these restrictions. The newspaper publishers eventually won this struggle most decisively. Not only was no retaliatory tariff imposed but, beginning in 1913, Canadian newsprint was allowed to enter the U.S. free of duty. Although some Canadian pulpwood continued to be exported to the U.S., the result of free trade in newsprint was that a large part of the U.S. newsprint paper industry moved to Canada.

Thus, the construction of large-scale pulp and paper mills in central Canada was a result of the growth of foreign markets, mainly in the U.S., and the migration of foreign, again mainly U.S., capital and business enterprise to this country. While the industry was also expanded in the Maritimes and B.C., most of the new mills were built in Quebec and Ontario, at such centres as Three Rivers, Sturgeon Falls, Iroquois Falls, Kapuskasing, the Lakehead, and Kenora. Others were located further north, well within the Canadian Shield.¹⁷

The large energy requirements of these mills were met by developing hydroelectric power sites along the northern drainage of the St. Lawrence basin. Many of the early power developments in Quebec were initiated by Canadians but ultimately built and operated with foreign capital.

"Quebec entrepreneurs conceived of many of these plans and obtained the sites from the government extremely cheaply, but, while some developments were financed by Canadian institutions, most were forced to borrow capital abroad, particularly in the United States. Even greater was the dependence on American managerial and engineering skills; the result was often to bring the enterprises firmly under American control."¹⁸

Some hydroelectric power companies preceded the pulp and paper plants and attracted the latter to particular locations by providing cheap surplus power.

The pulp and paper industry in Quebec and Ontario expanded during the 10 years following World War I. The number of firms increased rapidly. Both new and established U.S. firms moved north of the border; British, French, and Belgian firms established themselves in the industry; and some lumber companies operating in central Canada converted to pulp and paper production. The development of the industry up to World War II was marked by excess productive capacity, concentration of ownership and control, oligopolistic pricing practices, and increased government involvement.

The newsprint manufacturing capacity of Canadian mills more than doubled in the 1920s. Most of this new investment was in eastern mills, particularly in Quebec and Ontario.¹⁹ During this decade three firms became dominant in the industry. One was the Canadian International Paper Company (CIP), a subsidiary of the U.S. International Paper and Power Company (IPC), operating newsprint mills at Three Rivers, Kipawa, Hawkesbury, and Gatineau; a paper bag plant in Ottawa; fibre board mills at Gatineau and Midland; power plants at Ottawa and on the Gatineau river; and a variety of enterprises in New Brunswick.²⁰ Sir Herbert Holt, president of the Royal Bank, and some others, assembled a second major organization, the Canada Power and Paper Company from a number of existing companies. The third firm, the Abitibi Power and Paper Company, was organized to succeed the old Abitibi Pulp and Paper Company and to develop power sites on the Abitibi River in Ontario. It operated a newsprint mill at Iroquois Falls and had a major interest in the mills operated by the Ste. Anne

Paper Company and the Manitoba Paper Company. In the early 1920s it became associated with, and in 1928 amalgamated with, the large Spanish River Company, thereby gaining control of newsprint mills at Espanola, Sturgeon Falls, and Sault Ste. Marie.²¹

This amalgamation movement in the pulp and paper industry reached a peak in $1930.^{22}$ Bladen claims amalgamations aimed to reduce costs through the technical advantages which they yielded and to maintain higher prices by controlling competition. He also claims that the ready market for securities of consolidated pulp and paper companies influenced the decisions to amalgamate.²³

The amalgamations did not, however, enable the industry to operate effectively as a cartel to control production of individual producers and to fix prices. Despite several attempts to establish an industry-wide regulatory agency to replace the price leadership provided by IPC in the 1920s, the deteriorating market conditions in the 1930s led to the financial collapse of most of the companies involved. Nearly all the important newsprint companies in eastern Canada either defaulted on their bonds or passed into receivership.²⁴ Many mills closed down or reduced output, creating disastrous reductions in employment and income in the surrounding communities. Bladen cites the case of Espanola, a company town solely based on the mill built by the Spanish River Pulp and Paper Company. The mill closed in 1930: population fell from nearly 4 000 in 1928 to 1 200 by 1940, 1 000 of whom were on relief.²⁵

"Where common ownership of newspapers and mills exists, publishers do not reduce their purchases of paper more than absolutely necessary. And where, as among many newspapers, paper is bought partly from other mills than the ones owned by the publishers, these purchases are reduced first. Financial ties, therefore, assisted American mills in retaining their market. Furthermore, the sales organizations of American producers are possibly more closely allied to the publishers than the Canadian and therefore more successful in retaining their patronage."²⁶

Marshall, Southard and Taylor estimated that the 10 companies, out of a total of 23 companies operating in Canada in the 1930s, which were American-owned accounted for about 40 per cent of total productive capacity.²⁷ Guthrie estimated that they accounted for 54 per cent in 1935.²⁸

The inability of the newsprint producers to work out voluntary agreements to enable the industry to weather the crisis brought on by over-expansion and the depression, drew the Quebec and Ontario governments into active involvement. The provincial premiers pressured certain firms to comply with regulations governing competitive price cutting and other disruptive practices, and to join a scheme of prorating production worked out by the two governments and the mills not owned by publishers. The latter remained outside the scheme but, despite this and despite serious problems of enforcement in the part of the industry that *was* covered, the scheme helped stabilize conditions in the industry in 1938 and 1939.

Mining

Mineral development in northern Canada, prior to World War II, was initially financed and managed by small private firms which were often established for the purpose of developing specific finds. Although in the 19th century, government became involved in mapping and surveying, in regulating mineral lands, in issuing exploration and mining permits, in collecting royalties and taxes, and so on, individuals did the actual prospecting and private companies the mining of proven deposits. The risks and the high transportation and other costs limited the early mineral developments in northern Canada to a search for precious metals in the more accessible mineralized regions, namely: the central and northern interior of B.C. and Yukon, and those parts of northern Ontario and Quebec opened up by railway construction between 1867 and 1914.

Innis writes as follows about political economic development on the Pacific coast:

"The Pacific Coast drainage basin on the North American continent presented a fundamental contrast in geographic background with the vast relatively level territory which drains to the Atlantic and the Arctic. The sharpness of the contrast was evident in the economy of the Aborigines and in the economy of the European peoples who settled in that region. The difficulty of its topography, and its distance from the Atlantic, by land or by sea, restricted its economic development and placed decided limitations on possible lines of growth. In the north the fur trade extended from the St. Lawrence, Hudson Bay, and the Missouri across the heights of land to the important rivers of the Pacific Coast, the Columbia, the Fraser, and the Yukon, but control was difficult and even the Hudson's Bay Company found it necessary to create a separate department. The chequered political history of the Pacific Coast reflected the loose control of large organizations from the Atlantic and the conflict between controls of the approaches from the sea and from the land."29

The fur trade and placer mining opened northern B.C. and the central Yukon plateau to the influences of western industrialism. The placer gold mining industry originated in the 1848 California gold rush. As the placer fields of California were depleted, miners moved northward in search of new deposits. The placer mining industry of the Canadian northwest was thus a direct extension of the U.S. mining industry. A cosmopolitan labour force of prospectors and a variety of workers and small entrepreneurs brought the industry north. They brought with them considerable amounts of capital, much of which was acquired in the U.S. placer fields, and the technology by which the resource was made exploitable. "Each successive discovery of placer gold acted as a gigantic pump, unpredictable as to time and strength of stroke, which drew enormous supplies of labour and capital into the field concerned and, in turn, poured labour and capital into new industries."³⁰

The existence of placer gold in interior B.C. (and in the coastal islands) was well known to fur traders by the mid 19th century. But the Hudson's Bay Company was primarily interested in keeping the

attention of the native people focussed on trapping. In 1858 news of placer gold on the lower Fraser River reached San Francisco and the first rush into Canadian territory began. Despite the efforts of thousands of prospectors who immediately flooded the area, no major finds were made until 1859, by which time the search had penetrated the central interior. The Caribou became a major gold-producing region in the 1860s: the peak of production was reached in 1863. Small independent operators using labour intensive techniques did most of the mining. The total population drawn into B.C. by such developments was considerable. Between March and June 1858, for example, over 20 000 men from San Francisco landed at Victoria and another 8 000 came overland.³¹

Although the placer booms were short-lived, they had a strong impact on the development of northern B.C. They were directly responsible for intensive exploration and prospecting throughout the region, for the development of the first roads, and for the establishment of effective political administration in the area.

During the 1870s and 1880s the search for new placer fields spread out from the Caribou country. The only major discoveries were made in the Cassiar district. Substantial finds on Thibert's Creek (flowing into Dease Lake) in 1872 and two years later on the Dease and McDame creeks drew some 1 400 people into the region by 1874 and brought about the establishment of the villages of Laketon and McDame.³² Subsequently the usual cycle of expansion and decline characteristic of placer development ensued. Production reached a peak in 1876; transportation facilities were improved, including roads and a steamship service on Dease Lake; local sources of supply were established for foodstuffs, fuel, and building materials. As the rich gravels were worked out, mining became more intensive: more capital equipment was used and the working season was extended into the winter months. Even so, within a decade the district was virtually abandoned.

Other important placer deposits in northern B.C. were found in the Parsnip River (1861), Vital Creek (1869), Germanson Creek (1870), Manson River (1871), Atlin (1898), and McConnell Creek and the Ingenika River (1899). Of these, the Atlin field was by far the most important.³³ But the next great stroke of the pump was the Klondike boom which created Yukon Territory in the 1890s.

In the 1870s prospectors who travelled inland from Sitka and downstream on the Yukon River initiated the Klondike gold rush. A number of deposits were worked successfully in the 1870s and 1880s, but these finds were eclipsed by the spectacular strike on Bonanza Creek in 1896 which laid the foundation of the Yukon mining industry – and indeed of the whole political and economic structure of the region. Attempts were made to expand the resource base by developing other mineral resources of the region once the characteristic collapse of the placer industry set in.³⁴

The first few years of the Klondike boom were marked by smallscale placer mining of the richest and most accessible gravels. After 1900 these operations were replaced by capital intensive dredging and hydraulic mining methods. Because the government did not provide the required capital facilities, the Klondike was taken over by large firms capable of financing their own electric power plants, water diversion systems, and large mechanical dredges. Because such large-scale placer mining required only a small labour force, the population of the area declined rapidly and, with it, much of the secondary industry that had grown up to service it in the earlier years of the boom.

Large-scale placer gold mining, despite declining yields, remained the principal industry of the Yukon until the 1920s. A number of other mineral deposits were prospected during the early 1900s and there was some production of copper, silver, and lead, particularly during World War I when metal prices reached record levels. Copper was mined from small, high-grade deposits near Whitehorse, and silverlead ores were mined on Galena Creek. Although the copper mines closed after the war, significant silver-lead-zinc developments in the early 1920s brought hope for survival of the Yukon as a mining region. The principal developments were on the Keno Hill properties near Mayo. The main obstacle to expansion of silver-lead production in this area was the lack of vear-round transportation from Mavo to Whitehorse, which was connected to tidewater by the White Pass and Yukon Route railway. As a result most of the Mayo area production was subsequently brought under the control of the well-financed Treadwell Yukon Company in the 1920s.

A similar trend toward concentration of control was taking place in the placer gold-mining industry, culminating in the formation of the Yukon Consolidated Gold Corporation in 1929. With the rising value of gold in the 1930s, the latter firm intensified its mining effort in the Klondike area, particularly after the reorganization of the company in 1935.

Unlike mining in the Pacific northwest, mining in northeastern Canada was less a cause of investment in transportation facilities than a consequence of it. This was so in the Sudbury basin which was discovered in the course of construction of the Canadian Pacific Railway (CPR) in 1883. It was also the case with the Cobalt region which became, beginning in 1903, the centre of the most important mining developments in the Canadian north. The Cobalt developments were the direct consequence of the Ontario government's construction of a railway to encourage agricultural settlements in the Clay Belt west of Lake Timiskaming, an anomalous region of fertile soil within the Canadian Shield.

By 1900 this region had already attracted some lumbering activity and a small number of farmers. The government decided the obstacle to its further development was lack of transportation. The fur trade had relied upon water transportation and the lumber industry floated timber down Lake Timiskaming to the Ottawa River. The provincial government built the Timiskaming and Northern Ontario Railway to link Haileybury and New Liskeard to Southern Ontario and to encourage agriculture in the area.

As it happened, the route chosen lay directly across rich easily accessible veins of silver-bearing ores 166 km north of North Bay. The subsequent mining development at Cobalt was of the greatest importance to the future development of northern Canada as a whole. Its most direct significance, perhaps, was as a source of capital, labour, enterprise, and technology for mining developments throughout the Canadian Shield, at first for the adjacent gold mining camps at Porcupine and Kirkland Lake but, later, much further afield. Its indirect significance, perhaps, was what it revealed about the type of organizations which would control that development, notably: the concentration of ownership in large mining companies; the dependence on international sources of finance, techniques, labour, and markets; the slow emergence of organized labour as a force in Canadian mining development; and the possibilities and limitations of local political and administrative forces to influence regional development.

Railway construction workers discovered the first silver mines at Cobalt. The ores were in rich veins, conspicuous from surface outcroppings and were easy to develop with a minimum of capital or expertise. The area was consequently initially exploited by a large number of individuals who assembled small partnerships or companies to develop their properties. Some of these syndicates were formed "locally". But from the outset, even Cobalt, which was known as a "poor man's camp", depended on some outside financial support.³⁵

The rate of exploration, development and above all promotion of the Cobalt area accelerated sharply in 1904, when the important Coniagas mine was found. By the end of 1906 more than 263 companies had been formed to carry on operations in the Cobalt district.³⁶ Employment in the area expanded rapidly. In 1905 there were 438 men employed in 15 mines. By 1908 there were perhaps 2 500 mine workers in the area, and 3 500 by 1912.³⁷

The early production from Cobalt consisted simply of sacks of high-grade ore shipped out directly to smelters in the U.S. As more intensive development became necessary, increasing amounts of money were required to sink shafts, to build concentrating mills, power houses, and transport facilities from mines to the railway. Some of this capital was derived from profits made in the early developments at Cobalt but, as Innis notes, there was also an influx of outside capital.³⁸

Technique also became an important factor in the later stages of Cobalt's development. The ores were complex and difficult to refine while the structures of the deposits themselves created serious problems. Many of the latter were overcome with the migration of experienced miners into Cobalt from other mining areas in the western U.S., Alaska, and South Africa, while both Canadian and American engineers were responsible for developing new metallurgical processes for the treatment of Cobalt ores.

Between 1904 and 1936, by which time the area had been declining for a decade, nearly \$300 million worth of metal had been produced from the Cobalt district mines. Thirty-three companies were responsible for over 97 per cent of the approximately \$258 million worth of silver produced.³⁹ Moore reports that Americans wholly or partly controlled many of these companies including the Nipissing Mines Company which accounted for more than half the total dividends paid by the U.S.-controlled companies.⁴⁰

Transportation facilities had to be expanded as ore bodies were brought into production further away from the main railway line. Winter roads were used to develop properties such as the Elk Lake mines which opened up around 1908. Some of these were eventually improved by government or by mining companies themselves, occasionally with the help of local merchants. Steamboats and gasoline launches were used on several lakes, and railway connections were made from Cobalt to Kerr Lake in 1908, from Earlton to Elk Lake in 1912, and from Cobalt to Silver Centre.⁴¹

Power for the region was initially supplied by wood and coalfired steam plants, but by 1910 electric power was generally available.⁴² Within a few years, private companies developed three hydroelectric power sites within a 40 km radius of Cobalt and the price of power was dramatically reduced from between \$150 to \$175 per horsepower per year to \$50.⁴³

The rapid expansion of local mining between 1904 and 1911 made Cobalt itself a substantial settlement, probably the first major mining community built in the Canadian Shield. Like Dawson in the Yukon, its early growth was unplanned: the large number of individual operators and companies prevented it from being a typical "company town," but the lack of central organization and control led to chaotic construction and serious problems of public health and fire protection. In 1906 the township of Coleman was created and municipal institutions were established. However, they proved inadequate. Costs of controlling a typhoid epidemic in 1909 were met through a levy on the mining companies organized by the Mine Managers' Association, which also established a hospital to serve the area.⁴⁴ Despite such problems, by contrast to some silver boom towns of the U.S., Cobalt quickly developed into an orderly community.

Labour organization in the Cobalt mining camps provides one of the earliest instances of organized labour becoming involved in the processes of northern resource development. In 1906 one of the largest U.S.-controlled mining firms in the area, the Nipissing Company, fired one of its employees for attempting to organize a union. Other major companies subsequently determined they would not hire union workers. A strike began in July in 1906 and although at least one company accepted the workers' demands for changes in hours of work, higher pay, and reduced charges for board, the major employers resorted to replacing skilled workers with largely unskilled workers, many of them immigrants recruited in Montreal. The strike generally failed, for reasons Innis attributes to "the declining importance of labour and the increasing importance of capital" in the Cobalt operations.⁴⁵ He also notes that the "position of the mine owners was strengthened and a Central Employment Bureau established to keep records of men engaged or discharged." Records of "undesirables were carefully preserved."46 The Western Federation of Miners was the most active labour organization involved.

Cobalt was important in the development of mining in northern Ontario because of its role in promoting the development of the Porcupine and Kirkland Lake gold-mining areas.

Geologists explored the Porcupine district, about 145 km northwest of Cobalt, as early as 1899. In 1909, Harry Preston and others located the rich quartz outcropping that eventually became the enormously productive Dome mine southwest of Porcupine Lake. The same year Alex Gillies and Benny Hollinger examined an abandoned pit on the west side of the lake which yielded rich gold quartz ores. Both staked claims. Hollinger's were developed into the rich mine which carries his name while Gillies' became the Acme mine. At about the same time, Sandy McIntyre and a partner staked claims further east, one of which became the famous McIntyre mine.

Within a few years the entire district had been prospected and claims were staked all around the main Dome, Hollinger, and Mc-Intyre sites. Production began at Dome and Hollinger in 1910 and subsequently many less important properties were brought into production. By the late 1930s nearly 40 mines in the area had produced approximately \$500 million worth of gold, of which more than 50 per cent was attributable to Hollinger, with Dome and McIntyre producing about 20 per cent each.⁴⁷

Costs of developing these properties were high, largely because of poor transportation facilities. Winter roads were used to haul in heavy equipment and supplies during the first several seasons. In the summer, rough wagon roads and water routes were utilized. However, government soon invested in roads and railway extensions into the area. The railway was completed to South Porcupine, in summer of 1911.⁴⁸

Even with these improved transport facilities fuel costs remained a problem and the high prices for transported coal, combined with dwindling fuel-wood supplies, created an opportunity for commercial investment in hydroelectric power facilities. By June 1911 the Porcupine Power Company was producing electricity at Sandy Falls and a year later a plant was completed at Wawatan.⁴⁹ Both were small-scale developments. In 1924 the Canada Northern Power Company completed a 10 000 horsepower plant at Quize and in 1925 Hollinger completed a larger, 24 000 horsepower plant at Island Falls.

As transportation costs decreased the cost of living in the area declined and the mining companies sought to reduce wage rates accordingly. The immediate result was a strike which lasted from November 1912 to June 1913.50

Although U.S. and British capital was attracted to Porcupine, there was an unusual amount of Canadian capital involved in these developments, due to the willingness of Canadians, such as the Timmins brothers and the O'Brien interest to plough some of their large profits from Cobalt into the new ventures in Porcupine. Of the three large original projects there, only one was primarily dependent of U.S. financial backing. A group associated with International Nickel Company financed the Dome property. The Timmins brothers and associates from Cobalt developed the Hollinger properties, and Canadians largely financed and controlled the McIntyre property. However, even the Canadian-financed companies made considerable use of American senior management.⁵¹

The principal community development in connection with the Porcupine mines was Timmins. By 1921 the town had grown to 3 843 since its inception in 1912 and 10 years later had reached 14 200 and was by far the most important centre in the region.

In 1911 W.H. Wright found the first important deposit of gold just east of Swastika, near Kirkland Lake, about 97 km north of Cobalt. Then Harry Oakes and the Tough brothers staked the Tough-Oakes property and another which became the Lake Shore mine. These properties all contained rich ore bodies.

The companies involved developed these major Kirkland Lake properties after 1912 and achieved some production, despite the disruptions caused by World War I, but it was not until the 1920s, and after the reorganization of some companies that they achieved a consistently large output. Power costs were high. Innis notes that none of the companies originally involved were large enough to build or acquire their own electric power plants, consequently they had to depend on power purchased from plants supplying the Cobalt mines. It was not until mining in Cobalt declined that power could easily be supplied to Kirkland Lake.⁵²

The major producers in the 1920s and 1930s were the Lake Shore properties, the Teck-Hughes mine, the Wright-Hargreaves property, and Sylvanite Gold Mines. Most Kirkland Lake developments had considerable American participation, much more than those at Porcupine⁵³.

The immediate vicinity of the Kirkland Lake field experienced some diversification in its resource base due to the mining developments and the availability of hydroelectric power surpluses. In addition to the local market created by the mines for timber and food, the Northern Ontario Light and Power Company established a pulp mill in 1923 at Haileybury to utilize its surplus power.

Many other mining properties were explored and some development work was done at locations in northeastern Ontario in the 1920s and 1930s. Several small properties were successfully developed, relying upon custom mills and established power supplies to minimize capital costs. The main developments took place east of Kirkland Lake.

The first major mining development in northern Quebec was an offshoot of the developments in Ontario. The gold and copper deposits of the important Rouvn mining district in northwestern Ouebec were first discovered by Ed Horne, a prospector working out of New Liskeard. Horne and several associates formed a small local syndicate, the Tremoy Lake Prospecting Syndicate, to explore the Lake Osiko region in the early 1920s. Their claims were subsequently developed with backing of a New York financial group, which optioned the Tremoy Lake Syndicate's and some other properties and thereby gained control over a large area.⁵⁴ They organized Noranda Mines to develop the properties. Heavy investments in plant were required to process the complex copper-, gold-, and silver-bearing ores. Electric power came from the Canada Northern Power Corporation by way of a 80-km transmission line from Quinze. The company negotiated an agreement with the Quebec government and the CNR by which a railway was constructed from Taschereau in 1926 and additional rail service to the Timiskaming and Northern Ontario Railway from Swastika to Noranda was completed in 1927.55 In 1926 the company built a smelter with financial support from Hollinger Consolidated.⁵⁶

The Noranda operation became a good example of a large well integrated mining development in the Canadian Shield. Its complex ore resources, while requiring unusually elaborate processing facilities, enabled the company to weather price fluctuations of the kind that made copper production uneconomic, but gold production unusually profitable, during the 1930s. A model townsite constructed at Noranda contrasted sharply with the spontaneously developed settlement of Rouyn adjacent to it. Noranda Mines proved remarkably aggressive in its acquisition of additional properties, both in northern Quebec and Ontario, and in other parts of Canada. It also branched into power production (Noranda Power Company, bought out in 1938 by the Quebec government), copper refining, wire rope manufacturing, and later, pulp and paper production, and a variety of financial activities.

The Noranda-Rouyn development stimulated prospecting throughout northwestern Quebec and a number of producing mines, mainly gold-mines, were developed in the 1930s. In 1938 these were connected to the northern railway system by a branch line from Senneterre to Rouyn.

Development of several promising claims at Larder Lake remained slow until the mid 1930s. In 1938 several of these amalgamated to become the Kerr-Addison gold mine, eventually the largest gold-mining operation in Canada.

The internal combustion engine facilitated the penetration of the Canadian Shield by mining companies, particularly after World War I. "The gasoline engine," Innis notes, "in aeroplanes, boats and tractors, hastened mining expansion distant from the railway."⁵⁷ In the late 1920s and 1930s the refinement of the diesel engine provided an economical source of power for heavy equipment and permitted development of smaller power plants suited to smaller mining operations in areas remote from developed supplies. Thus the internal combustion and diesel engines reinforced the primacy of private firms in the development of northern Canada. Individuals and relatively small organizations could explore remote places and, perhaps more important, develop marginal mining properties enough to demonstrate their commercial viability. Large mining or financial organizations were then willing to support the development and usually acquired control. Commercial viability also was considered to justify public investment in transportation, power, and social infrastructure.

The potential of new technology was first demonstrated in the eastern regions of the Shield by the Noranda developments, which relied upon air transport in their early stages.⁵⁸ Further west, the best examples are provided by the development of the Red Lake gold-mining district in northwestern Ontario, Flin Flon in northern Manitoba, and the oil, gold and radium developments of Mackenzie District. Mining in northwestern Ontario dates from the late 1890s although the main base metal developments there belong to a later period. In the late 1890s iron ore was developed at the Helen mine northwest of Sault Ste. Marie in the Michipicoten Range. This led to industrial development, notably construction of a large smelter in Sault Ste. Marie and the F.H. Clerque organization's Algoma Central and Hudson Bay Railway built north to the Helen minesite in 1903 and subsequently extended to Hearst on the National Transcontinental (later the CNR).59 The Helen mine was closed due to a decline in reserves in 1918 but reopened again in 1939.

In the late 1880s and 1890s some gold mines in the Lake of the Woods area were brought into production. Many were commercial

disasters, however, and Moore suggests that the "disappointment in the investments was a setback to mining from which Canadians did not recover until Porcupine demonstrated the possibilities of the province as a gold producer."⁶⁰

Farther north, however, in the western part of the District of Patricia, gold mining did become an established industry. The Red Lake area 450 km northwest of Lake Superior was initially explored by fur traders of the Northwest Company in the late 18th century. The Hudson's Bay Company established a post round 1790.61 Robert Bell surveyed the area in the 1890s and soon after prospectors of a British syndicate found, but subsequently abandoned, gold on McKenzie Island. The first producing property in the area was the Howey mine, staked in 1925. Despite the remoteness of the area, several hundred prospectors were attracted by news of this discovery. Development work was slow and expensive, however, and went ahead more on the strength of individual initiative, notably that of J.E. Hammond, than through support by major mining enterprises. Much of the difficulty lay in the need to rely on a combination water and overland route to bring in supplies from Hudson on the CNR, a distance of about 300 km. The alternative was air freight at a rate of \$2.20 per kilogram (kg) (\$1.00 per lb.), feasible only in an emergency.⁶² Freighting costs were reduced in 1929 through an agreement between the Howey Company and the government whereby each met half the cost of building tracks over four portages to permit barges to be taken to Red Lake without unloading.63 Relatively low-cost power supplies were also provided by an agreement with the provincial government whereby the mining company built a 72 km transmission line and committed itself to purchase 2 000 horsepower annually from a power plant constructed at Ear Falls.

The long-term potential of the Red Lake area was uncertain until the late 1930s. Between 1935 and the beginning of World War II, however, four new properties were brought into production and five communities were established in the area.

The first major mining developments in the shield regions of the Prairie Provinces were in northern Manitoba, at the Mandy and nearby Flin Flon mines discovered in 1914–15 on the Saskatchewan-Manitoba border north of The Pas.

The Mandy copper mine on Schist Lake about 115 km north of The Pas was developed and brought into production in 1917 by the Tonopah Mining Company of Nevada.⁶⁴ The mine was 275 km from the railway, so that only high grade ores could be profitably extracted. These were exhausted in 1920, and low metal prices prevented further development until it was taken over by the Hudson Bay Mining and Smelting Company, which had been formed to develop the nearby Flin Flon mines, in 1940.

The large complex deposits of copper-zinc ores at Flin Flon were discovered in 1914 and staked in 1915. In their case, the usual problems of transportation were compounded by the unusual technical problems involved in processing the complex ores. A prolonged series of financial and corporate reorganizations culminated in the incorporation of the Hudson Bay Mining and Smelting Company, a largely U.S.-financed and -controlled firm, which was able to develop the necessary oreprocessing technology; construct smelting, concentrating, and electrolytic zinc plants at Flin Flon; and – through subsidiaries: the Churchill River Power Company, and the Northern Manitoba Power Company – to develop a hydro power generating system at Island Falls on the Churchill River.⁶⁵ The mining and milling operations began in 1930 and the company began to acquire additional properties throughout the area. Moore notes, "The Hudson Bay Mining and Smelting Company has been a major factor in the industrial development of northern Manitoba. . . . Americans show an aptitude for the promotion of such enterprises, probably because of the financial resources available in New York for the initial development and the long experience of American mining men in handling copper deposits."⁶⁶

Another important copper mine in northern Manitoba, the property of Sherritt Gordon Mines, was also developed in the late 1920s, some 69 km northeast from Flin Flon. It utilized power purchased from the Island Falls plant and also used the Hudson Bay Mining and Smelting Company's smelter to process its concentrates. Production began in 1931 but was suspended the following year because of low copper prices. The mine was re-opened in 1937. A 136-km branch line from the new Hudson Bay Railway in 1928 provided improved transportation to the Flin Flon area. The railway company assisted by the mining companies and the provincial government built another branch in 1929 from Cranberry Portage to the Sherritt-Gordon properties.⁶⁷ The Hudson Bay Mining and Smelting Company built the townsite of Flin Flon and the Sherridon Development Company, a subsidiary of the Sherritt-Gordon Company, built Sherridon.⁶⁸

Although the developments in northern Manitoba utilized the new technologies of mineral development which became available in the inter-war period, their commercial feasibility depended heavily upon the quite independent decisions which led to construction of the Hudson Bay Railway. However, the new methods *were* the deciding factor in the developments – oil at Norman Wells, radium at Great Bear Lake and gold at Yellowknife – in Mackenzie District during the 1920s and 1930s.

The first petroleum development in the Canadian north was located on the Mackenzie River near the fur trading post of Norman. Gold prospectors from the Yukon staked oil and gas claims on Great Slave Lake and at the Norman site in 1914, but no development work was done until 1919 when a subsidiary of Imperial Oil began testing at both locations. They struck oil on the Norman property in August 1920. Several companies did exploratory drilling in the early 1920s and although at least one more potentially productive well was found, they attempted no commercial production then. A small refinery built by the Northwest Company (Imperial's subsidiary) at Norman Wells in the 1920s was able to produce gasoline and diesel fuel for local use. Output was negligible until development of the pitchblende deposits on Great Slave Lake and the gold mines at Yellowknife in the mid 1930s increased demand. This expansion of local markets encouraged Imperial Oil to bring a new refinery and two new wells into operation in the Norman field at the end of the decade.

Gilbert Labine prospected the pitchblende-silver deposits on the

eastern arm of Great Bear Lake in 1928 and subsequently Eldorado Gold Mines Limited developed them. The main problems were the lack of transport, electric power facilities, and refining technology. The latter problem was eventually overcome through a new process applied in a special refinery built by the company at Port Hope on Lake Ontario. The power supply problem was solved by means of diesel-electric generation with fuel supplies barged in from Norman Wells. The transportation problems were met by heavy reliance on aircraft flown by a subsidiary air service and by a water transportation system operated by another subsidiary on the Mackenzie River. The mine, located only 40 km from the Arctic Circle, came into production in 1934.

The other major development in Mackenzie District in the 1930s was the Yellowknife gold-quartz-mining industry on Great Slave Lake. Major staking activity in the early 1930s was followed by development of three main claims, the Con, Negus, and Giant in 1936 and 1937. Production began in 1936 but World War II interrupted development of the mines.

These developments caused a major change in the economic characteristics of Mackenzie District. Between 1921 and 1938, migration into the mining camps of the District increased its population from 8 000 in the early 1920s to 11 000 by the late 1930s.⁶⁹

The Impact of World War II on the Commercial Economy of the North

Relative to the diversity of the north, as defined in this study, the area had up to World War II, a simple economy: a staple export-based hinterland economy superimposed on a traditional native economy, itself largely a by-product of modern industrialism. The traditional sector of the northern economy was essentially a creation of the European fur trade which had conscripted the local population into a form of wage employment which was compatible with some elements of its older culture. The dominance of the fur trade in the native economy was reflected in the reduced living standards of the native population as the fur trade declined in the 19th century.

The late 19th century saw the forest and mining industries becoming the main forces of change in the north and by 1939 the pulp and paper industry and the precious metal mining industries were well established as the main sources of income and employment. The preeminence of private firms as the initiators and operators of these developments created the appearance of a market-based, free enterprise type of economy in the north despite public ownership of virtually all the forest and mineral lands and despite government investments in railways and roads, and provision of other social overhead capital needed to make the "commercial" investments in directly productive activities "profitable."

The immediate impact of World War II on the "commercial economy" of the north was to interrupt its development because of market disruptions, labour shortages, and disturbances in the availability of capital due to war requirements. Despite this, activity in the area was maintained through large new military undertakings which utilized –

and frequently overwhelmed – existing transportation facilities, community services, and local labour supplies.

The direct impact of the war on the commercial economy of the north was probably less significant for the region's future than was the indirect influence of the war on the political decision-making system. The importance of this can only now be appreciated. It would be a double mistake to say that World War II marked the transition from market control of northern development to control by policy. Such a view would underestimate the influence of public policy on the development of the basic staple industries before World War II: at the same time, it would neglect the extent to which world market trends since World War II have brought the resource-rich north into prominence. But just as the developments during World War II demonstrated to a wide public (thanks to extensive press coverage) that technology was available which could cope with the northern environment (so long as the money could be found to finance construction), they also suggested the usefulness of policy to counteract, rather than to support, marketinduced developments. In Canada as a whole, the experience with a war economy following on a decade of depression discredited "commercial feasibility" as the basic guideline to correct resource allocation. This change in philosphy meant that development in the north became more, and more openly, controlled by public policy. Commercial feasibility remained as a consideration, but even development projects which were not commercially feasible could be justified if they met other criteria: more strict principles of allocative efficiency which recognized the extent to which the market controls operative in the past failed to reflect competitive price/output relationships; equity considerations; stability criteria; and the economic growth and development concepts which, by the 1940s were coming into vogue, especially in relation to the "third world."

Thus, in the post-World War II years, there was new interest in development strategies. However, although commercial interests groused about political interference with their activities, there was no conflict between the objectives of policy makers and those of commercial enterprises participating in the post-war resources boom of the 1950s and 60s. If anything, public policy ran ahead of commercial developers by promoting investments in transportation and power facilities which could not be justified on grounds of commercial feasibility.

The parallel between this experience with growth and development policy and the experience with Keynesian type stabilization policy is obvious. So long as the politically-determined fiscal and monetary policies were expansionary there was little opposition to their use. When contraction was called for, however, the legitimacy of the political policy-making system was challenged, along with Keynesian economics. In the case of resource development, the same pattern emerged. When, in the 1970s, a body of anti-development opinion began to influence public policy in this area, a conflict between the political and the market-based elements of the system of social control was inevitable. The evolution of the policy-making system for the north since the war will be considered further in the section "Public Policy".

The direct effect of the war on the northern economy per se was

probably a weakening of the hunting-trapping-fishing economy and strengthening of the export-base sector and a small fringe of new residentiary industries complementary to it. Fur prices rose to unusually high levels during and immediately following the war, due perhaps to the increase in family incomes and the rise in female participation in the North American labour force during these years. The increased opportunities for wage employment in road and airfield construction, and other military projects in many parts of the north and the more sedentary life style adopted by some indigenous groups attracted to the sites of such activity resulted in a decline of trapping activity. While the impact of these developments was different in different parts of the north, and although only a few areas were then affected, the pattern established was to become typical in the years to come. Trapping, hunting, and fishing were considered "inferior employments" in the sense that native workers would opt for wage employment - even of a temporary or casual nature - when it was available, returning in some cases to the traditional pursuits when the opportunity for wage employment disappeared or, after the revolution in social welfare services in the 1940s. to subsistence on welfare. Thus Brochu attributes the decline in sealskin production at Fort Chimo in northern Quebec to "the increasing sedentarisation of the Eskimos in this area, resulting from the establishment of an American air base here during the Second World War."⁷⁰ Even the expectation of wage employment sometimes caused native people to do less or to abandon trapping and hunting.⁷¹

Turning to the export sector, northern pulp and paper and mining industries were subjected to direct government controls during the war years, but with the exception of the radioactive ores industry, there was little change in the general course of their development.

The pulp and paper mills of northern Canada maintained a stable output during the war. Despite a large increase in U.S. demand after 1942, productive capacity in Canada was adequate to meet it, in spite of shortages of labour and electricity. Because of the high priority given to paper output, pulpwood cutters were given special exemptions from military service.⁷²

The experience of the mining industry was more varied. Gold mining, booming as a result of the depression, suffered a sharp setback, notably at Yellowknife where production was just getting underway, but also in northern Ontario where it had become the foundation of several communities. The initial high priority given to gold production at the beginning of the war in order to finance this country's growing trade deficit with the U.S. was sharply reversed after the U.S. entered the war and joined Canada in a system of reciprocal trade agreements, The gold-mining industry was subsequently sacrificed: it lost half its labour force and was given the lowest priority for supplies.⁷³

The existing base metal mines, on the other hand, were pressed to their maximum output, but no significant new areas went into production. Output of the copper-lead-zinc industry as a whole reached a peak in 1942. "The mines were pressed to capacity, the richest ore was gutted, and underground development was virtually stopped. Fears were expressed that the desperate war exploitation had permanently damaged the mines and much shortened their lives."⁷⁴ The main new mining developments in the north during the war years were iron mining at Steep Rock, Ontario, uranium mining at Port Radium, Mackenzie District, and mercury production at the Pinchi mine in B.C.

The demand for steel created by World War II hastened the search for new North American sources of iron to augment dwindling reserves, particularly those in the U.S. Mesabi Range. Canada had never produced enough iron ore to meet its own peacetime needs, and would therefore be significantly affected by an American shortage. However, Canada did have possibly significant bodies of iron ore in at least two locations: Labrador-Ungava and (a much more accessible place) Steep Rock Lake near Atikokan on the CNR in northwestern Ontario. The Geological Survey noted the ore bodies in 1897, but there was no attempt to develop them until the 1930s. Financial backing was not found until 1937. U.S. consultants confirmed the find in 1942, noting that the Mesabi Range was running out of high grade lump ores needed in the final stages of making open hearth steel and that "war demand has caused the mines to resort to many expedients to obtain lump ore, much of which has not been satisfactory" At Steep Rock, however, the consultants reported that "all the evidence from the past two winters' drilling indicates that at least 25 per cent of the ore that will be produced there is of high-grade, desirable, lump ore variety."75

The strength of the demand for this product is indicated by the extraordinary engineering feats necessary to develop the Steep Rock mine. The main ore bodies lay beneath Steep Rock Lake which would have to be drained. However, the lake itself was actually part of the Seine River, which would have to be dammed at its inlet. The situation was further complicated by a 10 500 H.P. hydroelectric station which would be made useless by such a diversion. The federal government gave the project high priority and work began on diverting the river in 1943. Open pit mining was begun the following year, and underground mining a decade later.

In many respects Steep Rock was an unusual mining development; however it shared one important characteristic with other important post-World War II developments in the Canadian north: direct government involvement was a condition of the commercial feasibility of Steep Rock. A certain amount of government "cooperation" had been part of the pulp and paper and precious metal mining industries development since their beginnings, but prior to World War II this was for the most part in the form of indirect aid: geological surveys and mapping services; low charges for the use of the Crown's resources; favourable tax treatment; and in some provinces such as Ontario, assistance in the financing of power and transportation facilities. It is unlikely that many of the pre-World War II developments would have been abandoned if such assistance had not been available. As interest shifted during the war to base metals, and particularly to iron ore, direct government support was required. At Steep Rock, for example, the expected direct costs of diverting the river, pumping out the lake, and stripping the overburden amounted to some \$7 500 000 which the company was to cover by means of borrowing in the U.S. The direct costs of a 201-km power line to the site, a spur railway from Atikokan, and ore docks at the Lakehead were estimated at \$5 500 000. These facilities were to be provided by Ontario Hydro, the CNR, and the federal government. In addition, the federal government was to subsidize shipping the first 5 million tons of ore to the docks.⁷⁶

Costs of developing the Steep Rock mines vastly exceeded the initial estimates. By the late 1950s the company's own capital expenditure had risen to over \$200 million. By then they had shipped some 22 million tons of ore and were undertaking further development.⁷⁷

Two other companies, Canadian Charleson and the Caland Ore Company became involved in developing the Steep Rock Range in the late 1950s. Although it had been expected the ore produced from the Steep Rock Range would not require up-grading, it eventually became necessary to install treatment plants to satisfy the demands for highgrade feed at the steel mills. Both Caland and Steep Rock Iron mines have subsequently installed large pellatizing plants in the area.

The radium and silver-producing properties of Eldorado Gold Mines Limited at Great Bear Lake were closed in 1940 due to market disruptions caused by the war. In 1942 the mine was reopened secretly to produce uranium for the U.S. atomic bomb project. Two years later the property was expropriated by the federal government and placed under control of Eldorado Mining and Refining (1944) Limited, a Crown corporation.

Finding, developing, and producing uranium during the last years of World War II was a public responsibility, but in 1948 the government's role was restricted to refining and marketing radioactive metals, leaving development of new mines once again to private enterprise.⁷⁸

Considerable exploration work was done throughout northern Canada during the period of direct government control of the new uranium-mining industry, but no new properties were brought into production until the late 1940s. By then, the search for uranium had become a major incentive to northern exploration and development, and the subsequent establishment of new mining centres in northern Saskatchewan and northwestern Ontario carried the thrust of the mineral industry another step away from the established corridors of development.

A relatively minor development directly attributable to war demands was a small mercury mine in northwestern B.C. Mercury was discovered at Pinchi Lake on the northern Nechako plateau in the Fort St. James area by the Geological Survey in 1937. Two deposits were developed in 1940 and operated until 1944 when war contracts were cancelled. Several other deposits are located at intervals along 193 km of the Pinchi fault.⁷⁹

Commercial Enterprise in the North Since World War II

The principal commercial activities in the Canadian north since World War II have been related to primary resource production. The traditional activities – hunting, trapping and fishing – became more and more dependent on public management and support. Because of this they have lost much of their "commercial" character and may more suitably be considered along with other measures belonging to public policy.

The most important structural change in the northern economy

since the war has been the rise of the tertiary sector; defence, health, education, and welfare services. This increase in service activity probably had more direct effect than the resources boom of the 1950s and 1960s on the economy of the north itself, insofar as most of the income, employment and market effects of most resource development were felt either outside the area, or in isolated enclaves within it.

The Export Base Industries

Mining

Forestry and mining continued to be the main commercial activities drawing capital and labour into the north after World War II, followed by hydroelectric power and oil and gas development. The most conspicuous penetration into remote regions was by relatively large-scale non-precious metal mining developments, notably the iron ore developments in Labrador, the Lynn Lake and Thompson operations in Manitoba, Pine Point in Mackenzie District, Cassiar Asbestos in British Columbia, and Faro and Clinton Creek in Yukon Territory.

Labrador-Ungava Iron Ore: The demand which warranted the development of Steep Rock also underlay the much larger development of iron ore deposits in the interior of Labrador-Ungava. The magnitude of this development suggested that no northern resource could any longer be considered inaccessible. The Ungava-Labrador iron ore development was one of the largest privately-financed resource developments ever undertaken in the Canadian north.

A.P. Low of the Geological Survey of Canada first established the existence of large iron ore deposits in the interior of the Ungava-Labrador peninsula in 1893. The first claims in the area were staked in 1914, but no work was done until around 1930 when the New Quebec Company investigated them further.⁸⁰ Market and other conditions were unfavourable, however, and this venture failed for lack of financial support, as did subsequent attempts in the 1930s. Eventually J.R. Timmins brought the development companies working in the area under the control of his Hollinger Consolidated Gold Mines Company and succeeded in interesting the M.A. Hanna Coal and Ore Company of Cleveland in a massive project. The organization which emerged, the Iron Ore Company of Canada, was capitalized at \$225 million, most of it raised in the U.S. Other firms associated with the venture were Wheeling Steel Company, National Steel Corporation, Youngstown Sheet and Tube Company, and the Republic Steel Corporation.

The site chosen for development was at Knob Lake, almost in the centre of the Ungava-Labrador peninsula, more than 1 600 km from any North American steel mills and virtually inaccessible except by air. As Humphreys reports: "Historically the site . . . had no significance. The tribes that inhabited the Knob Lake area were nomadic and did not establish permanent camps in the interior. In the mid nineteenth century a Hudson's Bay Company post was set up on Petitsikapau Lake, some 30 miles (48 km) away, but this was later abandoned as uneconomic."⁸¹ The company met the classic northern development problems in a direct and bold fashion. They brought in supplies entirely by airlifts operated by Hollinger Ungava Transport. They constructed, again using mainly

air transport, a hydro plant on the Menihek River and, to get the ore to the mills, built a 574-km rail line, the Quebec North Shore and Labrador Railway, from the site to Sept Isles. To permit trans-shipment of the ore to ocean-going and seaway vessels, they constructed a deep-water port at Sept Isles, complete with over 3 km of ore rocks.

The company recruited a predominantly French-speaking labour force for the open pit mining operations which began in 1953 and built the townsite named Schefferville, on the basis of plans approved by the Quebec government. Within 10 years, Schefferville had grown to about 5 000, although the total was subject to wide seasonal variations due to the short 175–205 day season in which mining was feasible. There has been a high population turnover.

Various companies have subsequently developed two other major iron ore mining areas: the Carol Lake and the Mount Reed areas, both south of Schefferville. The Iron Ore Company of Canada developed the Carol Lake Region in the late 1950s to produce a pelletized concentrate increasingly demanded by steel makers. A large low- to medium-grade ore deposit, the Smallwood, fed a plant located about 10 km away on Wabush Lake. The entire operation was automated and capable of processing 15 million metric tons of raw ore annually.⁸² A 64-km spur line transports the products of the mill to the Quebec North Shore and Labrador Railway and then to Sept Isles. Power for the development was supplied by the large 240 000 H.P. hydro development of the British Newfoundland Corporation at Twin Falls, over 160 km to the east. The company constructed Labrador City at Wabush Lake using a similar approach to that tried out at Schefferville.

A second large development in the same area was initiated in the early 1960s by Wabush Mines, a company created by the Steel Company of Canada Limited and Dominion Foundries and Steel Limited along with a number of U.S. steel companies. The production methods are similar to those used by the Iron Company of Canada at Carol Lake located about 13 km away, except that concentrating and pelletizing are done at separate locations: concentrating at the mine site and pelletizing at Pointe Noire, the company's new deep water port on Seven Islands Bay, a few kilometres west of Sept Isles. Although self-sufficient in other respects, the Wabush mines utilize the Quebec North Shore and Labrador Railway to ship concentrates to Pointe Noire and, like the Carol Lake operations, depend on Twin Falls' hydroelectric power.

The second "second generation" iron-mining development in the region is in the Mount Reed area of Quebec, some 160 km southwest of the Wabush Lake-Carol Lake developments. This is another fully integrated development in which the company, Quebec Cartier Mining Company, a subsidiary of United States Steel Company developed a large low grade deposit by open-pit methods, established a concentrating mill at the site, obtained power by building a 60 000 kW hydroelectric plant about 14 km away (operated by the subsidiary Hart Jaune Power Company), constructed a 322-km railway, La Compagnie de Chemin de Fer Cartier, from the site to a new port, Port Cartier, adjacent to the old settlement of Shelter Bay (renamed Port Cartier in 1959), and a new town Gagnon, to serve the mining and concentrating site.⁸³

Another major mining project helping to transform the Quebec

northshore in the post-World War II period was the development of large titanium (ilmenite) deposits, discovered in the Allard Lake area north of Havre St. Pierre during the war, by the Quebec Iron and Titanium Corporation, a subsidiary formed by Kennecott Copper Corporation and the New Jersey Zinc Company. Mining is by large-scale, open-pit methods. The ore is transported 43 km over a company railroad to dock facilities constructed at Havre St. Pierre for trans-shipment by boat to the company's smelter at Sorel. Power for the mining operation was initially supplied by a diesel plant and the very large power supplies needed for the refining process at Sorel by the Shawinigan Water and Power Company's plant on the upper St. Maurice River.

Northern Ontario and Quebec: In comparison with the mega-developments in the Quebec-Labrador iron ore region, post-World War II mining developments in other parts of northern Quebec and Ontario appear modest in scale and conventional in conception and execution. The principal developments in Quebec were the opening up of new copper-lead-zinc properties in the northwestern regions and several new mines in the gold belt. The two new base metal mining areas were Chibougamau and Mattagami. Copper deposits were discovered in Abitibi country in about 1900 and some development work was done in the 1930s, but low metal prices and high development costs discouraged further work until the late 1940s. In 1947 the Quebec government completed a highway from the Lac St-Jean district into Chibougamau and development began: in 1954 copper concentrates were first shipped from the area.⁸⁴ Quebec Hydro supplied electric power for the mines from St. Felicien. Development of the area was furthered in the 1950s by railway extensions from the CNR, first a 319-km stretch from Barraute to Chibougamau in 1957 and by 1960, a further extension of 201 km to St-Felicien.85

Development in the Mattagami district began in the 1950s with the successful copper-lead-zinc mining project organized by Mattagami Lake Mines. Initial transportation was by a road built in 1961 from Amos, about 177 km to the south. A Quebec Hydro line supplied power from Amos. Zinc concentrates were shipped from Noranda. The railway company subsequently constructed a 97-km railway spur from the CNR mainline in return for traffic guarantees by Mattagami Lake Mines.

The Quebec mining industry began its northernmost operations when in the late 1960s the Asbestos Corporation developed property at Asbestos Hill in northern Ungava. In 1972 the \$65 million project began shipping raw ore to West Germany for processing and sale in European markets. A nickel-copper property held by New Quebec Raglan Mines Limited was also developed in the Cape Smith-Wakeman Bay area of Ungava in the early 1970s.

In Ontario base metal projects and the short-lived uranium-mining boom have opened new areas since World War II. Also some important properties have been developed in or near already established mining regions, notably the Texas Gulf Sulphur base metal mines near Timmins, the Adams iron mine of the Jones and Laughlin Steel Corporation which opened in 1965 near Kirkland Lake, and several new gold mines in the northeast. These gave new life to declining regions. The Porcupine area's fortunes were also strengthened by the copper and zinc production at several properties: Kam Kotia Porcupine Mine, the McIntyre, and the Canadian Jamieson Mine.

The great demand for uranium which developed in the late 1940s created a whole new potential for the Canadian mineral industry. The main impact was felt in northern Saskatchewan and northwestern Ontario. The largest uranium ore body found in Canada was a huge Z-shaped structure lying about 129 km east of Sault Ste. Marie. Most of it was staked and the early development work done with American backing in the early 1950s. Several companies, formed to develop specific claims staked by the original finders, were subsequently acquired by the large British firm, Rio Tinto Limited. By 1960 Rio Tinto had eight of the properties in production. A second group of properties was developed in the same area with the backing of North Denison Mines Ltd., subsequently reorganized as Consolidated Denison Mines Ltd. In all, 11 separate properties complete with mills were brought to the production stage between 1954 and the sudden collapse of the uranium market in 1960. As Carson-Brown notes, "The smallest of these enterprises would dwarf nearly any other uranium mining operation in the world" Together they had a rated milling capacity of 31 750 metric tons of ore per day.⁸⁶

The opportunity to develop a large model townsite was not wasted and "the small city of Elliot Lake came into existence as a model community, one of the most picturesque towns in Canada complete with every sort of amenity. Elliot Lake is a real showplace, a model example of what community planning can accomplish."⁸⁷

Unfortunately the unexpected failure of the U.S. to renew its purchase contracts for Canadian uranium made most – if not all – of the productive capacity at Elliot Lake and elsewhere in Canada redundant. Stretch-out delivery plans and a Canadian government stockpiling program enabled the area to collapse gradually over a period of years. "The short history of Elliot Lake mirrors that of numerous mining centres in the north, but it is of particular interest because it is an example of flawed resource-town planning, which seems to have paid considerable attention to buildings and infrastructure, and less to the resource base of the community."⁸⁸ The episode raised some fundamental questions about the nature of both private and public decisionmaking processes involved in major resource projects in remote regions.

In northwestern Ontario the major new mining area opened up in the 1950s was around Manitouwadge Lake southwest of Geraldton. The pattern of development here was the classic one: reports of minerals by a government geologist in the early 1930s, prospecting and staking of claims by amateur prospectors, formation of a mining company to prove the property, subsequent involvement of a major mining company to bring the mine into production. In this particular case, the Geko mine was taken over by the Mining Corporation of Canada Limited which began shipping concentrates in 1957.⁸⁹ Willroy Mines Limited developed a second property and, in 1965, also brought a third property in the area into production.

Initial development of the Manitouwadge mines was by air and

winter road freighting. The Ontario government subsequently built a road and both the CNR and CPR built spur lines into Manitouwadge. The latter was an early experiment in townsite planning by the provincial government. A 373 km² municipality, the Improvement District of Manitouwadge, was also created to provide local government functions in the area.⁹⁰

The Texas Gulf Sulphur Company's discovery of an enormous copper-silver-zinc ore body just northwest of Timmins in 1964 is especially interesting. Not only did it revive interest in prospecting in northern Ontario in general and offer hope of prolonging the existence of Timmins and other centres formerly almost entirely dependent on dwindling gold reserves, but it also represented a new style of mining development which promises to become the standard pattern for northern mineral developments in Canada. The Texas Gulf development was the product of a deliberate and systematic application of sophisticated mineral-finding techniques; the planning, financing, and management of the operation was carried out by the company itself, by-passing the traditional steps - independent prospecting, proving, financing, and company formation - which characterized the earlier years of the Canadian mining industry. By late 1966 the company was prepared to produce an initial 5 400 metric tons of ore daily from an open pit. The concentrator was operating at 8 100 metric tons a day in 1967. By the early 1970s extensive expansion work increased both mine and concentrator capacity considerably. A \$70 million zinc plant completed in 1972 made possible production of refined metal. The Canadian Development Corporation (CDC) has become a major shareholder in the operating company.91

Prairie Provinces: The principal post-World War II mineral development in northern Manitoba was the large International Nickel Company development at Thompson in the 1950s. Further north, Sherritt-Gordon opened the Lynn Lake base metal mining region, and the Hudson Bay Mining and Smelting Company successfully expanded its Flin Flon operations into new ore bodies.

Thompson was another illustration of the new approach to mineral exploration and production after World War II. A large, operating mining company set out to locate new resources. A costly exploration program using sophisticated technology to survey large tracts of land was initially concentrated in the Mystery Lake-Moak Lake areas of northern Manitoba. Attention shifted to a more promising area in 1956 and an extensive drilling program quickly established the presence of reserves of nickel ore adequate to support a large refinery. Although the property was only 48 km from the Hudson Bay Railway line, during the first winter tractor trains hauled in supplies and heavy equipment. It is tempting to attribute at least part of the development to the existence of the railway, a familiar enough association in the history of Canadian mining, but the evidence is to the contrary. Such considerations do not greatly influence large-scale decisions about integrated developments planned and carried out by an established mining "giant". A.D. Little Inc. in 1958, in a study of northern Manitoba, suggested that while International Nickel's development would benefit from the

existence of a railway in the area, "there can be little doubt that, in view of the size of the investment involved and the potential profitability of the venture, it would have proceeded even if the International Nickel Company had found it necessary to build a completely new line."⁹²

The contract for developing the mine at Thompson has been described as "the largest underground development contract ever let in the history of world mining."⁹³ On the surface, the first fully integrated mining and processing plant, capable of producing pure cathode nickel, was operational in 1961, by which time the company had invested some \$125 million.⁹⁴ By 1971 Thompson had a population of more than 25 000. Hydroelectric power was provided by a Manitoba Hydro plant built at Grand Rapids on the Nelson River, about 80 km to the northeast. The company paid part of the capital cost.

The Lynn Lake development north of Flin Flon was the result of Sherritt-Gordon Mines seeking new deposits as its Sherridon property was depleted. Sherritt confirmed a suitable copper-zinc ore body in 1945 in the Lynn Lake area and, when they closed the Sherridon operation in 1950, they hauled the entire plant and townsite by tractors over winter roads to the new site, a distance of 266 km. The move completed, in 1953 the mine began production. A CNR extension from Sherridon provided rail service and two small hydro plants on the Laurie River provided power. Another property developed by Sherritt Gordon with financial support from Japanese interests at Fox Lake, about 48 km south, began production in 1970. Sherritt Gordon ships concentrate by rail to a refinery at Fort Saskatchewan, near Edmonton, where ammonia produced from natural gas is readily available for the refining process. Copper concentrates are refined at Flin Flon.⁹⁵ In 1973 the company brought into production another copper-zinc property at Rutland Lake, about 130 km southeast of Lynn Lake.

In Saskatchewan, the main impact of commerical mining developments after World War II was on the two established mining areas, Flin Flon and the north shore of Lake Athabaska. Before the war, the Saskatchewan side of the Flin Flon development consisted mainly of services for the mines – notably the power station at Island Falls. North of Lake Athabaska a gold-mining camp at Goldfields was operated for several years in the late 1930s.

After World War II, the Flin Flon mining area expanded with a considerable spill-over into Saskatchewan, where the population of Creighton tripled (to over 1 500) between the end of the war and the mid 1950s.

Pitchblende ores, discovered in the Lake Athabaska area in the 1930s, attracted no development until near the end of World War II when Eldorado Mining and Refining, a Crown corporation, discovered and developed a uranium mine at Ace Lake. For the first time a public company organized and financed a major mining development in northern Canada. When the government removed restrictions on private development of uranium deposits in 1948, prospecting in the area became intense and private companies developed mines in the early 1950s. They developed the area using seasonal water transport from the upper Mackenzie Waterway in northeastern Alberta and using winter roads and air transport. The first large modern community in northern Saskatchewan, Uranium City, was built near the Eldorado properties to serve the mining operations. The population reached about 3 400 by 1956, but with the decline of the uranium market at the end of the decade growth ceased and, while the town remained an important service centre in the Saskatchewan north, the population subsequently declined. All mines except the Eldorado ceased operating in the 1960s. In the early 1970s several foreign countries, with no substantial uranium resources, showed interest in developing Canadian sources of supply for their atomic energy plants. In Saskatchewan in 1970 Gulf Minerals Company, backed by a West German company, decided to develop its uranium property at Rabbit Lake in the Wollaston Lake area.⁹⁶

Apart from the parts of the Flin Flon mining area which lie in Saskatchewan, the only other base metal mining operation in the province is at Waden Bay on Lac La Ronge, where copper sulphides were discovered in 1915. In 1966 Anglo-Rouyn Mines brought the property into commercial production, trucking concentrates 426 km to Flin Flon for smelting.⁹⁷

Northern Alberta contains few likely metallic mineralized areas, but in 1947 the Alberta petroleum industry moved north to Leduc and spread out from there. Of the three major producing areas developed after Leduc, two were north of Edmonton. The Swan Hills field northwest of Edmonton was discovered in 1957 and the Rainbow Lake field in the far northwest corner of the province in 1965.⁹⁸

In the northeastern part of the province, the principal resource development, since the war, has been in the Athabaska tar sands where the first synthetic crude was produced at the Fort MacMurray plant of Great Canadian Oil Sands Limited in 1967. Described as the "largest single industrial project ever completed in Alberta", \$235 million had been invested before production began.⁹⁹

The oil sands lie under some 77 700 sq. km of northeastern Alberta. Only 17 sq. km of this, leased to Great Canadian Oil Sands, were estimated to contain reserves sufficient for 30 years of operation at the initial permitted capacity of 45 000 barrels per day. Output of the plant was transported by a 428-km, 16-inch (41-cm) company pipeline to Edmonton.

The Great Canadian Oil Sands' operation involved development of a new technology for extracting oil from oil shale and development of open-pit mining techniques capable of handling enormous volumes of overburden and the oil shale itself. The capacity of the mining operations was increased in 1969 with construction of a secondary conveyer system and modifications to the treatment plant. Output in 1969 increased to 10 million barrels of synthetic crude.

Two other important fuels produced in northern Alberta since the war are natural gas and coal. Gas found in the course of oil exploration in northern Alberta was not commercially exploited on any scale until the late 1950s. Some gas was used to supply communities in the Peace River country in the early 1950s, but it was not until 1957, when the West Coast Transmission Company built a natural gas pipeline from B.C. into the area, that export became feasible.¹⁰⁰ Natural gas production requires gas processing plants, many of which were built in northern Alberta in the late 1960s. The most northerly was a \$15-million plant

built by Banff Oil Limited in the Rainbow field in 1968. One of the largest is the \$28-million Fox Creek plant of the Hudson's Bay Oil and Gas Company.¹⁰¹

Although coal deposits in southern Alberta were extensively developed in the course of railway construction in the early 1900s, there seemed little possibility of commercial development of coal north of 55°. In the early 1960s, however, McIntvre Porcupine Mines Limited carefully studied the geology of the Smoky River area on the east slope of the Rocky Mountains. Large deposits of high-grade coking coal were discovered. All that was required for development of the resource was a large enough market and transportation facilities capable of handling a large volume of this heavy, bulky cargo. The former was found in Japan where the steel industry was hungry for this type of coking coal and willing to enter into long-term contracts to acquire a steady supply of it. The transportation problem was solved by construction of the Alberta Resources Railway, a 377-km rail line running along the foothills from Brulé (near Hinton) to Grande Prairie. Coking coal from the McIntyre Porcupine mines is shipped directly to Vancouver by means of special 80 - 100-car trains.

Other types of coal produced are utilized locally by a Canadian Utilities Limited thermal generating plant built near the mining operation for this purpose. Rated capacity is 150 000 kW feeding into the existing distribution grid at Grande Prairie.¹⁰² These developments are served by another "instant community", Grande Cache, built in 1969. By 1970, the population was over 1 300, mainly employees of McIntyre-Porcupine.

British Columbia: The mining industry in B.C. has developed differently than in the shield regions further east, in part because of differences between cordilleran and Pre-Cambrian geology, but also because of different kinds of transportation and power development possibilities. Apart from the placer mining industry, which has steadily declined in importance since the turn of the century, the mining industry in northern B.C. had always been characterized by a large number of short-lived or sporadically productive mines based on small pockets of high-grade ores. This pattern persisted until the late 1950s, at which time several large developments were initiated which promised to provide a more stable contribution to the region's development. The most notable of these were the oil and gas fields of the northeast; the asbestos mine at Cassiar; the Endako and British Columbia Molybdenum Company molybdenum mines.

The old Stella molybdenum property west of Fraser Lake was first staked in 1927 and intermittently developed for many years. Little came of this work until the early 1960s when an independent mining engineer, Andrew Robinson, advanced development to the point where an established mining firm, Canadian Exploration Company, would take over the project.¹⁰³ With adequate financial backing secured, an extensive exploration of the deposit between 1962 and 1965 established the existence of very large reserves, workable by open-pit methods. In 1965 the mine was officially opened and became one of the largest molybdenum producers in the world. The concentrator at the mine had a

designed capacity of 9 072 metric tons of ore per day, with primary reserves estimated at over 60 million metric tons and low grade reserves at about the same amount.¹⁰⁴ The principal markets for the output of Endako are Japan and western Europe.

Another recently-developed property in this general area is the copper deposit on McDonald Island near Babine Lake. First staked during World War I, the property was investigated by Consolidated Mining and Smelting Company in the late 1920s, but market conditions prevented further development. In the 1950s the Granisle Copper Limited did further development work and began open-pit mining in the late 1960s. In 1972 the company increased concentrator capacity from 4 500 to 12 700 metric tons per day, with the output going to Japan. This development was typical of a number of smaller non-ferrous metal operations undertaken during the last decade in northern B.C., in that it reflected the influence of rising metal prices combined with new technologies which permit relatively low cost production from mines previously considered uneconomic. This technology involves new ore finding techniques, better and more flexible diamond drilling equipment and, perhaps most important, highly efficient and relatively compact earthmoving and other material-handling equipment. Thus, in the late 1960s several copper-lead-zinc, and even iron deposits were in various stages of development in the areas northwest of Prince George, north of Prince Rupert, and on the Queen Charlotte Islands, in addition to those already mentioned.

The area just east of the Alaska Panhandle was particularly active in this respect in the late 1960s, with British Columbia Molybdenum producing that mineral at Lime Creek, just south of Alice Arm, Silbak Premier Mines producing gold, silver, lead and zinc, and Granduk producing copper. The latter is a substantial development, based on estimated reserves of 39 million metric tons. Development required tunnelling for over 16 km under four mountains and three glaciers. A 6 800-metric-ton per day concentrator produces concentrates for shipment from the port of Stewart to smelters at Tacoma.¹⁰⁵

Development of the oil and gas industry in northeastern B.C. was first attempted under provincial government rather than private auspices. The first government wells were drilled north of Hudson's Hope in the early 1920s, but without success. The government made a further attempt in 1940 west of Dawson Creek, also without success. In the late 1940s the area was opened up to commercial exploration and in 1948 a natural gas well was brought in near Pouce Coupe, adjacent to established wells in Alberta. Further drilling between 1950 and 1952 eventually led to designation of the Fort St. John field. Development of the field was contingent, however, on establishment of a market for the gas in the U.S. Exports were not approved until 1955. A gas pipeline connection to link the Fort St. John field to the U.S. gas distribution system was completed in 1957 and an intensive development program was begun in the area.¹⁰⁶ By 1965 more than 530 gas wells were capable of production in northeastern B.C.¹⁰⁷

Oil development was generally slower in the region and little producing capacity was demonstrated until 1959 when the Boundary Lake Field lying along the Alberta boundary east of Fort St. John was opened up. By 1965 there were approximately 500 oil wells in the Peace River – Liard region as a whole.¹⁰⁸

The most northerly major mineral development in B.C. since World War II is the Cassiar Asbestos mine about 160 km south of the Yukon-B.C. boundary. In the absence of any transportation routes to centres further south, the large asbestos deposit on McDame Mountain was developed using the facilities available in Yukon Territory.

The Alaska Highway provided access to the region and greatly facilitated prospecting there. Claims were staked in 1950 and in 1951 Conwest Exploration Company optioned property and formed Cassiar Asbestos Corporation to develop and operate it.¹⁰⁹ A peculiarity of the deposit, apart from its mountaintop location, was that the asbestos fibre was in an ore body located in permafrost, an advantage in this case because it facilitated separation of the fibre from the rock.¹¹⁰ Transportation posed the usual problems. Access to the mine was by a 140-km road built from the Alaska Highway to a mill site in the valley below the mine. An aerial tramway was used to carry the ore from the mine to the mill. Production began in 1954, with the asbestos being trucked over 610 km to Whitehorse for trans-shipment to Skagway via the White Pass and Yukon Route Railway. The product was then shipped to Vancouver en route to its final markets abroad.

The relationship of the Cassiar development to the Yukon was strengthened by a tie-in between its trucking operation and that of the United Keno Hill lead and zinc mining enterprise north of Whitehorse. More recently Cassiar Asbestos has opened up a large new asbestos mining property in the Yukon at Clinton Creek, one of that region's most significant mining development since the Klondike placer days.

Yukon and Northwest Territories: Mineral development in the Yukon after World War II was largely stagnant until the 1960s. In Yukon Territory, the old Treadwell Yukon Company properties at Mayo were taken over and redeveloped in 1945 by a new organization, the Keno Hill Mining Company subsequently reorganized as United Keno Hill Mines Limited. A new mill was constructed in 1947. Silver was the principal metal which sustained the mining operations at Mayo in the post-World War II years, although the lead and zinc content of the ores was also sometimes in demand. Severe transportation problems were alleviated in 1950 when the Mayo-Whitehorse highway was completed and permitted establishment of a trucking operation to replace the old seasonal river system to carry concentrates from the mines to Whitehorse. Power supplies were also improved in the early 1950s through construction of a small hydroelectric station on the Mayo River by the federal government's Northwest Territories (NWT) Power Commission (subsequently renamed the Northern Canada Power Commission). Fuel for heating at the mines was obtained from the company's own coal mining operation at Carmacks.¹¹¹ United Keno Hill announced in 1966 that its operations at Mayo would be closed due to depletion of ore reserves, but production has been sustained on a limited basis to time of writing.

With the cessation of significant placer mining in the Klondike in the 1960s and the exhaustion of the Mayo mines, the collapse of the

Yukon mining industry appeared imminent. By the early 1970s, however, several new mining properties were being brought into production. All were modern, highly mechanized operations similar to the recent developments in B.C. The most important were the Clinton Creek asbestos property developed by Cassiar Asbestos, the Whitehorse copperbelt properties revived by New Imperial Mines, and the large Anvil lead-zinc-silver mine in the Ross River area some 185 km by air northeast of Whitehorse.

Cassiar brought Clinton Creek into production in 1967. The company built a new townsite to serve the mine (instead of relying on Dawson) and received substantial assistance from the federal government including a new ferry at Dawson and an aerial tramway to permit ore to cross the Yukon River.¹¹² The New Imperial Mines copper development about 13 km south of Whitehorse began producing copper concentrates in 1967. Japanese interests provided part of the capital in return for guaranteed share of the mine's production.

One of the largest recent mining developments in the Yukon was the Anvil-Dynasty lead-zinc project in the Vangorda Creek district of central Yukon. In 1964, Dynasty Explorations, still a small Vancouverbased company, did initial exploratory work on the property. A local prospector, Alan Kulan, had staked the claim 10 years earlier.¹¹³ Progress was slow until, in 1965, financial support was obtained from Cyprus Mines Corporation, a Los Angeles firm. The federal government budgeted over \$25 million in public funds to provide access roads, power supplies, communications facilities, townsite development, and a worker training program.¹¹⁴ With this help, the mine was brought into production in 1969. Again Japan provided a major market secured through an 8-year contract. Concentrates were trucked to Whitehorse for shipment to Skagway via the Yukon and Whitepass Railway.

Mining development in the NWT was considerably more active in the immediate post-war years than in the Yukon, due largely to the resumption of development in the Yellowknife gold-quartz mines and the uranium boom of the 1950s. The latter sparked an intensive exploration program throughout the territories, although only one new major mine, the Bayrock property north of Yellowknife, was actually brought into production. Both it and the Great Bear Lake mines were closed when the boom ended in the 1950s, although Echo Bay Mines Limited subsequently redeveloped the latter as a silver-copper mine.

Four large gold mines in the Yellowknife area, the largest of which was the Giant Mine, were the mainstay of the Mackenzie District's mineral industry during the 1950s and 1960s. They had been initiated in the 1930s and were conventional hard-rock precious metal mines. The newer types of northern mining which were developing elsewhere in Canada did not appear in the territories until the opening of the leadzinc properties at Pine Point on the south shore of Great Slave Lake.

Development of the Pine Point lead-zinc deposits required a major investment in a high-volume transportation link to southern smelters and this was provided, after considerable controversy, by the publiclyfinanced Great Slave Lake Railway. Power for the development was also provided publicly, in this case by a \$10-million hydroelectric plant built by the Northern Canada Power Commission on the Taltson River. The main property, held by Consolidated Mining and Smelting was brought into production in 1964. Several other firms were active in the vicinity, but the familiar process of absorption of smaller ventures by a dominant firm again took place and in the late 1960s Pine Point Mines (the Consolidated Mining and Smelting Corporation's subsidiary) took over the adjacent Sphinx mine of the Pyramid Mining Company and in 1972 the property of Coronet Mines. By 1973 Pine Point was producing 900 metric tons per day with concentrates going to Cominco's smelters and also to markets in the U.S., Japan, and Europe.

Two smaller developments in the NWT in the 1950s and 1960s reflected the new mine-finding and development technologies of the post-war era. Both were located in remote parts of the territories, one just east of the Yukon-NWT boundary north of Watson Lake, the other on the west coast of Hudson Bay at Rankin Inlet.

Canada Tungsten Mining Corporation developed the tungsten deposits in the southwestern part of Mackenzie District in the early 1960s. The federal government assisted by building an access road from the Watson Lake-Ross River road in the Yukon. The difficulties encountered in bringing the property into regular production included destruction of the mill by fire in 1966, but by 1969 a milling capacity of up to 450 metric tons had been achieved. The operation is relatively small and highly mechanized.

The other development, a nickel-copper mine at Rankin Inlet, more than 483 km north of Churchill, operated only from 1957 to 1961, but was of considerable significance as a proving ground for arctic mining technology and as an experiment in employing local Inuit labour in modern industrial occupations. Most of the underground workings were in permafrost, the concentrates produced had to be stockpiled for the short summer shipping season, and all necessary services had to be provided at the site. Only a few Inuit families lived in the vicinity before the mine was opened, but it soon attracted enough people to become one of the major settlements in the eastern Arctic. The ore deposit was rapidly exhausted, however, and when the mine closed, the community was left with no economic base. It survives, however, as a service centre, heavily dependent on government payrolls and transfer payments.¹¹⁵

Hard-rock mining prospects in the NWT proved generally disappointing in the 1960s, although several large ore bodies were tentatively explored, notably in the eastern Arctic, far from established mining locations in Mackenzie District. One, a large iron deposit in northcentral Baffin Island and another, a lead-zinc deposit at Arctic Bay on Baffin Island, were particularly actively investigated. Of these new prospects only one, the Arvik Mines lead-zinc property owned by Cominco and Bankeno Mines Limited on Cornwallis Island was scheduled for production at time of writing.¹¹⁶

All these metal mining activities in the far north were overshadowed in the later 1960s by the arctic oil and gas developments which arouse so much public interest in the 1970s. Until the late 1960s the prospect of oil and gas as an export industry in the territorial north seemed extremely remote. Indeed even the prospects of oil and gas being developed to serve local markets were not impressive given the experience of the 1940s and 1950s. Petroleum exploration by the large international oil companies in the early 1960s ranged through the Peel River and Mackenzie Delta regions, the southeastern parts of Yukon, and into Cornwallis and Bathurst Islands – without significant results. It was not until the Prudhoe Bay strike in Alaska in 1968 that such efforts were encouraged. Exploration expenditures for oil and gas north of 60° in Canada subsequently increased enormously, reaching over \$75 million in 1961.¹¹⁷ Later in the decade, between 1 July and late October 1968, over 28 million hectares (ha) in the area were covered by oil and gas exploration permits. By the end of 1970, more than 30 drilling rigs were committed to work in the far north.

The first widely publicized oil strike was made by Imperial Oil at Atkinson Point on the Tuktoyaktuk Peninsula early in 1970. Later the same year Panarctic – a consortium of private companies and the federal government – struck gas on King Christian Island. Although this publicly-initiated joint government-business venture remained active in the Arctic Islands, in 1970 it farmed out part of its Arctic Islands exploration territory to private firms, and the familiar pattern of large enterprises taking over from smaller enterprises to exploit northern resources began to emerge yet again. The Toronto *Globe and Mail* of 13 October 1970 (cited by Jim Lotz in his *Canadian Annual Review* section on the Yukon and NWT for that year) reported: "most of the permits taken out by smaller companies and individuals are being taken over by large and mostly U.S. oil companies, which will probably dominate the oil search in the Arctic Islands by next year."¹¹⁸

In 1971 drilling by Imperial Oil at Atkinson Point and Taklu gave further showings of both gas and oil, B.P. had two wells near Satellite Bay on Prince Patrick Island, and the French firm Elf Petroleum was drilling a test hole on Banks Island. Elsewhere in the territories, Shell Oil was drilling in the Mackenzie Delta and also southeast of there in the so-called Glacier Block.¹¹⁹ One of the more active firms, Imperial Oil made a third significant strike in the delta area in winter 1971-72 and began work on its artificial island in the Beaufort Sea, some 10 km offshore. In February 1972 Panarctic struck oil on the west side of Ellesmere Island on the Fosheim Peninsula. A dozen rigs were drilling on the Beaufort Sea coast in winter 1972-73.120 As exploration continued, further gas reserves were located by Panarctic at its Hecla well on the Sabine Peninsula of Melville Island. Whether sufficient petroleum and natural gas to support pipeline construction to southern markets would be found remained a matter of speculation at time of writing. Even so, these developments had already prompted a major national debate over development priorities, timing, and methods. International energy corporations; environmental protection agencies, both public and voluntary; several levels of government; academics; and the general public all became intensely involved.

Forest Industries

The forest industries, notably pulp and paper, once again emerged as a leading force in opening up northern Canada in the post-World War II period, particularly in western Canada where the forested subarctic had remained virtually untouched until this period. This development force is not really a "private" one. The pulp and paper industry in Canada has always been subject to some public control due to public ownership of its resource base, its dependence on commercial policy and, the fact that over-investment by private firms in the inter-war period led public authorities to regulate its "competitive" aspects in the interests of economic stability. After World War II public participation was carried further, with provincial governments not only using traditional incentives to attract private pulp and paper firms to their jurisdictions, but also entering into direct partnership agreements with the companies concerned.

In Labrador the most productive forest areas are in the basins of rivers draining into Lake Melville and Sandwich Bay and along the rivers which flow into the Atlantic. About 15 per cent of Labrador is classed as productive forest, not counting some 6.4 million ha of lichen forest. The status of this forested land in the early 1960s was as follows:¹²¹

Limit Holders

Unoccupied Crown land	3 40 400 ha
Newfoundland and Labrador Corp.	1 072 000 ha
British Newfoundland Corp.	3 40 400 ha
Newfoundland Pulp and Chemical Co.	2 530 400 ha
Total	4 283 200 ha

The first major commercial exploitation of the Labrador forests will likely result from the Newfoundland government's support of a huge linerboard mill which Canadian Javelin was constructing in the late 1960s at Stephenville. The wood chips required by this mill were to be supplied from Labrador. This development was typical of the new style of large-scale industrial development in the 1960s in that while it was organized and managed as a private venture, it depended upon a heavy commitment of financial and other support by a provincial government. Before it was completed, this project, like several others elsewhere in Canada, "went sour" and in 1972 the Newfoundland Government bought out the private firm's equity and set up a Crown corporation to complete and operate the mill and, it was expected, the Labrador logging operation.¹²²

In Ontario the pulp and paper industry expanded rapidly in the 1950s. Between 1949 and 1957 the gross value of pulp and paper production in northwestern Ontario increased by 72 per cent and, despite the growth of mining, remained the main source of employment and income in the area. A large part of this and more recent expansion is attributable to improved timber harvesting methods which substitute compact power saws and mechanical "tree pickers" for traditional hand cutting. Thus, in northwestern Ontario, while gross value of production increased by 72 per cent in the period cited, employment in the industry increased only 26 per cent.¹²³

In the early 1970s, provincial government planning for northern Ontario emphasized expanding employment by encouraging growth of the pulp and paper industry, particularly in the northwest. The province's "Design for Development: Northwestern Ontario Region" report called for creation of 4 000 and 5 000 new jobs in the pulp and paper industry over a 20-year period. In 1974 the premier announced that attainment of this objective appeared likely in view of two new integrated forest products developments in the Dryden and Red Lake areas by Anglo-Canadian Pulp and Paper Mills Limited and a \$163-million expansion of the Great Lakes Paper Company at Thunder Bay. The government's direct role in these developments is not known, although the president of the latter firm is reported to have "hinted" to shareholders that some of the company's timber licenses might have been taken away if its expansion had not been undertaken.¹²⁴

The pulp and paper industry of the Prairie Provinces is almost entirely a product of the efforts of these provincial governments in the 1950s and 1960s to attract industrial development.

Manitoba's only major pulp and paper development since World War II has been the scandal-ridden Churchill Forest Industries project at The Pas. Premier Roblin announced in March 1966, that his government had contracted with Monoca A.G., a Swiss trust company, to build a combined pulp and lumber mill at The Pas. Total cost was estimated at \$100 million and the company was given cutting rights in a 104 000km² reserve. Later that year, the Manitoba Development Fund gave a \$3.5 million loan.¹²⁵ Late in 1968 a \$1.5 million sawmill was opened. The entire project was taken under government trusteeship in January, 1971.

Saskatchewan's first (and to date only) pulp mill was completed in 1968 at a cost of some \$65 million. Parsons and Whittemore of New York built the plant in Prince Albert in collaboration with the provincial government. The firm was given a 70 per cent equity in the plant for a cash payment of \$7 million. The province, holding the remaining equity, guaranteed a \$46 million loan floated by the company in the U.S. and provided a number of other incentives: construction of necessary forest roads, a guaranteed price for logs supplied to the mill by a Crown corporation set up to handle the logging operation, reduced stumpage rates, free reforestation stocks, and construction of a natural gas pipeline for the mill.¹²⁶ In addition to this provincial support, the federal government also provided a \$5-million industrial incentive grant to assist the project. The entire undertaking was denounced by the leader of the then CCF–NDP opposition as the "biggest giveaway since Manhattan Island."¹²⁷

Apart from such criticism, the mill has operated successfully and a large expansion program was carried out in the early 1970s. Apparently satisfied with its performance, the government subsequently negotiated a second, larger development for the Meadow Lake region with the same firm. The agreement was cancelled, however, with the change of government in 1971 on the grounds that it was "financially imprudent."¹²⁸

Alberta's first pulp mill was initiated in 1955 as a partnership between the St. Regis Paper Company and the North Canadian Oils Limited with what has been described as "the active interest of the province of Alberta." The mill is located at Hinton, on the Athabasca River, in the centre of a 7 800-km² forest area leased by North Western Pulp and Power Company.

The province's second mill, located near Grande Prairie, was

initiated in the early 1970s as a result of efforts by the provincial government. Canadian firms were uninterested in the proposed development and in 1970, a U.S. controlled firm, Proctor and Gamble Cellulose Limited, undertook it with extensive provincial government support and a \$12-million grant from the federal Department of Regional Economic Expansion (DREE). Anticipated employment was 700 in the woodlot and mill operations, with capital outlays estimated at \$80 million.

In the 1950s pulp mills were built in northern B.C., for example a pulp mill complex in Port Edward (adjacent to Prince Rupert) built by Columbia Cellulose Limited, a subsidiary of Celanese Corporation of New York. The first unit of this complex, a bleached sulphite mill to produce acetate and viscose grades of pulp, was constructed in 1951 to supply the parent company's textile, plastics, and specialty papers operations in the southeastern U.S. The second part of the complex, an \$80million kraft mill, was a joint project of Svenska Cellulose and Columbia Cellulose, which came into production in 1967.¹²⁹ Unusually high operating costs of this complex in the early 1970s, attributable in part to a scarcity of sawmill chips, led the company to threaten to shut down. In 1973 the provincial government acquired a majority interest in Columbia Cellulose (subsequently renamed "British Columbia Cellulose").¹³⁰

Another coastal development in the late 1960s was the Eurocan forest products manufacturing complex at Kitimat, which was financed almost entirely by Finnish interests and which included a governmentcontrolled company as one of the important participants. Pulp and paper and lumber products are produced in automated plants and shipped from a deep sea terminal in the Kitimat Arm of the Douglas Channel.

However, in terms of the impact of the pulp and paper industry on northern development in B.C., these projects are eclipsed by the construction of new mills in the Prince George area and, further north, at the new "instant town" of Mackenzie on the reservoir created by the Bennett Dam. Although an abortive attempt had been made to develop a pulp mill at Prince George in the 1920s, the first mill successfully established there began operations in 1966. Canadian Forest Products of Vancouver and the Reed Paper Group of London, who hold equal shares in the Prince George Pulp and Paper Limited built the plant. By 1974 it was producing 363 metric tons per day of kraft pulp and the same quantity of linerboard. A second pulp mill was built in 1968 adjacent to this one and managed by the same organization. In 1966 Northwood Pulp Limited, a joint venture of Noranda Mines of Toronto and The Mead Corporation of Dayton, Ohio, built a third major mill in the area.

The damming of the Peace River for hydroelectric power production in the mid 1960s created an enormous reservoir providing access to large tracts of forest. British Columbia Forest Industries Limited and another firm, Cattermole Timber Limited, were given cutting rights to an area in the region. In 1966 BCFI built a large sawmill and subsequently a stud mill and a pulp mill, and Cattermole a refiner groundwood mill, and sawmill, all in the vicinity of what has become the town of MacKenzie. By 1972 MacKenzie's population was over 4 500. Since 1969 Noranda Mines has been the largest single shareholder in BCFI.¹³¹

Other "Staple" Industries

The economic growth of northern Canada has been based on staple exports: pulpwood, minerals, and wild furs. Certain areas have attracted entrepreneurs interested in exporting timber and lumber, fish, ranchraised furs, and some agricultural products, and if supplying services to tourists and vacationers is an "export" industry, that is also a northern staple. These are all supplementary export industries: they have seldom been operated on a scale to attract the amount of private or public investment to which a major development significance could be attached. In this respect, they resemble the local secondary and tertiary industries more than they resemble mining and forestry, the staple industries already described. The critical elements in this distinction are scale and form of enterprise. In the north the lumber mills and wood products industries (other than pulp and paper) and most of the agricultural, fur farming, and local and inland fishing operations have generally been small single proprietorships or partnerships. There are a few exceptions to this form of enterprise but these industries have typically required some form of collective support, if not in the form of subsidy programs, at least in the form of marketing boards or other devices designed to offset the disadvantages of small-scale, relatively competitive producers operating in a modern industrial context. Because of this we will consider these other "staple" industries as part of the domestic commercial economy.

The Domestic Commercial Economy

That part of employment and income created in the north by the modern staple trades based on minerals and pulpwood accrues for the most part to an immigrant population, the servicing of which has given rise to a number of secondary and tertiary industries operated by northerners. Businesses which supply inputs such as fuels and process supplies required by the staple industries also provide local employment. The local commercial economy thereby established has displayed certain general characteristics which are important to an understanding of the political economy of northern Canada today. This economy is atomistic, being comprised of widely dispersed centres of activity corresponding to the principal mining or pulp developments. Each centre is a miniature replica of the industrial economy of the south in terms of per capita income levels, life styles, consumer preferences, technology. The units seldom develop linkages among themselves. They also tend to be separated from the "native economy" of the north. The latter, comprising the hunting, trapping, and fishing industries, has been declining with employment levels failing to keep pace with the growth of the native Métis, Indian, and Inuit populations which have traditionally been dependent on them. The extremely low and uncertain income levels in these traditional employments mean that they have only a subsidiary significance to most local business enterprises, few of which could exist on the basis of the earned income accruing to those who live by the traditional methods. Because of the lack of integration between units of the modern industrial economy in the north and the

remains of the traditional economy, and because of the isolation of units of the industrial economy from one another, there has been little opportunity for organic development structures to emerge from the activities of *commercial* enterprise in the north.

This situation has been quite altered in recent years as a consequence of the enormous expansion of tertiary industries, both private and public but predominantly public, which has been taking place since World War II. In terms of development significance, the influence of these industries has swamped the spread-effects of the secondary commercial industries, a trend which has been reinforced by a tendency for the latter to be weakened, rather than strengthened, by new transportation and communication facilities and technologies, which have made it increasingly difficult for local businesses in the north to compete with outside sources of goods and services.

The consequence of this lack of integration was a dualism in which the resident, mainly native, population was reduced to relative poverty, in sharp contrast to a new, often transitory, population's apparent affluence. With the advent of "welfare state" approaches to social policy in the 1940s, this situation invited a massive infusion of socal services and later, regional development measures to alleviate unacceptable disparities. These changes had little effect on the primary staple industries, but they transformed the domestic economy of northern communities. The new programs provided a source of income and some employment opportunities which not only did not depend on the success of the goodsproducing enterprises operating in these areas, but were actually inversely related to them. Whenever the goods-producing activities declined, the welfare and development programs were expanded. Consequently the domestic economy of the north is becoming more and more a service- rather than a goods-producing economy. And because these services are produced mainly by public agencies, the modern domestic economy of the north is directly governed more by public decision-making processes than it is by market forces.

Public Policy

The Historical Role of the State in Canadian DevelopmentL

The preceding discussion of the role of private enterprise in the history of northern Canada has emphasized the monopolistic, large-scale, and externally-directed character of the businesses which have shaped the economic history of this area. Government in northern Canada has shared these characteristics to a remarkable extent. Government institutions have been monopolistic in the sense that policy has been made through a highly centralized system of public decision making in which only a few interested groups had a direct influence on policy outcomes. Similarly the administrative structures through which these policies were applied were also typically highly centralized organizations, notorious for their insensitivity to local or other particular influences. These political structures were also consistently large scale in that they governed immense jurisdictions and depended upon extensive systems of communication and control. The centres of these systems of control were
outside the north, just as were the centres from which commercial enterprises were conducted.

This structural similarity between the business enterprises and the public decision-making bodies is reinforced by the similarity of the interests of the two groups. While this may frequently have been a product of specific business influence being brought to bear on politicians, it was more often simply the consequence of business and political leaders in the outside centres of industrial and political power sharing the same points of view.

It is important to understand in this respect how different the Canadian and American traditions of political economy have been. The role of the state in this country has traditionally been an economic one. Indeed, a government strategy for economic development was the essential element in the birth of Canada. This strategy did not reflect the values embodied in the American cultural myth: popular government, competitive enterprise, decentralization of authority. Instead it favoured responsible government, monopoly enterprise, and centralization of authority. In such an approach there was no more reason to think that business and government should be opposed or even separated than there was to think that the cabinet should not sit in the legislature. Nor was there any reason to favour decentralization of authority or competition in the market place as desirable objectives in themselves. On the contrary, practical necessities, including the threat of absorption by the U.S., turned these phenomena into problems to be overcome. Professor Donald Smiley cites S.D.A. Clark on this theme:

"S.D.A. Clark wrote in 1964, "The Canadian political community was not the creation of a people seeking a distinctive national identity. It was the creation of certain business, political, religious and cultural interests, seeking the establishment of a monopolistic system of control. Geography, which favoured individual enterprise and limited political interference in the conduct of economic, social and religious affairs over a large part of the continent, favoured on this part of the continent large-scale bureaucratic forms of organization and wide-spread intervention by the state. Essentially, in Clark's analysis. Canadian development has been bureaucraticelitist, American the result of individual enterprise, and these two patterns have given rise to very different value systems. Much of Clark's argument is based on the difference between the Canadian and American frontiers and the relations between these frontiers and their respective metropolitan centres. The American part of the country was staked out in the main by individual farmers, the demands of nation-building did not require that these successive agricultural frontiers be subjected to stringent metropolitan controls and American capitalism has been pervasively influenced by these individualistic origins. In contrast, Canada has been what the late H.A. Innis calls a 'hard frontier.' The exploitation of her resources has required large accumulations of capital, corporate forms of business enterprise, and state support "132

Certainly the north has been such a "hard frontier" and the role of the state in its development has been consistent from the earliest years of whaling in the arctic to the mega-developments of recent mining

and exploitation of energy resources. This role has transcended changes in the political bodies which have carried it out: whether the Imperial authorities in London in the 18th century, the federal authority in Ottawa after 1867, or the provincial and territorial governments which assumed jurisdiction over parts of the region thereafter. State support of large-scale, monopolistic enterprise in the north has, of course, taken different forms. At times it has entailed grants to firms of exclusive operating rights, often combined with a policy of non-intervention by the public authorities in the internal affairs of the territory so controlled. At other times it has taken the form of public investment in overhead capital, notably transportation and power facilities. When private enterprise has been incapable for one reason or another of achieving the requisite scale of organization, the state has intervened directly by entering into partnership with business firms, or by establishing marketing monopolies, or even by establishing public corporations to do the job. Perhaps nother better symbolizes the continuity of this tradition of state supported monopoly control (and the irrelevance to the Canadian experience of the American dichotomy between private and public enterprise) as the similarities between the Hudson's Bay Company's role in the early history of New Ouebec and that of the James Bay Development Corporation at the present time.

So far as the export-base economy of the north is concerned, then, the role of the state has been a positive one carried out by means of policies designed to support and sometimes to lead large-scale enterprises to exploit the land resources of the area. Historically this role has changed very little. As we saw in the preceding section, however, the role of the state in relation to the "domestic" economy of the north *has* changed, the turning point coming in the 1940s when the traditional laissez-faire policy toward the domestic economy of the north was abruptly replaced by a degree of involvement that within little more than a decade made "government" the most important local industry of the area.

The historical evolution of the public policy-making institutions relevant to the north is a long and complex story which can be only briefly summarized here. Most of the area was under direct British jurisdiction until 1870: the Hudson Bay drainage basin, known as Rupert's Land, and the North-Western Territory comprising the other territories of the interior claimed by Britain, were nominally administered from London. On the west coast B.C. was already established in approximately its present boundaries with a well-developed system of government centred in Victoria, a system based on the developed British colonial model, with an elected legislature and strong cabinet executive. On B.C.'s entry into Confederation in 1871, the conversion to provincial status was relatively simple and the new provincial government in Victoria continued to administer as before its vast northern and interior hinterland, most of the resources of which were vested in the Crown as represented by the local authority. As elsewhere in the new Dominion, responsibility for the Indians of B.C. was transferred to the federal authority. The federal government also retained control of certain lands adjacent to the CPR and, in the northeast, the Peace River Block, which it held between 1906 and 1930.133

Northern B.C. was represented in the provincial legislature from an early period (as Zaslow notes, "even though this was far from deserved in terms of population") so as to provide residents of the area with a means of communicating their needs to Victoria.¹³⁴ An interesting feature of public administration in the area was the use of provincial civil servants, regional mining commissioners, to represent provincial authority in the often short-lived and frequently turbulent mining camps. These officials, along with a few provincial police constables, and sometimes a customs collector, constituted a form of local government in northern B.C. It was not, however, a local government on the U.S. model. Indeed, Zaslow suggests that its purpose was to *prevent* the development of regional governments created by the residents themselves.

"The government's fear was that if the miners were left too much alone, they would provide for their needs by establishing *de facto* squatter governments on the model of the traditional miners' meetings that had been evolved in the western United States. Since the authorities did not want such organizations petitioning to Washington or getting ideas of constituting themselves into governments, the gold commissioners watched the miners' meetings closely and turned them into orderly vehicles for expressing local needs and for calling for governmental action.¹³⁵

As settlements in the north matured, many were eventually provided with the system of local government common elsewhere in the province and throughout most of settled Canada - municipal authorities operating under powers delegated to them by the province. The federal government retained jurisdiction over the natural resources of most of the rest of northwestern Canada until well into the present century. The transfer of large portions of the Northwest Territories to the new provinces of Alberta and Saskatchewan in 1905 and to Manitoba in 1912 gave these governments a limited role in northern development, but this was severely restricted until 1929 when jurisdiction over the resources of the Prairie Provinces was transferred to the provincial governments. Similarly the creation of territorial governments for the Yukon at the end of the 1890s and the Northwest Territories in the early 1920s provided for some local influence on development policies in these regions, but again this was limited by reservation of their resources to the federal authority.

In central Canada, the southern fringe of the north was subject to the development policies of the governments of Ontario and Quebec, while the lands lying north of a disputed line remained under federal jurisdiction until the land transfers of 1912 extended the boundaries of these provinces to their present limits. The Labrador coast remained under British jurisdiction, as exercised by the Newfoundland administration, until 1949 when Newfoundland entered Confederation.

Northern Development Policies Before World War II

Federal

The federal government was particularly active in economic development between 1867 and World War I, but this activity was primarily related

to establishing a transcontinental transportation system and to the associated settlement of the prairie west. The effects of these positive development policies, so far as the north was concerned, were largely incidental. The federal government's main role within the northern regions themselves was regulatory: to administer the territories so as to preserve peace and order among the native and immigrant populations, to accommodate the needs of the fur trade, and to deal with any problems created by mining developments as they occurred. Land surveying, mapping and geological studies, the regulation of transportation, including air transport after World War I, were also accepted functions of the federal authority in the north as elsewhere in the country. During the later decades of the 19th century the federal government's role in administering the northern districts of Athabaska, Ungava, Franklin, Mackenzie, and Yukon was concerned mainly with administration of Indian affairs; regulation of fisheries; and limitation of hunting and trapping, especially by newcomers to these districts. Enforcement of these policies became a responsibility of the Northwest Mounted Police who, in the 1880s and 90s, were called into service further and further north from their original field of activity in the southern prairies.136

The influx of population into the Yukon District in the 1890s prompted Ottawa to give it separate territorial status in 1898. The Yukon Act of 1898 established a form of government which included a chief executive officer, called a commissioner, appointed by the federal government; an appointed council; and jurisdiction over most "provincial matters" as defined in the British North America Act, except management of the natural resources of the area.¹³⁷ This was initially a wholly appointed system of administration. A degree of local representation was provided the following year, but despite continuous agitation on the part of Yukoners, the council was not made fully representative until 1908. Even then, as Lingard notes, "the Commissioner was responsible to the federal government alone in respect to his wide executive and administrative functions." While the elected council could "initiate and pass legislation for the Commissioner's approval, disapproval or reservation for the assent of the Governor-in-Council . . . they possessed no control over its execution."138 With the decline of the placer mining industry after 1900, the federal government's policies in the Yukon were aimed at economizing on the costs of administering the area. Although the territorial government sought to promote lode mining. Ottawa showed little enthusiasm for such positive meaures and consistently cut back the funds available for local road building and other support functions favoured by the council.

The overwhelming policy issue involved in the development of the Yukon was the matter of mining lands and water rights concessions to large outside organizations. As noted earlier, these were interested in using large-scale, capital-intensive dredging, and hydraulic mining techniques to work the placer deposits once the initial pockets of high value gravel had been worked out by hand methods. The local mining interests in the Yukon, supported by the territorial council, vigorously opposed such schemes. The federal government tended to favour them. One such concession, the Treadgold, awarded by the federal authorities to an English consortium, was the major political issue in the territory from 1901 to 1904 and the cause of continued bitterness.¹³⁹ In 1906 the federal government nevertheless enacted a Placer Mining Act for the Yukon which encouraged such developments. The old Treadgold concessions were subsequently taken over by the Yukon Gold Company, a branch of the Guggenheim financial empire in the U.S. The legislation was further amended in 1920 to permit even larger concessions. The greater efficiency of such organization was evident, particularly as it permitted the integration of investments in roads, reservoirs, pumping stations, pipelines, power plants, and electrical distribution systems in the mining region.¹⁴⁰ Concentration of control continued and in 1929 the Yukon Consolidated Gold Corporation was formed to take over virtually all the major operations in the Yukon placer mining industry.¹⁴¹

In the northern districts still under direct federal jurisdiction, there was little change in federal policies relating to economic development until the early 1920s. The Northwest Territories Amendment Act of 1905 had established a commissioner and council form of administration for these districts. In practice, however, the area was administered by the police. The council was not in fact appointed until 1921 when it was enlarged from four to six members and the deputy minister of the Department of the Interior was made commissioner. The active work of administration was entrusted to a branch of the federal Department of the Interior. Several local offices were established in Mackenzie District in the early 1920s.

The immediate cause of this expansion of government in the area was the oil discoveries at Norman which set off a flurry of expectations concerning the economic potential of the area. In fact these expectations were premature and it proved unnecessary for the federal government to further develop the administrative arrangements made in 1921 for another 30 years. The police, fur traders, and missionaries continued to dominate the life of the territories. The council's legislation after 1921 was limited to the routine housekeeping chores of government, with federal officers carrying out virtually all the actual field work. When mining activity began in Mackenzie District in the late 1930s, the developments necessitated new policies. In particular the influx of workers created new local demands for transportation, urban services, and other modern amenities which were not expected by the old "fur trade, missionary, and police" society. Some progress was made in providing limited forms of local government in centres such as Yellowknife before World War II to facilitate the administration of such facilities, but changes in circumstances, including changes in national public policies during the 1940s, meant that the most important developments of this kind were not to come until after the war.

It is widely understood in the literature on economic development that establishment of stable government is a necessary precondition to modern industrial growth. The system of government developed in the northern districts under federal jurisdition before World War II provided this. Its emphasis was on preserving stability, which in practice meant preserving what remained of the fur trade economy, minimizing conflicts between the native and the white population, and assisting religious organizations to provide a minimum level of education, health, and welfare services in the area. There is no evidence of a desire to promote modern industrial development. To the extent that there was a policy in this regard, it was a policy of controlling any developments which did occur. In practice this meant regulating mining and other resource industries. As in the Yukon, such regulation favoured development by large organizations. The oil regulations established in 1921, for example, were denounced in the House of Commons as being so restrictive as to "unduly protect large interests by allowing the same to take full possession of the oil fields of the Territories . . .", a charge which the government did not undertake to refute.¹⁴²

One other aspect of federal policy in the north before World War II was the establishing of Canada's claims in the high arctic. While this was not directly related to the economic development of the area *per se*, the federal government did show its presence in the far north by supporting scientific explorations and by enforcing restrictions on the use of wildlife, especially by whalers and other non-residents. This meant sending in the federal police force. In 1903 small detachments were located at Fort McPherson and Herschel Island in the west, and several years later on Hudson Bay.

In the subarctic regions of western Canada where the federal government continued to control the natural resource base even after the provinces of Manitoba, Saskatchewan, and Alberta were formed, the government's main development activities were investments in transportation facilities. This included provision of navigational aids and some improvements to waterways, airfields and, above all, railways. Most of the facilities, including all the railway projects, were built to assist agricultural settlements. None of these were designed to help develop the north. Even the Hudson Bay Railway to Churchill was built to serve the interests of prairie farmers.

Prior to World War II Labrador was officially administered by the colony of Newfoundland, although there had been a long history of disputes over fishing rights and property along the coast dating back to the 18th century. In 1763 Labrador was annexed to Newfoundland, transferred to Canada in 1774 and re-annexed to Newfoundland in 1809. In 1825 the re-annexation was confirmed, although the St. Lawrence coast, Anticosti, and the Magdalen Islands were given to Lower Canada.¹⁴³ The boundary with Quebec remains a matter of dispute.

There were few positive development policies in Labrador, perhaps due to Newfoundland's impoverished economy. Apart from regulation of the fishery and the collection of customs duties, the colony's policies toward Labrador were an almost pure manifestation of laissez-faire. The Hudson's Bay Company and the Moravian missionaries managed the fur trade. There was otherwise no local government in the area. Such health, education, and welfare services as were available were entirely supplied by the missionaries and by the International Grenfell Association, a voluntary association established at the turn of the century to provide medical and educational services to the people of the coastal area of Labrador and northern parts of the island.

Provincial

While the federal government was preoccupied with establishing develop-

ment from east to west across the continent, the main efforts toward promoting development from south to north in the years before World War II were made by the provincial governments. Unlike B.C., Ontario and Quebec had to wrest much of their northern hinterland away from the federal authority, a process which was not complete until 1912. In the same year New Manitoba was placed under the jurisdiction of the provincial government in Winnipeg. Although Saskatchewan and Manitoba had their present northern boundaries from the time of their establishment as provinces in 1905, the natural resources upon which the development potential of these lands depended remained under federal control until 1929.

Development policy in Quebec after Confederation had two main purposes: one, to provide support and encouragement to private firms willing to undertake mining, forestry, and hydroelectric ventures in the province; the other, to encourage by means of cheap land grants, subsidies, and other inducements, the establishment of agricultural settlements in the marginal lands on the southern fringes of the north. "An aggressive settlement programme, pursued first by nationalistic colonisation societies and the Roman Catholic Church, and later by the provincial government, resulted in a further outward expansion of the ecumene into the clay basins of Lake St. John and Temiskaming, [and] into the badly drained wastes of the climatically marginal Abitibi area."¹⁴⁴

As noted earlier, the advance of forestry into northern Ontario and Quebec in the 19th century had been checked by the topography of the region. When the river sources in the Laurentian highlands were approached many sharp falls over the rocky escarpments of the shield were encountered. It was not until the new technologies and markets for pulp and paper making and hydroelectric power generation were developed around the turn of the century that these disadvantages of the shield became advantages and permitted the development of a new type of forest industry there, one that also happened to be more compatible with agricultural settlement.

The acceptance of forestry as worthy of greater public support was indicated by the recommendations of the 1903 colonization commission which favoured improvements to forest protection measures and stricter curbs on abuse of timber rights by settlers.

Mining did not become an important industry in northern Quebec until the 20th century, although because of developments in the south, a General Mining Act was passed in 1880 and a provincial mining engineer was appointed.¹⁴⁵

The main instruments used by the Quebec government to promote the pulp and paper and later the mineral industries of its northern regions were the granting of property rights to hydroelectric power developers at extremely low prices, land grant to private railway companies building in the north, and assistance with road construction in areas where development was taking place.

Quebec policy with respect to water power resources initially was to sell hydroelectric sites at going land prices, which were generally extremely low. After 1884 they were sold separately, but still cheaply. Zaslow notes that even as late as 1899 major sites such as Grand' Mere and Shipshaw were sold for as little as \$5 000 and \$10 000 respectively.146

During the period of railway-building mania around 1900, the Quebec government, often in co-operation with the federal government, granted land and cash to railway companies to encourage them to build new lines. The railway project responsible for opening up much of northern Quebec was the federal government's National Transcontinental which made possible settlement and expansion of the forest industries in the upper St. Maurice valley and the Abitibi district during 1900–20. The provincial government made grants to railways running up the valleys of the Gatineau, Ottawa, North, and St. Maurice rivers.¹⁴⁷

During the inter-war period, Quebec policies continued to favour agricultural settlement on the northern fringes of the ecumene and to promote expansion of the pulp and paper companies into the northern forest. In its efforts to promote this expansion in the 1920s Quebec competed, particularly with Ontario, to attract U.S. capital. The province's policies led to an over-expansion of the industry, which was evident by 1926. The subsequent cut backs created serious social problems, particularly in the marginal areas of the north.

Ontario's provincial development policies after Confederation differed somewhat in their objectives from those of Quebec, but utilized similar instruments. While Quebec policy favoured settlement of the marginal shield regions so as to establish a French culture based on an agricultural economy, Ontario's policies were oriented to the establishment of commercial agriculture and the promotion of mining and forestry. Ontario used similar instruments of development policy: cheap property rights, support for railway and road projects, and assistance to private mining and forestry companies requiring electric power. An unusual feature of the Ontario government's approach, however, was its willingness to use public enterprise to organize and supply transportation and power to private users. The basic instances of this were the provincial government's undertaking of the Timiskaming and Northern Ontario Railroad and the creation of Ontario Hydro.

Ontario's lands policies go back to the colonial days when its southern pine forests and later its agricultural lands were the principal resources. The concept of Crown lands was initially introduced to restrict the use of timber for ship construction. It was not until the 1820s that permits could be obtained to cut timber for other uses, although in practice these restrictions and the collection of stumpage dues were seldom successfully enforced. The competition between settlers and land speculators who wanted to clear land and the colonial officials charged with obtaining revenues from forest operations led to a series of legislative enactments in the 1830s and 1840s which were designed to regularize the use of land for these different purposes. Nevertheless, the pressures to promote settlement of virgin lands was so great that settlers were encouraged to move into a number of marginal areas, such as the Ottawa - Huron tract between the Ottawa River and Lake Simcoe, which proved to be unsuited to agriculture. The colonial government and after 1867 the provincial government promoted such settlement by surveying what were believed to be suitable tracts of land and by building access roads into them.

In 1900 the provincial government dispatched 10 survey teams to

explore the northern parts of the districts of Nippissing, Algoma, Rainy River, and Thunder Bay. Their work resulted in discovery of approximately 40 000 km² of arable land, the "Clay belt." In 1912 a Northern Development Branch was established within the Crown Lands Department to administer the new Development Act of 1912. (In 1926 the Northern Development Branch became a separate department.) A soldiers' settlement scheme set up to benefit veterans of the Boer War, subsequently greatly expanded as a consequence of World War I, was a major incentive to settlement of the Clay Belt. Construction of the National Transcontinental from Cochrane to Hearst just before World War I facilitated this settlement program, as did the Timiskaming and Northern Ontario railroad. The Cobalt and subsequent mining developments along the latter's route obscured its intended function.¹⁴⁸ Both these railways were assisted by government land grants.

Perhaps the province's most concentrated effort at northern settlement was the Kapuskasing Colony. Prospective settlers were carefully screened, for earlier experience showed that great tenacity was required of pioneers in these regions. Contiguous lots were allocated to promote community life: costs of transportation to the site, cash grants toward house construction, and loans for tools and livestock were all provided. By 1920 over 100 veterans had been settled in the colony, but there were so many complaints about conditions that a commission of inquiry recommended that the colony be disbanded and the area thrown open for general settlement. Part of the land was sold to the Spruce Falls Company which was awarded large timber concessions in the area. The company built a pulp and paper mill and established the town of Kapuskasing.¹⁴⁹

Further attempts were made to establish settlers in the Clay Belt in the late 1920s and again during the depression of the 1930s, but with little success. Much of the population that remained in the area did so because of employment opportunities in the forest or mining industries, although some dairying and vegetable crop production proved to be viable. By the beginning of World War II the Ontario government had withdrawn from the colonization business.¹⁵⁰

The significance of this attempt to promote a type of development in the north based on southern development experience lay in its demonstration that small-scale enterprise – in this case farming – could not succeed in the north, even when supported by a fairly active program of public subsidization. By the late 1930s both the Quebec and Ontario governments had learned this lesson; although in Quebec the Department of Colonization was not disbanded until the early 1960s, leaving, as one writer notes, "a sorry legacy of marginal farms, derelict villages, and culturally and economically deprived populations scattered along the extreme outward limits of the ecumene from Abitibi in the west to the Gaspé highlands in the east."¹⁵¹ The only industries which were commercially viable in the area were the mining and pulp and paper industries. Even they required support in the form of concessions of rights to the use of large tracts of Crown lands.

When the 1905 election in Ontario brought into office an administration committed to developing "New Ontario," extensive stands of pulpwood were known to exist north of the height of land. However, the

mills in the south were experiencing such financial difficulties at the time that further development of new regions was delayed. In the 1905 election campaign the Liberal government had been severely criticized for its "lenient" forest policies. It had granted concessions without public competitions and, in general, had been too lenient with the pulp companies.¹⁵² After the election the Conservative government revised the method of selling concessions so as to emphasize public competition, but the reforms instituted were soon made ineffectual by weak administration. There was evidence of massive circumvention of forestry regulations by private lumbering and mining interests who even succeeded in cutting pulp logs and exporting them to U.S. mills in defiance of the ban imposed in 1900 on the export of pulpwood from Crown lands. By staking mineral claims, it was possible to secure timber cutting rights exempt from the ban. By the time these abuses were brought to light, supply conditions in the U.S. had changed and U.S. firms became interested in building new pulp and paper mills in Canada.

The ability of speculators and promoters to influence the uses of Crown timber lands by manipulating provincial politicians remained a source of disillusionment to the growing body of conservationists and would-be reformers. Even the United Farmers' reform government elected in 1919 was vulnerable to the machinations of such promoters as the Minneapolis timberman, E. W. Bachus, who, at one stage in his career, was president of 13 corporations, including four pulpmills in Ontario, and the holder of six pulp concessions from the provincial government.¹⁵³ The standard device used by promoters of pulp and paper projects in the 1920s was to obtain large pulpwood concessions from the government on the basis of which they then sought to raise the capital needed to finance a mill. In return for the "concessions" they agreed to certain requirements concerning timing of mill construction, size of mill, number of jobs to be created, and so on. The government typically was indulgent when the promoters had difficulty meeting these commitments on schedule because they were in fact still in the process of raising the funds required. Lambert cites Premier Ferguson's reassurances to one firm on this point in 1926:

"What the Crown expects is a reasonable compliance with the covenants and obligations; and it is always ready and willing to give consideration to difficulties that may arise to prevent the strict observance of the letter of the Contract . . . We are in a way the latest shareholders (in your company), because we contributed the power and timber at a very reasonable price, that will undoubtedly enable your organization to flourish."¹⁵⁴

This general approach, whatever complaints could be made about it, did permit the rapid expansion of the pulp and paper industry into northern Ontario in the 1920s. The industry became a major source of employment, particularly for the distressed settlers of the Clay Belt.

Unfortunately the excess capacity created in the pulp and paper industry in Ontario and Quebec, combined subsequently with the effects of the depression in the 1930s, led to widespread mill closures. In an attempt to sustain employment, provincial governments made even fewer financial demands on forest-using firms, while enacting legislation which gave itself more power to influence working conditions, to regulate prices settlers obtained for logs, to remove control of leases from firms which were unable (or unwilling) to work them, and to transfer them to firms which could.¹⁵⁵ In 1934 the prohibition on export of pulpwood logs from Crown lands was, in effect, removed.

Widespread dissatisfaction with what many saw as a reversal of a trend toward more effective forest management policies culminated in the establishment of a select committee of the Ontario legislature in 1939 to investigate the activities of the Department of Lands and Forests. The department's problems arose in part from an inherent policy conflict. As Smithies has noted: "The Department was faced with administering two major programs. It disposed of land cheaply or by free grant and it attempted to raise maximum revenues from timber and mineral rights. The basic incompatibility made policy confusing to administer."¹⁵⁶ The incompatibility of policy objectives persisted as a conflict between the use of resources as a source of government revenues and as a means of promoting employment and economic development.¹⁵⁷

Mining policy in Ontario before World War II was less controversial than forestry policies. In 1891 a Bureau of Mines was established to take over the administration of mining claims from the old Crown Lands Department. With the development of Sudbury and the Cobalt camp, mining policy assumed much greater importance and a separate Department of Mines was established in 1919. Neither the Sudbury nor the Cobalt development was a result of mineral resource policies. Rather, mineral policy was largely devised after the event, the initial developments being accidental consequences of railway construction to speed agricultural settlement. Subsequent provincial policies toward mining were, however, supportive: the apparent objective was to raise revenue without discouraging private investment. As Innis noted, "Exploitation of virgin resources in mining, as in lumbering, tends to involve political manipulation."158 In Ontario such manipulation took the form mainly of inducing mining companies to process ores in the province prior to export. The case in which this issue was brought to a head was that of the International Nickel Company which, after years of resistance, finally yielded to government pressure in 1918 and agreed to build a nickel refinery.¹⁵⁹ Thereafter regulations in the Ontario Mining Act covering all minerals except iron ore specified the amount of processing which had to be done before export.¹⁶⁰

Ontario's tax and royalty rates were generally adapted to the profitability of particular types of mining ventures rather than being used to determine their viability.¹⁶¹ The extent to which there was indirect subsidization of the mining industry in its early stages cannot be identified due to the absence of adequate work on the economic history of the province to date, although some general inferences may be drawn from the work of Nelles on this point.¹⁶²

Ontario's early entry into the field of public ownership of electric power generating and distribution systems and a northern railway system also provided instruments by which expansionary policies could be promoted. Ontario Hydro, organized in 1905, was able not only to construct facilities which were not commercially feasible, but also to spread the costs of new facilities over users throughout the province.

Ontario government policy before World War II toward the tradi-

tional trapping, hunting, and fishing economy of its northern areas was concerned with stabilization. (Administration of the fisheries had been taken over by the federal government at Confederation.) In part, these policies affecting the traditional economy of northern Ontario were incidental to the province's general concern with wildlife management which grew up as part of the North American conservation movement of the early 20th century. Algonquin and Rondeau parks were set up in 1893 and 1894 and Ontario was a major supporter of the Canadian Conservation Commission during its lifetime from 1909 to 1921. However, despite this evidence of interest in long-term renewable resource management, even existing legislation to conserve wildlife and other natural resources was not strongly enforced. Although the Commission on Conservation commanded respect for its research and planning initiatives, even it had little effect on resource use. Noting that "provincial governments of that era were not inclined to expend funds on projects that did not yield direct economic benefit or provide revenue," Smithies concludes that the Conservation movement was ineffective because "natural science and conservation research were not seen (by government) as contributing to economic growth."163

The commercial significance of the wildlife resources of the province in the 20th century was shifting, of course, from the fur trade to the attractiveness of such resources to vacationers and tourists. So far as the commercial fur trade remained significant in the province at all, it was as a source of income for the native population of northern Ontario. The welfare of the Indians was, however, mainly a federal responsibility and, while the province made some effort to cooperate with federal Indian policies, there is no evidence to suggest that the welfare of native northerners was a serious concern of most provincial governments before World War II. The new agricultural settlers, and the northern populations based on pulp and paper and mining developments were, on the other hand, very much a matter of concern to the Ontario government. As the north became settled, Zaslow notes,

"Its people began insisting that their region's views be taken into account – for example by calling for the government to adopt the principle of re-investing half the revenues derived from their district in its development. Since the section now returned a dozen members to the provincial legislature, it was sedulously courted by the two evenly balanced provincial parties. Even in Parliament, with six federal representatives, its voice was not to be ignored."¹⁶⁴ But this was the voice of the new industrial sector, not of the traditional society.

In 1909, the Kelly Evans Commission reported that the expansion of population in the north and the greater accessibility of formerly remote areas had led to serious depletion of fur-bearing species. Closed season for beaver and other valuable species were initiated, but enforcement proved difficult. After World War I rising fur prices aggravated the problem and the Game and Fish Department inaugrated a system of licensing and recording the fur catch to control the trade. A number of Crown game preserves were established in the north during the 1920s in a further effort to save the beaver, marten, fisher, and other endangered species from extinction. Little more was done until after World War II, when a system of registered traplines was introduced.¹⁶⁵

Ontario's northern policies have been examined here at some length, not only because of the size and relative importance of Ontario's share of the provincial north, but because a number of Ontario's policies were widely copied in the western provinces.¹⁶⁶

The initiative in developing the natural resources of the Prairie Provinces before World War II lay more with the federal government than with the provinces. The resources of Manitoba, Saskatchewan, and Alberta were reserved to the federal authority, which aimed to establish the wheat economy of the interior plains. The principal instrument of federal development policy in the west was railway construction. Between completion of the CPR in the 1880s and World War I, a second trunk line was built across the more northerly plains region and an elaborate network of branch lines established throughout the productive agricultural areas in between.

Provincial policies were almost exclusively related to the problems of grain producers and the needs of the subsidiary commercial interests who depended on them. There was little interest in the northern parts of the provinces except as possible farmland. Any policies which affected the north were incidental to this general purpose of aiding grain producers. Thus the federal government's decision to construct the Hudson Bay Railway and, to promote railways into the Peace River country and to waterways at the head of the Mackenzie River system, was made at the urging of grain growers and not as an attempt to develop the north.

Only in Manitoba is there evidence of deliberate provincial support for the expansion of industrial activity into the northern regions, in the form of public spending on railway branches to service the mining developments. For example, in 1926 the provincial government underwrote the cost of railway extensions from The Pas to Flin Flon.¹⁶⁷ The Pas itself was given some importance by becoming the provincial government's administrative centre for "New Manitoba," but this administration was primarily a matter of enforcing wildlife regulation and regulating the sawmilling and other small-scale private forestry operations which were developing.

In Saskatchewan, apart from the Flin Flon development, the gold mining camp on Lake Athabaska in the late 1930s, and some commercial fishing activity, there were few developments requiring provincial government attention before World War II.

Even after the transfer of resources to provincial control in 1930, there was no major change in provincial policies toward the north either in Saskatchewan or in Manitoba. In Manitoba, as Jackson writes,

"The transfer was not immediately followed by a massive assault on the riches that were locked in the Canadian Shield. Indeed, such efforts as had already been started were now coming to a stop."¹⁶⁸ "The assumption of control over resources by the provincial government in 1930 did not result in the application of new policies and goals for the north, nor in any new concepts relating to the potential of northern resources . . . Clearly, at that time, the vast agricultural resources of the south were considered more significant than the natural resources of the north."¹⁶⁹ The situation in Alberta was somewhat different due to both geographical and political circumstances. Northwestern Alberta consisted of large tracts of agricultural land widely considered to be suitable for agricultural settlement, while northeastern Alberta possessed suspected oil resources in the tar sands area. Also, between 1900 and 1920, northern Alberta was a source of strong support for the Liberal party. The provincial government catered to the northern districts of Alberta due to their disproportionate representation in the legislature. "These arrangements helped ensure Liberal control of the provincial administration until 1921, and gave those governments a concrete incentive to promote the needs of Edmonton and the north, among which aids to regional development took first place."¹⁷⁰

Railways into the north were the prime instruments of provincial policy prior to 1929. In part, the enthusiasm of Albertan governments for northern extensions of the rail system can be explained by their fear, unfounded as things turned out, that B.C., or even Saskatchewan, might build railways north to tap the trade of northern Alberta and the territories north of 60°. In fact, both provinces were making moves in this direction: the Saskatchewan government guaranteed bonds for the construction of a branch of the Canadian Northern from North Battleford to Athabaska Landing, but it was never completed. In 1912 the B.C. government provided financial backing for the Pacific Great Eastern (PGE) to build to Prince George and subsequently beyond into the Peace River country. The project collapsed, however, and in 1918 the PGE had to be taken over by the provincial government before it reached even Prince George.¹⁷¹

The Alberta government entered into this railway-building competition with vigor and granted financial guarantees to a number of companies interested in building branch lines into the north. Three related companies eventually did build into and to the east of the Peace River country: the Edmonton, Dunvegan, and British Columbia railroad was built from Edmonton northwestward to Pouce Coupé in B.C.; from a point on this line near Edmonton, the Alberta Great Waterways line was built northeasterly for some 483 km to reach Waterways, where it ended, in 1921; the Central Canada railway was built from McLennan to Peace River and on to Fairview in 1928. None proved to be commercially viable and all were taken over by the provincial government which sold them, in 1929, to the CPR and CNR. They were subsequently operated under the name of Northern Alberta Railways.¹⁷²

Because of the world depression of the 1930s and its particularly disastrous coincidence with drought in western Canada, it is difficult to assess the contribution these provincial railway ventures made to the economy of northern Canada. Certainly they were *commercial* disasters. They over-extended the agricultural frontiers of western Canada. To the extent they encouraged further marginal settlement during the "back to the land" movement of the 1930s they were probably counterproductive, both economically and socially. As for their effects on mining, forestry, or the traditional economy of the north, the railways may have facilitated, but can hardly be credited with "causing", development. The railroad projects made sense politically at least in the short run, for the administrations which initiated them.¹⁷³ But the difficulties associated

with them in the 1920s and 1930s were such as to discourage any further ventures of this kind for some 30 years. It was not until the 1960s that B.C. and Alberta began to complete the schemes first dreamed in the early years of the century.

Policy toward the traditional economy of the north was little different in western Canada than in Ontario and Quebec during the pre-World War II years. During the inter-war period, all the western provinces instituted measures to conserve and to rehabilitate fur-bearing species. Several provinces also experimented with fur-marketing schemes to assist trappers and fur farmers to stabilize their earnings. But while such measures helped stabilize, they did little to change, the traditional economy and society of the north. In northern Manitoba:

"The Hudson's Bay Company store still flourished in the wilderness, and its employees still served as local arbiters, as had the company's officers in the past. Scientific methods of conservation led to more efficient taking of fur – particularly muskrat – by the allotment of what amounted to fur farms at Netley, Delta, The Pas, and elsewhere. Furs emanating from these farms were marketed in the trapper's interest by the government of the province."¹⁷⁴

In Saskatchewan the situation was much the same:

"Prior to the second World War, the basic way of life for most northern Saskatchewan natives had changed little since the first arrivals of European traders. The population pattern was still based upon seasonal movement from trading post to hunting ground and back again. Despite the introduction of the powers and controls of first, the church and then the provincial government, and some competition by "free traders," native people were still dominated by a patron client relationship set up by trading companies and the Hudson's Bay Company in particular."¹⁷⁵

The traditional native economy of the north, as a whole, was little touched by policy before World War II.

The Impact of World War II on Canadian Northern Development Policy

The events of World War II which directly involved the Canadian north, combined with the general social and economic changes in Canada and abroad which followed from the war and the preceding depression, transformed Canadian northern development policy. Instead of following and supporting private investments in directly productive activities, public investment policy became more aggressive, occasionally even attempting to lead such private investment. While public policy toward business enterprise in the north continued to favour large-scale enterprise, a tendency to supplement private monopoly organization with public monopoly became increasingly evident, as did public investment in joint business-government enterprises and public promotion of cooperative enterprises. The dividing line between the "public" and "private" sectors of the northern export-base economy became more and more difficult to define. In the case of the important new military "industry" in the north, the practice of contracting out to private firms not only the construction of military installations, but their maintenance

and staffing as well, contributed to the blurring of a once clear distinction, as, eventually, did the conversion of some defence facilities to commercial civilian uses at the end of the war.

At the most superficial level the main impact of World War II on the development of the north seems to lie in the contribution made by the large military-induced transportation projects: the Alaska highway, the airfields built for the northwest and northeast staging routes, the Canol pipeline, the improvements to the White Pass and Yukon Route railway and to the Mackenzie Waterway systems. While some of these may have had value for the subsequent long-term economic development of the north, their main direct economic effects were, at best, short term and, in a broad social benefit-cost view, may even have been negative.

The main impact of wartime activities carried on in the north was cultural rather than economic. And this cultural impact was felt not only in the north itself, but, more important from a development perspective, in the outside centres where control over the course of northern development continued to reside.

The cultural changes induced outside the north took the form of a new public awareness of the strategic and possibly economic value of the region; a perception on the part of some specialists of how effective existing technology could be in overcoming physical obstacles to resource development so long as the necessary scale of operation could be realized; and a recognition on the part of governments that the standard of living of many northern residents was unbelievably low.

Within the north, the wartime developments helped upset traditional social and economic relationships by at least temporarily creating new opportunities for wage employment, by bringing a new wave of transient population from the south, and through the effect improved communication systems had in exposing northern residents to the values, tastes, and preferences of the industrialized south.

Northern Development Policies since World War II

Public Investment in Social Overhead Capital: Transportation

The capital infrastructure associated with modern industrial society includes transportation and communications facilities; electrical power generating and distribution facilities; structures, such as schools, hospitals and other buildings used in the provision of public services; and water and sewage systems in urban areas. Most of this capital has been provided by public investment in Canada and the operation of such facilities had ordinarily remained a public function, carried on by public corporations rather than, as in the U.S., by regulated private utilities companies. These practices have been followed in the north and south, although governments have perhaps tended to be more conservative in their investment policies in the north. Certainly this was the case prior to World War II. Northerners still resent what they perceive as inadequate provision for these facilities in the north.

There are, of course, reasons for the reticence of public administrators to invest in capital facilities for the north: mining and forestry operations in the north are widely scattered and this makes provision of

facilities difficult to justify both economically, because of the scale and surplus capacity problems encountered, and politically, because of the likely charges of conferring extravagant benefits on specific private investors. The scale and surplus capacity problems arise from the geographic remoteness of productive enterprises in the north and the fact that even small-scale transportation and power facilities may be greatly in excess of the area's regirements. Furthermore, the life expectancy of mines and even pulp and paper mills can sometimes be shorter than the time required to amortize the railway, power station, or other facilities required, especially if the facility is made expensive by scale or geographic remoteness. Thus popularly-elected governments tend to err on the side of under-investing in such facilities. And when they have erred in the other direction, except for such notable cases of sheer luck as the Ontario government's Timiskaming and Northern Ontario Railroad project, the ensuing political recriminations have provided enough horror stories to invite more conservative practice in the future. Thus, it is not surprising that governments have often fallen back on an ideologically respectable laissez-faire position to avoid such commitments. The effect of this has been, of course, to reinforce the factors favouring large, and usually foreign-backed firms, over small, locally organized firms in developing our northern resources.

The reluctance of governments to build social overhead capital facilities ahead of or even parallel with demand, once the railway craze of the 1890s – 1920s had worn off, may have been modified by the experience gained from the construction projects carried out in the north during World War II. These once again demonstrated the possibilities of new construction technologies and the effectiveness of air transport as larger and larger payloads became technically possible. There is a strong similarity between the sensational (even while practically useless) engineering feats carried out for military purposes in northern Canada during World War II and many of the larger post-war commercial developments. All involved hurling a massive, highly capital-intensive, and technological assault against the problems of remoteness, cold, and economic backwardness of the area.

During the war years, the Alaska Highway, the Canol pipeline and the northwest staging route airfields demonstrated the power of North American technique and capital resources in the northwest. In the eastern regions there was the "Crimson Route" of air stations. During the "cold war," two strings of radar stations were built across the arctic and subarctic. All these projects shared certain characteristics: they were built without much regard for economic or other cost; the financial costs were borne largely by the U.S.; they had nothing to do with the needs or wishes of the residents of the areas they affected; and they created in the regions most immediately affected a short-term economic boom providing new sources of wage employment, overstraining existing transportation and other service facilities, and leaving in their wake a degree of social, environmental, and economic change unlike anything seen in the north since the Klondike gold rush.

Airpower was the keynote of World War II and most of the great wartime developments in northern Canada were related in one way or another to it. Air transport at the beginning of World War II still required extensive ground facilities all along major routes to provide refuelling and navigational points. Four routes were developed in northern Canada during the early war years. One was the route by way of Montreal or Mingan through Goose Bay, Labrador, to the United Kingdom via Greenland and Iceland. Goose Bay was hurriedly constructed in 1941 as a joint Canadian - U.S. - U.K. undertaking to provide an alternative to Gander, Newfoundland, which was frequently fogged in. Aircraft being ferried to the U.K. went from Gander to bases such as Narsarssuak near Julianehaab in southern Greenland.

A second flying route in the eastern north was from aircraft factories in the U.S. southwest, via Great Falls, Montana, The Pas, Churchill, Coral Harbour on Southampton Island, to Frobisher Bay. Aircraft built in the mid-west were to be fed into the system by way of Fort Chimo in northern Quebec, while those from the east coast factories were sent via Mingan on the St. Lawrence. The bases built along this "Crimson Route" were large and elaborately equipped. Lloyd implies that they had been designed and constructed with an eye to a future peacetime commercial use:

"To anyone accustomed to thinking of a trading post as the height of luxury in the Arctic, a visit to one of these northern air bases in wartime was a revelation of the changes made possible by aircraft. Those who planned and manned the stations seemed to have forgotten nothing that a well-run airport should have. The visitor gained the impression that these stations were not only stages on a wartime ferry route, but that they could be quickly converted after the war into stations on a civilian commercial air route."¹⁷⁶

In fact, they were little used, even during the war, being rendered obsolescent by increased aircraft flying ranges and improved navigational techniques. Some did continue to serve as useful weather and direction-finding stations and as emergency landing fields. The bases built in Canada were eventually taken over by the Canadian government at a cost of some \$30 million, although (writing in 1947) Lloyd could perceive, correctly it would seem, that "there is little likelihood that they will prove to be of anything approaching this value to northern flying."¹⁷⁷ Their acquisition did serve, however, to remove an element of U.S. ownership of what might have been considered strategic pieces of Canadian real estate.

In northwestern Canada a similar string of air bases, the Northwest Staging Route, was developed from Edmonton via Grande Prairie, Fort St. John, Fort Nelson, Watson Lake, and Whitehorse to Fairbanks, Alaska. The Canadian government had surveyed several fields in this chain before the war. U.S. military interest in the route led to its expansion in the early 1940s. The system proved useful as a means of carrying men and equipment to Alaska in the early years of the Japanese threat and, later in the war, for ferrying aircraft to the Soviet Union via Alaska and Siberia. The permanent installations built by the U.S. on this route were also purchased by the Canadian government at the end of the war and considerable use was subsequently made of the system by commercial aircraft.

The Alaska Highway was built in part to supply the airfields on the Northwest Staging Route and, in the process, provided the first overland link between the North American road network, the Yukon, and Alaska. The highway, over 2 400 km long, was built in little more than a year – admittedly to a very low standard – and was opened to military traffic in late 1943.¹⁷⁸

The fourth air route developed during the war was the Mackenzie Valley route from Edmonton to Norman Wells. Begun in 1942, a series of landing fields was built along this route to carry freight and troops, as the Mackenzie Waterway system was severely strained by the crash program to turn Norman Wells into a fuel-producing facility capable of meeting U.S. military needs in the northwest in the event that the Japanese should cut the Pacific coastal shipping system upon which the U.S. forces in Alaska depended. Although these fields were not used much during the war, weather stations and communication equipment along the route did make commercial flying into Yellowknife and other centres safer and more reliable. They also permitted use of larger, more economical aircraft right after the war.

The Canol project was one of the more sensational, if bizarre, military engineering exercises of the war. A cooperative undertaking by the Canadian and U.S. governments, the Canol project entailed enlargement of the Norman Wells field by Imperial Oil, construction of a 930-km pipeline and parallel service road through the mountainous wilderness between the Mackenzie River and Whitehorse, a refinery at Whitehorse, a product pipeline to Skagway, and storage and other facilities at Skagway and Prince Rupert. The project was completed by spring 1944, at a cost in excess of \$134 million.¹⁷⁹ By then the military situation had changed and the facilities were abandoned, except for the Whitehorse-Skagway pipeline which was utilized by a private firm to transport oil from tidewater to Whitehorse – an ample demonstration of the market forces applying in peacetime to many such local producing activities in the northern economy.

Construction of the Canol project and other wartime demands strained the existing transportation facilities in the northwest, particularly the Mackenzie Waterway. Several commercial firms competed in carrying freight by steamers and barges north along the nearly 3 900 km of rivers and lakes which comprise the Mackenzie system. Despite the short operating season, the trans-shipments required, uncertain traffic volumes, and the tendency to monopoly in similar situations elsewhere in the north, operations were organized competitively for many years. The principal private operators in the late 1930s were the Mackenzie River Transport Company, the Northern Transportation Company, and Hudson's Bay Transport. The latter was a subsidiary of the fur trading company, while the Northern Transportation Company was a subsidiary of Eldorado Gold Mines. When Eldorado was nationalized in 1944, Northern Transportation became a Crown corporation.

Through a somewhat involved set of policy positions taken by the federal government toward the Mackenzie Waterway, the Northern Transportation Company within a few years gained a monopoly position on the system, including the more than 1600 km of coastal shipping in the western arctic which the Waterway also supported. This was not a policy objective in itself, but happened because of the federal government's unwillingness to make the heavy investments required to

improve the river channel. Although some improvements were made at public expense, especially during the war, no attempt was made to eliminate the major impediments to navigation on the system. This meant that improved operating efficiency depended on investments in new types of floating equipment – mainly lightweight steel barges and powerful diesel tugs. The Northern Transportation Company began with some advantages over competitors in this respect and, with the new equipment acquired as the firm expanded at the end of the year, its competitors soon disappeared, leaving water transportation in the entire area to be provided by a public corporation – albeit one which operated on a strictly commercial basis so far as its pricing and financing practices were concerned.¹⁸⁰ After a short period of readjustment, traffic volume on the system grew rapidly in the post-war years due to renewed mining activity and the construction of the Distant Early Warning (DEW) Line of radar stations across the north in the 1950s.¹⁸¹

The problems of the upper part of the Mackenzie system in northern Alberta were to some extent alleviated by the Mackenzie highway, a primitive winter road, from Grimshaw, Alberta, to Great Slave Lake, which was built for military purposes in 1939. At the end of World War II it was improved to highway standards, the first large public expenditure on roads in the area and, in the 1950s, was extended around the western edge of Great Slave Lake to Yellowknife. The costs of the first 113 km of the road north from Grimshaw were borne by the Alberta government, of the next 375 km to the territorial boundary by the Alberta and federal governments jointly, and from there to Yellowknife by the federal government.

Although the Alaska highway and the original Mackenzie highway were "justified" as military undertakings, they became the main arteries of a road network in northwestern Canada. Much of this network springs from the federal government's northern development initiatives of the 1950s, policies which signalled a federal role in accelerating northern resource development.

In the early 1950s the federal government supported mining and other "resource" roads in the territories, often sharing costs with private firms, in accordance with practices in other parts of the country. In 1957, however, a new federal road policy was announced for Yukon Territory by which the federal government would finance the entire cost of certain "development" roads and pay 85 per cent of maintainance costs, the remaining 15 per cent being provided through the territorial administration. This policy was expanded in 1958 to the provinces and the NWT under the name of the "Roads to Resources" Program.

In the territories, this program provided several major extensions to the existing Alaska and Mackenzie highways, boldly striking off on routes based upon no specific economic function. The policy was severely criticized on these grounds, and also on the grounds that inadequate attention had been given to the cost-benefit ratios of alternative types of transportation facilities, especially airfields to handle large freighting aircraft.¹⁸² Nevertheless, the policy yielded a road network linking most major centres of central Yukon and provided a start on routes which may eventually connect the Yukon to the proposed Mackenzie Valley highway. In addition, supplementary roads were provided through the territorial governments' subsidization of temporary access roads to mines or other sites.¹⁸³ Winter roads continued to be utilized, often with some government support, but also on a private basis, a notable example being the 772 km winter toll road developed in 1970 by Western Electronics and Engineering along the Mackenzie between Fort Simpson and Fort Good Hope.¹⁸⁴

In several parts of the provincial north as well, surface transportation benefitted from the wartime construction projects, the DEW line project, and the federal development initiatives of the post-war years.

Northern B.C. benefitted particularly from the Alaska highway which provided the first real transportation artery within the Peace River region. In 1952 the John Hart highway was built from Dawson Creek to Prince George, providing the first east-west connection across the region. The Department of Highways was responsible for administering the provincial government's trunk road program in northern B.C. in the post-war years, although two other departments, Forestry and Mines, also had road-building functions under provincial legislation. In areas where small forest-using firms might be unable to construct roads for their own needs, the B.C. Forest Act authorized the Department of Forestry to construct roads as required to achieve "better, more orderly, or more economical harvesting of timber and forest products in the interests of sustained vield forests."185 By the mid-1960s some 185 km of all-weather road had been built north of the CNR line under these provisions. Similarly the Mines and Petroleum Resources Act, Section 15, authorizes the Department of Mines to build roads to facilitate exploration for mineral resources or to provide up to 50 per cent of the costs of a road needed to develop a mining property. Several hundred kilometres of oil development roads were built in the Peace River district under these arrangements, while other "mining" roads in the north of the province ran north of Fort St. James and included work on the important Stewart-Cassiar route completed in 1973.186

Maintenance of the portion of the Alaska highway in B.C. was turned over to the federal Department of Public Works in 1964, along with responsibility for the portions in Alberta and Yukon Territory. The most recent major highway development affecting northern B.C. is the 1 083 km Yellowhead route from Prince Rupert to the Alberta border completed in 1970.¹⁸⁷

The aggressive highway construction program in B.C. after World War II owed something to the federal governments' initiatives, but perhaps even more to the provincial government's own overall development strategy. Particularly after Social Credit came to power in 1952, extremely vigorous policies appeared, apparently designed to speed up resource exploitation in the hinterlands.

As elsewhere in northern Canada, resource exploitation in northern B.C. has become a large-scale activity. At the same time, the Social Credit government which ruled B.C. through most of the 1950s and 1960s, was committed to the ideals of small, competitive business enterprise. Given the fact that forestry and mining remained the principal sources of income for the electorate, it was nonetheless necessary for the government not only to tolerate but to support the large corporate enterprises which controlled these industries, even while simultaneously supporting the small local entrepreneur. Shearer suggests that whether consciously thought out or not, the Social Credit government's policies "provided an ingenious series of responses" to this political dilemma. "Very high on the list of difficulties facing the exploiters of natural resources are problems of access and transportation. Lower down on the list are problems associated with supplies and services. The government's answer has been a fantastic expansion of the communications system – highways, bridges, ferries, access roads, and the railway."¹⁸⁸

This system of physical communications did much to strengthen the links between Vancouver and the north, offsetting the strong pull, for example, that Edmonton had exerted on the area, particularly the northeast. It also facilitated the development of smaller service centres in the north itself, notably Prince George.¹⁸⁹ However, important as the new highways were to this change, an even more spectacular illustration of the expansionist policies of B.C. in the 1950s and 1960s was the revival of the old Pacific Great Eastern (PGE) Railway scheme.

Shortly after its election to office in 1952, the Social Credit government of W.A.C. Bennett took up the improvement and expansion of the PGE as its main development instrument for northern B.C. The transformation of this project from the dark days of 1918 when the then premier John Oliver referred to it as "this illegitimate offspring of two unnatural parents," a "waif left on my doorstep . . . conceived in the sin of political necessity . . . begotten in the iniquity of a half-million dollar campaign fund. . . . "190 to what Premier Bennett could refer to in 1964 as "this economic gem of our dynamic society,"191 is one of the north's greatest success stories. In part it was a consequence of the resources boom of the 1950s combined with the provincial government's willingness to gamble that, in this case at least, investments in carrying capacity would produce the traffic required to make these investments commercially justifiable. Even allowing for some peculiarities of bookkeeping, such as inadequate allowances for depreciation, this expectation has been borne out.192

From the time it was reluctantly taken over by the province, the PGE had consistently lost money. Its main problem arose from its failure to connect, in the south, with Vancouver and, at the north end, with a trunk line, the original intention of providing a southern terminus for the Grand Trunk Pacific having been frustrated by the absorption of the latter into the CNR system which already had a Pacific outlet at Prince Rupert. Thus, the PGE was left with only local traffic over a 602-km long strip between Quesnel and Squamish. Car barges and passenger ships were used to complete the 48-km connection between Squamish and Vancouver.

At the end of World War II the provincial government initiated a study of the possibility of extending the PGE to help promote "the development of the resources of the north country." This was clearly viewed as a joint federal-provincial undertaking, with the premier speculating that "It is quite possible that an arrangement could be made between the Canadian Pacific Railway, the Canadian National Railway, and the Provincial Government to complete and operate the Pacific Great Eastern Railway."¹⁹³ Between 1949 and 1952 a 129-km northern extension was built, with a small federal subsidy, from Quesnel to the

CNR at Prince George.¹⁹⁴ However, the federal government was uninterested in supporting the venture further, a position which led to bitter recriminations on the part of the new Social Credit administration when it came to office and decided to press on with the project on its own.

The inability throughout the 1950s and 1960s of the provincial and federal governments to agree on the development of the B.C. rail system in the northern part of that province – especially in view of its importance to transportation in the Yukon – is one of the most powerful illustrations of the absence of a *national* northern development policy in Canada and the consequent impossibility of rationalizing the allocation of public resources for such purposes.

The provinces' case for federal participation was summarized as follows in the provincial budget speech of 1955:

"There are many valid reasons for such participation. Major among these are the following: Railway transport has always been a main obligation on the Federal Government; the history of the Canadian National Railway and the fiscal commitments made by that Government with respect to other lines make this self-evident. Today's tax structure gives Canada the major revenue benefit accruing from economic development without imposing upon the National Government related obligations with respect to the conservation or development of natural resources. Other railway systems, but more particularly the National system, will benefit greatly by increased traffic arising from the northern extension."¹⁹⁵

Such representation received only what the premier called "polite attention", however, and the province went ahead using provincial funds to complete the connections between Squamish and North Vancouver, in 1956, and between Prince George and Chetwynd, from there forking to Dawson Creek and Fort St. John. During the 1960s the province constructed two extensions, one to Fort Nelson in the east and, in the west, another through Fort St. James toward Dease Lake. The 400-km line from Fort St. John to Fort Nelson was opened in September 1971. By then Premier Bennett was referring to his 1 770-km railway, subsequently renamed "British Columbia Railways (BCR)", as Canada's third largest railroad, and announcing plans to construct the 676-km western arm from Fort St. James to Dease Lake by 1974.

The success of the venture to this point seemed conspicuous enough, at least from a "development" standpoint. As the vice-president and general manager of the railroad noted in 1972: "It has always been the basic philosophy of the directors and the Government that the PGE was to be a development railroad serving the needs of the province, specifically that large area north of the CNR east-west route, which terminates at Prince Rupert."¹⁹⁶

Part of the railways' volume, which grew steadily from fewer than 16 000 carloads in 1952 to 120 000 in 1971, was attributable to freight from existing industries, notably Peace River farming traffic which had previously travelled via Edmonton, but much was the result of new productive enterprises, mainly forest industries, which it made feasible. Much of the boom in the central interior in the 1960s was related to the railway's progress through the area: sawmills at the "instant town" of Mackenzie, three major pulp mills at Prince George, a pulp mill at Quesnel.

The provincial government cited these effects repeatedly in its continuing appeal for federal assistance. Referring to "numerous precedents" of federal sharing in construction of developmental railroads, the premier repeatedly protested that: "The provincial railway has been most unfairly dealt with by the national government. . . . The solution lies in granting of the same construction, traffic, operational, and wage subsidies by the Government of Canada to the Pacific Great Eastern Railway as are received by the Canadian National and Canadian Pacific Railways to render the industry competitive in all areas."¹⁹⁷

This grievance was only a particular manifestation, of course, of B.C.'s almost traditional disaffection from Confederation. As E. R. Black put the general point in a lecture called "The Politics of Exploitation":

"The emphasis of the present government on economic matters rather than on, for example, services to people has been a characteristic of provincial politicians since British Columbia's earliest days. Federal relations with the province have always been marked by disputes over money and economic control and little else. From the beginning, British Columbians literally bought Confederation at a stated price, and in an explicit contract called the Terms of Union - and many would argue that British Columbians have not yet joined Canada emotionally. Within the province, elections are never fought over such matters as the development and promotion of cultural values, education, improving the lot of the poor, nor over the need for more effective forms of local government. The successful electoral issues have always been closely related to economic development. Separatist sentiments and movements in British Columbia date from the time of Confederation and almost invariably are manifested in assertions that the province would be better off economically as an independent, sovereign state. Few indeed have been the public figures who support the Canadian attachment in non-material terms."198

In terms of northern development policies this lack of harmony between B.C. and the federal authority creates a particular problem because of the close interrelationships between the development of northrn B.C. and the Yukon. While the province has on several occasions, most recently in 1964, offered to solve the problem by annexing the Yukon, neither the federal government nor the Yukon territorial government appear to have considered this a practical possibility.

The particular problem of co-ordinating transportation investment in the northwest became important in the early 1970s as the BCR began to approach the Yukon border. At the same time two further issues arose to complicate the situation. One was a regional planning study recommendation that the Dease Lake extension be re-routed to the west of the proposed route for about 240 km so as to pass through the mining area being developed just east of the Alaska panhandle.¹⁹⁹ It was expected that such a re-routing would tap the timber resources of the Nass and Iskut River valleys and the copper, silver, and lead-zinc deposits of the area.

The second, related, issue, was the development of a shipping

terminal for Sukunka coal from the Peace River area. As announced by the Bennett government, this terminal would be built at Squamish and the coal would be carried there by the BCR. Subsequently, however, the federal government indicated that it favoured moving the coal by way of the CNR to Prince Rupert. Strong opposition from environmental groups to the BCR-Squamish scheme led the BCR to shift its proposed coal port further down Howe Sound to Britannia Beach.²⁰⁰

In the event the BCR scheme was adopted, the shaky local economy of Prince Rupert could still be bolstered if the re-routing of the Dease Lake line could be made to feed its new traffic into Prince Rupert. This became a possibility when the federal government announced in 1973 that it had arrived at a preliminary agreement with BCR to build a CNR link between either Terrace or Hazelton and the re-routed BCR line further north and to give BCR running rights on the CN from Prince Rupert to Prince George, thereby integrating the two systems in the north. In 1973, the new NDP government suspended work on the Dease Lake line pending completion of studies of the route and further negotiations with the federal government. These negotiations were no less difficult than those in the past. In November of 1973, with the BCR suffering from strikes and a shortage of boxcars, Premier Barrett accused CNR and CPR of starving the BCR of cars "as some kind of warfare tactic."²⁰¹

In Alberta the main publicly-sponsored transportation developments since the war have been construction of the Great Slave Lake Railway from Grimshaw to Pine Point on the south shore of Great Slave Lake and, more recently, the Alberta Resources Railway along the foothills in the north central part of the province.

The Great Slave Lake Railway was built by the CNR as a federal development project designed to facilitate the lead-zinc operation of Consolidated Mining and Refining at Pine Point, and also to extend railway service into Mackenzie District, thereby supplementing the Mackenzie Waterway and the Mackenzie highway as freighting facilities. The railway was also expected to improve access to parts of northern Alberta and a Royal Commission in 1959 studied two alternative routes: one through the predominantly agricultural area of northern Alberta. the other through the mineralized northeastern region. The majority recommendation favoured the former and the line was eventually built over a 607-km route from Roma on the Northern Alberta Railway to Hav River on Great Slave Lake with an 89-km spur to the Pine Point mines. The project was completed in 1966. Most of the capital cost, under \$100 million, was borne by the federal government, with \$12,500,000 being provided by Pine Point Mines Limited, The project contributed to development in northern Alberta and Mackenzie District insofar as by 1970 the volume of freight attributed to developments other than the Pine Point operation equalled that produced by the mines.²⁰²

The second railway project in Alberta was launched early in 1965 when Premier Manning announced in the legislature that the government would spend up to \$40 million to link the Peace River area of northwestern Alberta to the main CNR line west of Edmonton, thereby reducing the rail haul from Peace River to the Pacific by some 800 km while at the same time opening up new mineral and forest resources for development.²⁰³ The railway was to be built and operated by the CNR with capital funding provided by the Alberta Resources Railway (ARR) Corporation. The CNR was given the right to purchase the railway at any time by repaying in full with interest the amount advanced by the corporation.

The purpose of the railway was stated in the 1967 provincial budget speech to be "to serve the undeveloped natural resources regions in northwestern Alberta."²⁰⁴ According to the agreement with the CNR, it was to be built in three stages: from Solomon on the main CNR line to Smoky River (178 km); from Smoky River to Wapiti River (192 km); from Wapiti River to Grande Prairie (8 km). Work began on the first section in 1967 and was completed to Grande Prairie by 1969.

Total cost of the railway was close to \$100 million. In asking the legislature to authorize this amount of borrowing in 1968, the minister expressed concern over "the magnitude of these costs," but indicated that the government was nevertheless convinced "that the opening up of the northwest portion of our Province through provision of transportation facilities is economically sound and will greatly benefit not only the people in that area, but also the Province as a whole."²⁰⁵ Justification was soon forthcoming. The major immediate development associated with the ARR was the McIntyre Porcupine coal mine at Smoky River which began shipping coal in 1970 to Japan via B.C.

The provincial government's post-war transportation investments in northern Alberta have also included roads and airstrips. Highways into the northern parts of the province were few in the early post-war years. The province built, in the 1950s, a major branch road from the Mackenzie highway to Fort Vermilion and several other roads "of low standard" into the area north of 55°. The federal government also built several roads in Wood Buffalo Park to serve sawmills. An Alberta Royal Commission set up to study the development of northern Alberta in the 1950s reported that lumber and oil companies had constructed various roads in the north. The Commission reported the government's policy in this regard:

"that in general such companies should build whatever roads they need to obtain access to stands of lumber or to promising oil fields. In this connection there is no rigidly defined policy and the decision as to whether or not the Government will contribute towards the cost of one of these roads depends on the circumstances in that particular case. Requests for government assistance for these roads are considered by an Advisory Committee and each road is weighed on its own merits. If the construction of such a road would serve people presently living adjacent to it who are paying taxes, then it is likely that the Government will assist by providing some money towards the cost of construction."²⁰⁶

The commission did not express dissatisfaction with these policies, but did suggest that public investment in transportation facilities in northern Alberta might be less than desirable from the overall provincial point of view because "the funds needed for the development of this vast, sparsely settled areas [sic] of 88 000 square miles, [142 000 km²] with its population of only 9 000 could easily be diverted into more immediately needed projects" and that this "could be detrimental to the Province as a whole."

To deal with this problem and the problem of co-ordinating government spending within the north itself, the commission proposed that a provincial northern development advisory board be established. Its hoped for benefits were illustrated by reference to road construction:

"To take roads, for instance, it would of course be wasteful to go building roads hither and yon all over the North Country but, on the other hand, before the country can develop it must become accessible. The proposed Northern Development Advisory Board might be in a position to advise on problems of this nature; and where a decision has to be made between spending funds for development of this vast area and spending them on the more vociferous populated areas which, in relation to similar areas in less fortunate provinces, are already well served, this board might be a voice tending to show the North in its proper perspective."²⁰⁷

Several years later, in 1963, the provincial government established the "Northern Alberta Development Council" to advise the government on the development of the province north of the 55th parallel. Boards of trade, chambers of commerce and community organizations strongly supported the council. Such groups provided information on requirements for northern development and evaluations of existing programs.

In 1965 the government provided the council with a budget of \$5 million to implement recommended projects, subsequently increased to \$21 million, to meet requirements until 1971 at which time the program was to be terminated. Almost all of this, as shown in the following table, was spent improving transportation facilities.²⁰⁸

Project	Amount
Airstrips and airports	\$ 1844774
Roads and bridges	18 129 395
Drainage and flood control	670 000
Domestic water and health improvements	500 000
Parks	369 000
Fish and wildlife	77 000
Surveys and research	135 000
Human resources projects	54 416
Total	\$21 779 585

Transportation investments in Saskatchewan since World War II have been limited to a relatively modest expansion of highways into the northern parts of the province. Unlike B.C. and Alberta, Saskatchewan has had no ambitions, or opportunities, to tap the regions lying to the north of its own boundaries. This may account for the absence of any trunk routes of the kind which traverse the northern portions of the provinces to the west. The only two mining areas in northern Saskatchewan, Flin Flon and Lake Athabaska, were situated on the east and west boundaries of the province and were both served by existing facilities – the Hudson Bay Railway and a Manitoba highway in the case of Flin

Flon and the Mackenzie Waterway in the case of Goldfields and Uranium City. In-between points were served by air transport, provided after 1946 by a provincial Crown corporation, Saskatchewan Government Airways, subsequently Saskair, which was in 1966 sold to a private firm, North Canada Air Limited. There was little road construction in northern Saskatchewan until the late 1950s when the Department of Natural Resources began building mining access roads. In 1957 approximately \$400 000 was allocated to the department to build an access road into the mineralized area north of Lac la Ronge and to extend the Buffalo Narrows Road in the northwest. Between 1946 and 1958 some 4 000 km of northern roads were built in the province.²⁰⁹ In the latter year the Minister of Finance announced a major expansion of this program to take advantage of the federal government's "Roads to Resources" cost-sharing proposals. In fact, provincial spending on northern mining roads subsequently declined.

In 1965 responsibility for major resource roads in northern Saskatchewan was transferred to the Department of Highways and the new Liberal administration announced several substantial new highway construction projects in the area. These included a \$725 000 road to provide access to the new Anglo-Rouyn mine, a \$1-million extension of Highway no. 2 to Reindeer Lake, a \$528 000 road to Cumberland House, and \$1 150 000 to complete the Island Falls highway.²¹⁰ The province built a winter road into the Wollaston Lake mineral area in the late 1960s, brought the road from Prince Albert to La Ronge up to modern standards, and constructed some timber access roads.

Manitoba's northern transportation situation since World War II has been more like that of the eastern provinces than its western neighbours in that a basic set of transport facilities was already established throughout its hinterland and the development problem was consequently more one of improving upon these facilities than of using public funds to create major new ones. Manitoba possessed a water transport system centered on Lake Winnipeg, the Hudson Bay Railway, provincial highways to The Pas and Flin Flon and a well developed northern air service. The major addition required by mining developments after the war was the extension of the railway to service the new Sherritt Gordon operations at Lynn Lake, a project backed by the federal government as being "a work in the national interest." Short spur lines have subsequently been built to other mining centres.

A study of northern Manitoba's development prospects commissioned by the Manitoba government in 1956 came to the conclusion that present and foreseeable transportation needs in the area did not warrant the construction of "extensive additional facilities" and that northern Mantoba's major transport need was "lower railway freight rates that would lead to the increased use of the present rail system rather than for new rail or road construction."²¹¹

In 1959, under the stimulus provided by the federal "Roads to Resources" program, Manitoba began to construct roads to connect northern communities, including Thompson, to the provincial highway system. When the federal program ended, the Manitoba government complained bitterly that its termination "struck a stinging blow at the development of northern Manitoba," charged that "federal policymakers have lost sight of the needs and challenges of new frontiers," and urged that the program be reinstated and "matched by other federal policies to make northern living more attractive and northern business profitable."²¹²

A provincial royal commission appointed in June 1967 to study northern transportation in Manitoba proposed, in August 1969, a number of new projects: construction of all-weather roads to Lynn Lake and Churchill, lower railway freights rates, and better airport facilities. Because one of the important factors in the defeat of the Weir government by the NDP in 1969 had been the protest vote of northern ridings²¹³ action on these recommendations was prompt. The budget speech of the following session referred to "one of the Government's special priorities - the challenge of the North." The government set up a legislative task force on the north and speeded up construction on the road to Lynn Lake as evidence of its good intentions.²¹⁴ By 1972 the government could announce what it described as "wholly new arrangements" in northern Manitoba, the beginning of a "fundamentally different way" of approaching problems in the north, and a reformed "logic of Northern development." The new approach included expenditures for northern roads and airstrip facilities as well as for schools "and other infrastructure improvements."215

Ontario's investments in northern transportation after World War II entailed mainly filling in gaps in the railway and trunk highway systems. The railway system in the north remained as it was before the war, with the main CNR line skirting the southern boundary of the Hudson Bay watershed, the Algoma Central running from Sault Ste. Marie to Hearst, and the Ontario Northland – the former Timiskaming and Northern Ontario – running from North Bay to Moosonee. The only other railway in the area was the privately-owned line of the Smoky Falls Pulp and Paper Company from Kapuskasing to Smoky Falls on the Mattagami River. In the early 1950s the main highways reaching northern Ontario were no. 67 from Timmins to Iroquois Falls, no. 11 from Kirkland Lake to Rouyn, Quebec, and no. 101 from Lake Abitibi to Matheson.

It has been said that for Ontario as a whole, the "overriding concern of provincial policy in the 1950s was economic growth." So far as public investments in transportation were conceived as instruments of a growth policy, the main focus in the north was on construction of mining access roads. During the 1950s there was still some commitment to building roads in the north to promote agricultural settlement. As Smithies notes:

"Old traditions die hard, and throughout the Fifties the desirability of settlement on the agricultural lands of the north still came up from time to time in official statements. Premier Frost's 1958 Budget Speech included a programme to improve access roads to the north which would "make possible the settlement of potentially valuable agricultural land." Viability of such a policy was again implied in the 1959 Speech, and not until the early 1960s did the idea apparently die away completely."²¹⁶

There was also a flurry of interest in the late 1950s in the possibility of constructing a major port at Moosonee, prompted largely by prospects of iron ore mining on the Belcher Islands and other mining along the east coast of Hudson Bay.²¹⁷ These plans did not materialize, however, and the only extensive public investments in new transportation facilities in the north were the mining access roads built, beginning in 1951, by the Department of Mines. The program was expanded and placed in the hands of an interdepartmental committee. The budget speech in 1960 reported that:

"While roads continued to be built for the benefit of the mining industry, allowance was also made for factors such as forestry development, forest-fire control and the opening of new agricultural and tourist areas. Almost all work undertaken in connection with this inter-department programme has been completed. By the end of 1959, approximately \$6 million had been spent on the construction of more than 500 miles [800 km] of new road. Of the 57 projects undertaken, 30 were financed entirely by the Province, while the costs of the others were shared by those companies which stood to benefit from this construction."²¹⁸

The program was expanded again in 1959 when Ontario joined in the "Roads to Resources" program, under which \$15 million was to be spent on northern Ontario by 1967. A major feature of the expanded roads program was an extensive aerial survey of a large part of northwestern Ontario:

"In order to obtain maximum benefit from the funds invested in this construction and to build the roads at the most suitable locations, an aerial geophysical survey is being carried out covering an area of 64 000 square miles [166 000 km²] situated north of the CNR from Nakina to the Manitoba boundary. This project is the largest of its kind in Canada and possibly in the world. Aerial photography of the area has already been completed and the results are being prepared for publication. The major portion of the cost is being borne by the Province with the Federal Government financing the remainder."²¹⁹

In addition to this program, timber and mining companies continued to build private access roads, in consideration of which the provincial government exempted the vehicles using these roads from gasoline taxes and licensing requirements.²²⁰

As a result of the road programs of the 1950s and 1960s, most communities in the "near north" of Ontario have been connected to the southern transportation network. The far northwest of Ontario continues to rely upon small aircraft for access. To date provincial policy has not placed a high priority on developing airstrips in this region, leaving it to municipalities to finance maintenance and 50 per cent of the capital costs of such facilities. In 1972 there were only seven air strips in the 518 000 km² of the province lying north of the CNR. This compared to almost 40 in northern Manitoba and more than 22 in Quebec, north of Quebec City.²²¹

Northeastern Ontario is somewhat better served: under the 1968 "Airport Act", the Ontario Department of Transport began a program of airstrip development in the northeast, the object of which was to create "an integrated air transportation network" to serve areas not reached by other transportation systems.²²² Quebec's investments in northern transportation facilities since the war have also focussed on road construction, although a number of airstrips were provided, particularly in the James Bay area to support the hydroelectric developments there. The major railway and waterway (St. Lawrence Seaway) projects needed to permit development of the Quebec-Labrador iron ore deposits were made by private enterprise and the federal government respectively. The Quebec government's policy with respect to such public developmental expenditures was generally "conservative" at the end of the war. In 1946 the Provincial treasurer stated in the legislature that:

"There is room in our economy for private industry, for cooperatives and, in certain cases, for State enterprises, and each of these categories of undertakings must be in a position to develop for the benefit of society. The classical doctrine of the State is to the effect that the State must exercise control over private enterprises but not substitute itself for such enterprises.

"I further believe that the State cannot reasonably launch into hazardous undertakings and invest considerable sums therein. The sums which the government receives from the taxpayers are obtained for the purpose of enabling the state to improve the services designed to ensure the good of the community, and not to make it possible for the state to launch into undertakings which do not come within its sphere of activity."²²³

During the following decade provincial spending on roads tended to follow rather than lead private development of mines, forestry operations, and other resource projects. The government built roads to connect the Chicoutimi region with Quebec City in the late 1940s and to link Matagami Lake in Western Abitibi to the provincial system in the late 1950s. The program of mining, and particularly forest, access roads expanded under the federal "Roads to Resources" program in the early 1960s. The Amos-Matagami highway was completed in 1963 "to connect the whole of the north-west of Quebec to our network of highways in the province."²²⁴

The more aggressive policy of building roads to spur development, particularly of forest areas, which the cost-sharing of the "Roads to Resources" agreements appeared to introduce was further promoted by a new interest in using road construction to encourage the tourist industry. In 1966 the provincial roads department was charged with providing camping grounds and picnic areas in recognition of the new importance of roads as recreational and tourist facilities.

In 1971 a new program was begun in northwestern Quebec, where long established mines were closing. This program provided almost \$2.5 million for roads into mining areas. Additional funds were also voted for a road from Matagami to Lac Chibinoche and the Manic V-Gagnon road. In the same year responsibility for such projects was transferred from the Department of Natural Resources to the Department of Roads.

Along the Labrador and eastern arctic coasts the principal postwar transportation improvements did not involve construction, except for federal assistance with some harbour improvements, so much as the organization of a regular coastal shipping service by the federal Department of Transport. Virtually all the heavy freight moved into these regions is carried by a fleet of chartered commercial vessels, accompanied by Canadian Coast Guard icebreakers, during the July to early October shipping season. The entire operation resembles a military rather than a commercial operation in that it is systematically organized and co-ordinated by the Marine Operations Branch of the federal Department of Transport – a modern form of monopoly control. Because the western arctic coastal service is also federally operated through the Northern Transportation Company's services based on the Mackenzie Waterway, the post-war development of marine transport in northern Canada has involved the effective nationalization of the entire system, not so much, it would seem, as a matter of policy, but as a conventional Canadian response to the problem of making reasonably efficient use of capital equipment to provide services to widely scattered centres of activity, some based on commercial, and others on public (including military), activities.

The sea-lift in the eastern arctic has been supplemented by expanded air services. Some of the large airfields constructed during the war proved useful for these purposes – notably Frobisher Bay – al-though most small centres there, as in the north of the other provinces, remained dependent on light aircraft capable of landing on skis or on primitive landing strips.

Public Investment in Social Overhead Capital: Electric Power

The tendency to substitute public for private monopoly in the provision of basic industrial facilities in the north is as clearly illustrated by the development of the electric power industry since the war as by the transportation developments just described. With some regional variations, the Ontario Hydro model was eventually accepted throughout Canada, even in the federally-controlled territories. Two aspects of this industry are important from a development standpoint: one is that because it provides a basic input to other industries the availability and price of electric power can be used as an instrument to encourage investment in these other industries, especially if they consume large amounts of power; the other is that modern long distance transmission technology permits the generation of electric power for export.

These two aspects of the industry might be thought to be complementary – but the experience of the Canadian north to date suggests that they are not. Just as improved transportation for goods has destroyed marginal northern agriculture, the new long-distance transmission technology for electric power has made it unnecessary to locate power-using industries close to the generating site. This only occurs when supply of raw material is located at the generating site, as is often the case with the pulp and paper industry, or when such raw material can be transported to the site as inexpensively as to anywhere else – as is the case with bauxite supplies delivered to sites near tidewater. Public policy could, therefore, seek to develop power production in the north as an export industry or as a means of attracting other industries. Historically, it has done both. Before the 1940s most provinces sought to promote industrialization by granting pulp and paper and mining companies water power concessions at low cost, sometimes by subsidizing the capital expenses of private firms wishing to develop hydroelectric sites, or, in the case of Ontario in particular, by developing large-scale hydro projects and distribution systems at public expense, to provide lower cost power than smaller private or public installations. Such policies undoubtedly contributed to the pre-World War II development of the forest and mining industries in northern Canada. The advantages of monopoly control of power production, whether private or public, were conspicuous enough to make it an issue only in isolated local situations where it was seen to be a means by which a large private firm producing power for its own use used the price of surplus power as a way of either taxing or acquiring control of other users in the area. Public monopoly offered some protection against such practices, but also raised equity issues relating to rate policies.

With the establishment of provincial power authorities in the postwar years the subsidization of northern consumers by southern consumers became an instrument of development policy across Canada.

The consequence of the more recent activities of provincial power authorities, the construction in the north of large-scale projects designed to export power to southern markets, are not difficult to assess. Shortrun benefits to the northern economy in the form of employment in construction have been offset by negative effects on the traditional economy. While the magnitude of the costs and benefits in any northern hydro-development create fearsome problems of social accounting, the power developed for export makes no net contribution to the development of the northern economy – its value to the North American economy is another matter and one which cannot be considered here.

The technology of the internal combustion engine promoted the development of mining, sawmilling, and other activities requiring portable motive power in remote areas after World War I. During World War II the diesel engine was widely used as a means of generating electrical energy. Since the war, diesel-electric units have become readily available in a variety of sizes ranging from those capable of serving efficiently a temporary campsite, to large multiple units. Because of the relatively low capital costs of such installations and their portability, there was little need for public investment in electric power facilities in situations where individual mining projects, for example, could operate with such equipment. Where a number of users were involved, of course, the usual case could be made for a public rather than a private utility operation. Thus, in the territorial north we find diesel-electric units being operated by a public corporation in the larger settlements.

Where total demand was high enough, thermal or hydraulic power generating stations continued to produce cheaper power than was possible with diesel units. The high overhead costs made public investment in such facilities more likely. But in the case of pulp and paper plants it was technically and economically quite feasible, as the pre-World War II experience demonstrated, for such facilities to be privately built and operated. Therefore, the choice between public or private provision of electrical energy in Canada has been a matter of policy rather than techniques or the "economics" of the industry.

Public control of electric power in Canada has been organized through public corporations rather than by regulating private utilities, as in the U.S. Since World War II public power corporations, more or less on the basis of the Ontario model, have taken over private producers. These provincial corporations have consequently become responsible for determining the availability and price of electric power to northern consumers and also, in most cases, for determining when and how northern water resources will be exploited to produce power for export to southern markets, rather than being preserved or developed for alternative uses.

Northern Ontario

The immediate post-war period in Ontario found a considerable number of private hydroelectric stations still operating in the province. In northwestern Ontario, by the late 1950s, there were 14 privately operated plants producing close to 70 000 kW, most of it from five plants belonging to the Ontario-Minnesota Pulp and Paper Company. Ontario Hydro, however, had by then acquired most of the generating capacity in the region. It operated 10 plants, ranging in size from 6 000 to 120 000 kW, and yielding a total of about 600 000 kW. Similarly in northeastern Ontario a number of old private hydro plants continued to operate, but the bulk of the capacity there was also in the hands of Ontario Hydro.

By the beginning of the 1960s, Ontario Hydro was providing more than 90 per cent of the electric power generated in the province and was the only producer engaged in building new capacity. The focus of its new construction was by then firmly on the hydro potential of the north, although the feasibility of meeting expected increases in demand from hydro sources was limited. The provincial budget speech in 1961 summarized the outlook:

"Forecasts indicate that by 1980, dependable peak capacity of all Commission resources will reach some 21.7 million kilowatts (29.1 million horsepower). It is expected that approximately 1.5 million kilowatts (2.0 million horsepower) of dependable hydraulic capacity will be developed chiefly at sites in the far north of the James Bay watershed, and that this development will be co-ordinated with the construction of thermal-electric stations both conventional and nuclear, so that by 1980 total capacity may be relatively evenly divided among resources – hydro, conventional thermal and nuclear."²²⁵

The market envisioned for such new capacity was clearly in the south. The long-term income and employment effects at the sites themselves could be inferred from the fact that three of the four new stations being planned in 1961 were to be remotely operated.

Northern Quebec

Quebec's early post-war policies respecting hydroelectric power development reflected the mixed-economy philosophy of the National Union party, a philosophy that accepted state intervention to preserve private enterprise. The National Union government consistently claimed that Quebec was one of the bastions of free enterprise in North America, while at the same time taking credit for public interventions in the province's economy which made it profitable for private business to operate there. Electric power was a prime example of this policy.

When the National Union government gained power in 1936 it established the "National Electricity Syndicate" for the purpose of providing "state competition" in the otherwise privately-owned electricity system. In a 1952 review of this measure, the provincial treasurer claimed that before then, "the mining companies of Abitibi and Témiscaming were crushed under the voke of the private companies which were working our hydraulic resources," "being required to sign contracts for the whole life of the mine at the extravagant price of \$55 per horsepower."226 The government proposed to reduce these costs. The National Union planned to retain ownership of natural resources. refusing to cede or sell them, and to develop water power resources as publicly-owned utilities. The first hydro project under this policy was on the upper Ottawa and supplied power to Val d'Or, Amos, Cadillac, and Malartic. In the late war years the province undertook several similar projects, for the most part to supply power to new mining communities, such as Senneterre. But at the same time, unlike the situation in Ontario, private power companies and major pulp and mineral processing firms also continued to provide new generating capacity. In the early 1950s, for example, while Hydro-Quebec (as the provincial corporation was by then known) was at work on two major projects, plants were also under construction on the St. Maurice by the Shawinigan Water and Power Company, on the Ottawa by the Northern Quebec Power Company, on the Lièvre by the Cie Electrique de Mont-Laurier, at three sites by the Quebec North Shore Paper Company, on the Shipshaw by Price Brothers, and on the Ste. Marguerite by the Gulf Paper and Power Company.

In 1955 Hydro-Quebec pushed transmission lines into the Chibougamau district to support mines there. In the same year the provincial treasurer could boast that next to Alberta, Quebec had the lowest electricity prices in Canada.

The emphasis in Quebec's hydroelectric development policies until the mid 1950s was on supplying power to established industries, including mines and forestry operations in the northern areas of the province, at rates which would encourage such activities. By the mid 1950s, however, a more expansionary development policy developed and Quebec became interested in transmitting power from large generating projects to the main industrial centres of the province and, eventually, even beyond its boundaries. In 1956 Quebec announced plans to develop sites in New Quebec. The Feuilles, Payne, Koksoak, Kaniapiskau, and Whale rivers were mentioned, while in the James Bay Basin it was reported "similar work is proceeding along the Nottaway, Rupert, Harricana and Big Rivers." At the time, the need for such planning was declared to be "to enable us to supply industrialists with the technical information they require to lay the groundwork for plants north of the St. Lawrence River."²²⁷

The early 1960s in Quebec brought a movement to concentrate ownership and control of the hydroelectric power industry and to coordinate the planning for all resource development projects. In April 1961, the former Department of Mines and the Department of Hydraulic Resources were joined together in a new Department of Natural Resources, a branch of which was assigned responsibility for "the preparation of studies and plans necessary for the full development of our resources. . . ." Hydro-Quebec was at the same time virtually the only body building new generating capacity in the province, its major new works being construction of a storage dam and several power plants on the Manicouagan River. In 1964 the government announced that henceforth policy in energy matters would come under Hydro-Quebec and that it alone would carry out new developments. Hydro-Quebec, would plan "a major role in the process of economic planning in Quebec."²²⁸

Initial planning for the James Bay area developments in the late 1960s indicated that massive financial resources would be required and that many public and private agencies would be involved. Whether Hydro-Quebec was adequate to co-ordinate such a project came into question, particularly since it had always met its capital expenditures through the use either of retained earnings or its own bond issues.

The provincial government's innovative solution to this problem was to establish in 1971 a new crown corporation, the James Bay Development Corporation (JBDC), whose task it would be, not only to oversee the proposed multi-billion dollar power development, but to develop all the natural resources of the James Bay watershed in Quebec – an area comprising perhaps 1/5 the total area of the province. According to the terms of the James Bay Region Development Act, the new public body would also be responsible for administering and organizing this large territory. The board of the corporation consisted of five directors and included a lawyer, a private businessman, the president of Hydro-Quebec, and the general manager of the *Banque Provinciale du Canada*.

The reasons behind this large and complex undertaking are not clear. On the political level many commentators find it significant that Mr. Bourassa, the Premier, announced the project initially at a large Liberal Party rally on the eve of his government's first year of office, rather than in the legislature. In terms of the province's energy requirements, it could be explained as a long-term commitment to meet projected power needs in the late 1970s and 1980s in the expectation that these could not be met from the large Churchill Falls project nearing completion in Labrador or by the large Hydro-Quebec Manicouagan-Outardes projects in the northeast. Critics of the proposed scheme suggested, however, that the government gave little attention to the relative costs of alternative power sources such as atomic energy.²²⁹

The early phases of the James Bay project were marked by considerable confusion and political controversy over form, location, scale, costs, and organization. The core of the controversy appeared to be a conflict between Hydro-Quebec and JBDC. The latter had been created, some commentators suggested, so as to eliminate Hydro-Quebec's power to influence the government's economic development program. The specific issue cited to support such a view was the alleged unwillingness of Hydro-Quebec to use discriminatory pricing as a development instrument. A *Financial Post* reporter wrote, for example:

"it is understood Bourassa wanted to use the James Bay Development Corp. to muzzle Hydro-Quebec. Many senior government officials here have been distressed for years over what they con-
sider Hydro's cavalier attitude to government industrial development policies.

" 'Hydro's idea of an industrial development policy is that a Kilowatt should cost the same in Montreal as it does in Sept Isles,' one official told F.P."²²⁹

As it turned out, Hydro-Quebec, with opposition support in the legislature, thwarted such an attempt. An amendment to the original bill to create the JBDC gave Hydro-Quebec a 51 per cent control of the project and the right to name a majority of the board's directors.

The initial role proposed for JBDC in 1970 envisioned that it would work with existing public resource corporations in Quebec – the Quebec Mining Corporation, the Quebec Petroleum Industry Corporation, and the Quebec Forest Products Recovery Corporation, in developing the resources of the region under its jurisdiction. It was also anticipated that it would form subsidiaries with such bodies and with Hydro-Quebec. The first such subsidiary, James Bay Energy Corporation, was established immediately to proceed with hydro-development, but although the chairman of the subsidiary's board of directors was the chairman of the JBDC, Hydro-Quebec gained authority to subscribe 70 per cent of its equity and to name three of its five directors.

Conflict within the Energy Corporation between the Hydro-Quebec and JBDC interests involved two main issues: one, the location of the first projects; the other, award of management contracts. Hydro-Quebec initially favoured developing the southern Nottaway, Broadback, and Rupert river system where it had already begun to construct a road from Mattagami to the Rupert River. In May, 1972, however, it was announced that the initial projects would involve the northerly La Grande river complex because of lower capital costs per unit of power produced, less extensive flooding, and "no interference with Indian reserves."²³⁰

The other conflict was over whether management contracts for the initial \$6-billion project on the La Grande system would be awarded to a U.S.-controlled firm or to Quebec firms. Following the resignation of the JBDC's chairman from the presidency of the Energy Corporation, two firms were selected to manage the project: one, Lalonde, Valois, Lamarre, Valois and Associates of Montreal, the other, Bechtel Quebec Limited, a new subsidiary of the U.S. firm which has been involved in a remarkable number of large engineering projects in Canada including the Canol pipeline during World War II, Churchill Falls, Labrador City, Baie Comeau, and other recent projects in B.C., Manitoba, and Alberta.

The JBDC has denied that its output is destined for U.S. markets, claiming instead that it is designed to meet Quebec needs through the 1980s.

The estimated capital costs of even the limited initial developments announced to date have risen as a consequence of inflation, construction difficulties, labour conflicts, and the unforeseen need to supplement engineering studies with socio-economic and environmental impact studies. When first announced in 1971 the total cost of the project was estimated at \$3 billion. By 1972 the four generating stations on the La Grande system alone were being estimated to cost \$5.8 billion, with construction to be completed by 1984. In May 1974 estimates of over \$10 million were being referred to.²³¹ The JBDC indicated early in 1973 that "to maintain control in Quebec, the project will be financed largely through debt" with much of the money being raised outside the country.²³² Foreign borrowings of \$500 to \$600 million per year were anticipated and, while critics expressed the fear that such an inflow of funds would force an undesirable appreciation in the Canadian dollar, JBDC officials discounted such fears on the grounds that previous large scale borrowing had not unduly distorted Canada's exchange position.²³³

The federal government role in the James Bay project is unusual and new. Northern resource development in the 1970s can no longer disregard environmental protection and the often related issue of native land rights. The former was provided for, somewhat belatedly in the minds of some observers, by an agreement between the federal government and the JBDC, whereby the former committed up to \$8.4 million to finance environmental studies related to the project.²³⁴ The federal involvement in the project by way of the native land claims issue arose from the federal government's role as trustee of Indian rights in Canada and its financial support of Indian and Inuit groups in their litigation with the provincial authorities.

Newfoundland

Newfoundland's post-Confederation development policies were part of a massive effort at social, economic, and political reform strongly led by Mr. Smallwood. The premier's position in 1950, as one writer suggests, "resembled in some ways more that of the liberator of a former colonial territory than that of the premier of a Canadian province." His plan for the province's future rested heavily on resource development, in which area the same observer notes, "Mr. Smallwood started with good intentions but Newfoundland now resembles the Quebec of Mr. Duplessis – a place of cheap docile labour and an anachronistic freedom for private enterprise to exploit the public domain."²³⁵

The expectations of Newfoundlanders at Confederation were high and required a high level of performance from an economy which had long been backward. The development strategy of the Newfoundland government was built on industrialization related to resource development, with private enterprise serving as the organizing force. "As a modernizer," Neary writes, "Smallwood had his greatest success not on the island itself, but in Labrador."²³⁶ At time of writing, it would seem that the Iron Ore Company of Canada's mining operations and the Churchill Falls hydroelectric scheme are the successes of note. Although both were "private" ventures, Churchill Falls was so tied to public policy that we must treat it here as a "policy" rather than as a "market" initiated development.

The Churchill Falls hydroelectric power scheme began in 1952 when Mr. Smallwood sold the British Rothschilds on the idea of a massive integrated resource development project for Labrador. Although Edmund de Rothschild, heir to the firm, reportedly found the whole scheme "somewhat remote", a consortium was formed of Rio Tinto Company (a Rothschild firm), Anglo-American Corporation of South

Africa, and English Electric to exploit mineral, water power, and forest concessions in Labrador and Newfoundland.²³⁷ The consortium, acting initially under the name British Newfoundland Corporation Limited. was subsequently expanded by more than 20 additional firms and renamed "Brinco Limited". When incorporated in 1953 by the Newfoundland legislature, the firm was given a 20-year option to exclusive 99-year rights, and concessions renewable for a further 99 years, to develop any rivers, streams, waterways, or watersheds in Newfoundland and Labrador not already assigned to others; a 20-year mineral exploration lease on 129 500 km² of Labrador and 25 900 km² on the island of Newfoundland, with the requirements to spend stipulated minimum amounts on exploration and to surrender at 5-year intervals portions of the lease as exploration was carried out; and a 20-year option to take a 99-year lease on certain forests in the Goose Bay region. The scheme involved, then, three main components – hydropower, mining, and forestry. To date only the first of these has been significantly developed. The forest lands option was surrendered by the company to the province in 1968 and the mineral options to a subsidiary, Brinex, which has been active in exploration and acquisition of additional rights, including coastal oil and gas concessions, but which has only brought one small property, a copper mine on the northeast coast of Newfoundland, into production.

The hydropower option was exercised in 1961 by a subsidiary of Brinco, Churchill Falls (Labrador) Limited (called "Hamilton Falls Power Corporation Limited" until 1965). The power site proposed for development was on the upper Hamilton river at Hamilton Falls (subsequently renamed Churchill Falls by the Newfoundland legislature) where by 1957 some \$4 million had been spent by the company on engineering studies and construction of a road from mile 286 (kilometre 460) on the Quebec North Shore and Labrador Railroad to the site.²³⁸ The potential generating capacity at the initial proposed site was estimated to be about 34 000 million kilowatt hours a year.²³⁹ It was apparent that local power requirements, even with the large iron ore mining projects in the vicinity, could consume only a trivial fraction of such an output and their demand was, in fact, already supplied by a small 120,000 horsepower plant built by another Brinco subsidiary, Twin Falls Power Corporation, on a site 19 km southwest of Churchill Falls on the Unknown River.

Development of Churchill Falls consequently depended on the establishment of markets in the industrialized south. Given the size and strength of Brinco's financial resources there was little doubt that the necessary capital could be developed. The technology required to carry power long distances was also available by the early 1960s.

Three possible markets for Churchill Falls power could be identified. One was the Island of Newfoundland which desperately needed cheap power as an industrial incentive. The problems there were that an expensive undersea transmission system would be required, the price of the delivered power would probably not be satisfactory to Brinco unless final users were subsidized, and other markets, possibly in the Maritime Provinces, would probably also have to be developed to absorb the capacity output of Churchill Falls. A second potential market was Quebec – the "nearest and most logical customer," as the chairman of Brinco called it in 1964.²⁴⁰ A third possibility was the U.S., where Consolidated Edison in New York State was experiencing difficulty expanding capacity to keep up with its demand. Both of the latter possibilities were jeopardized by constitutional and jurisdictional conflicts. One was that the Quebec government refused to provide a land route for the necessary transmission lines unless it was given an interest in the project as a whole, preferably by way of joint public-ownership of Churchill Falls by Ouebec and Newfoundland. Newfoundland found such an arrangement unacceptable, presumably due to its financial relations with Brinco. In the course of difficult negotiations with Quebec, the Newfoundland government indicated it would go ahead with an undersea link to Newfoundland and a further transmission system to the Maritimes and the New England states. This, however, appeared to be unacceptable to Brinco because of the additional capital costs. In 1966 the various parties reached an agreement: Hydro-Quebec would purchase most of the output of Churchill Falls at the border, for 44 years, at an undisclosed price and transmit it over its own lines for resale in southern markets. One of the benefits of this plan for Quebec was that between 1966 and 1976 it would provide Hydro-Quebec with the possibility of reducing its annual capital expenditures on its own projects. including James Bay, in order to assess the potential of alternative sources of electrical energy.

With a market guaranteed, the Churchill Falls project went ahead rapidly and on a larger scale than originally intended. Most of the financing was secured by an initial mortgage bond issue. Two series were marketed in May, 1959: Series "A", sold in the U.S., totalled \$500 million and Series "B", sold in Canada, totalled \$50 million. Other funds were obtained through \$83 million in shares issued, \$100 million in general mortgage bonds and shares, \$150 million from cash flows associated with the Twin Falls operations, and \$150 million from a consortium of seven Canadian chartered banks. Control over the Churchill Falls (Labrador) Corporation was exercised by Brinco with about 57 per cent, Hydro-Quebec with 33 per cent and the Newfoundland government with 10 per cent. Brinco in turn was controlled jointly by Rio Tinto Zinc and Bethlehem Steel through Thornwood Investments, a holding company.²⁴¹ Hydro-Quebec's interest was acquired in 1962 when it nationalized the private power companies in the province, including Shawinigan Engineering, one of the shareholders in Churchill Falls (Labrador) Corporation.

Financing of the project was somewhat enhanced by the federal government's decision in 1968 to exempt the U.S. holders of Churchill Falls bonds from the 15 per cent Canadian withholding tax. The federal Minister of Finance explained that without such an exemption so large an issue would not have sold, except at interest rates which would have raised the projected cost of Churchill Falls power. The loss of federal revenue was estimated to constitute a subsidy of perhaps \$50 to \$75 million over the 25 years such issues might be expected to run, although it was difficult for financial analysts to determine who was benefiting from the subsidy. As one report remarked:

"No one is really sure who's being subsidized. Is it the American bond buyers, who will escape paying the Canadian tax on interest paid? Is it Brinco, a privately owned company that's beginning to look more public all the time? Or is it the people of Quebec and Newfoundland, who may pay less for their power because of the exemption?

"The inescapable fact is that it's a subsidy, and, in spite of the guesswork surrounding its size, it's a substantial one."²⁴²

Canadian Bechtel and Acres Consulting Services managed the work. Employment peaked at 6 200 in summer 1969. Transportation to the site was via road from the Quebec North Shore and Labrador Railroad at Esker. A 6 475 km² reservoir was created to feed through 11 penstocks with a 4.5 billion litres per hour capacity to an underground power house designed to accommodate 11 turbine-generators. Maximum output is estimated to exceed 34 billion kW annually.²⁴³ Construction went ahead rapidly and the first power was delivered to Hydro-Quebec in December 1972, well ahead of schedule. Estimated final cost approached \$1 billion not including Quebec-Hydro's near \$500-million investment in transmission lines.

By this time, negotiations were underway for development of a second project 209 km downstream from Churchill Falls at Gull Island. This time the conflicts of interest appeared to be mainly between the Newfoundland government and Brinco, Hydro-Quebec would again be the most likely customer. Although Newfoundland was expected to net some \$15 million a year from royalties, dividends, and taxes from Churchill Falls,²⁴⁴ the government suspected it had been overgenerous to Brinco and wished to extract better terms before going ahead on a second major project. In particular, the government still wished to use Labrador power as an industrialization incentive in Newfoundland. The earlier negotiations had left Quebec with all the energy and forced Newfoundland to develop other power sources on the Island to meet its own requirements. As a private firm Brinco's interest was obviously in keepsubsidiary's profits at a suitable level. Hydro-Quebec, as a ing its partner in the project, favoured commercial pricing as opposed to discriminatory pricing policies. The position of the third partner, the Newfoundland government, was awkward. Although the agreement with the Churchill Falls Corporation entitled it to "recapture" 400 000 horsepower of Churchill Falls power for use in Newfoundland or Labrador, it had no assurances concerning the price at which it could buy such power. Thus, a government spokesman remarked in 1972 that:

"Unfortunately, there was no written agreement entered into with BRINCO or Churchill Falls Labrador Corporation covering what price this province would have to pay for power recaptured. We have discovered that under the trust deed entered into between Churchill Falls Labrador Corporation and bond purchasers who put up the money for the development, there was a clause that states that . . . power . . . cannot be sold to Newfoundland. . . . "Unless the terms of such sales are not materially less favourable to the company than the terms on which such power, if not so recaptured, would have been sold under the power contract, to Hydro Quebec." So that we, to use this power in Newfoundland, Labrador, will have to pay Churchill Falls Labrador Corporation the same price as is paid by Quebec Hydro, to meet that condition in the trust deed.

"That, Mr. Chairman, is a very unfortunate matter. We were led to believe years ago, when this was being first mooted in the House, that Newfoundland was going to have available to it recaptured power at a price considerably lower than what, in fact, it will be available to us for. There used to be mentioned one, one and a half or two mills. This is not the case. We are going to have to pay at least as much as Quebec Hydro pays, and that will be in excess of three mills. There was no agreement in writing covering that."

Mr. Crosbie went on to note that:

"in order to have this development start there were a great many concessions and exemptions given to the companies that carried out construction – exemption from the sales tax, exemption from the gasoline tax and the like, all of which, had we received the monies through those taxes, would have meant tens of millions of dollars in our pocket. The revenue that we are going to receive from the Upper Churchill is not (as great) as we were led to believe in former times . . . we will not receive up to \$15 million – that is the best estimate now – until the year 2002."²⁴⁵

When negotiations over development of the lower Churchill River began, Brinco and the Newfoundland government found themselves at an impasse. The premier, Mr. Moores, was quoted in the press as saying that Brinco wanted similar concessions to those it obtained for Churchill Falls, including a rebate of more than 50 per cent of all corporate income taxes (made possible by federal legislation of 1966 permitting provinces to collect and rebate taxes from private utilities) and low royalty rates, and that to these his government could not agree. If Brinco developed the new site, he also stated, the company would be more likely to sell the power to mainland Canadian consumers for higher prices than could be obtained in Newfoundland.²⁴⁶

The government consequently offered to buy Brinco and when the company rejected the purchase offer, introduced legislation to nationalize it. A last minute compromise was then reached by which the Newfoundland government bought, for \$160 million, Brinco's interest in Churchill Falls (Labrador) Corporation and the company's Labrador water rights. Brinco was invited to tender, along with other firms, for construction of the new Gull Island project on the lower Churchill, which will apparently supply power to the island of Newfoundland by submarine cable.

Western Northlands

In western Canada, the extent of public ownership of electric power facilities and the potential of using cheap large supplies of electric power as a development incentive has varied greatly among the provinces, although since World War II only Alberta has derived its power from privately-owned plants.

In Saskatchewan, the principle of public ownership of electrical power facilities was accepted as early as 1929 when a provincial power commission was established. Development of power supplies was very slow under either public or private auspices until the 1940s, by which time the CCF government had begun to bring all generating and distribution facilities under public ownership. This process was completed by 1949 when the Saskatchewan Power Corporation was organized as a public power monopoly – a monopoly which was extended in the 1950s to the supply of natural gas in the province.

Much of Saskatchewan's power-generating potential lies in fossil fuels, and the extreme concentration of demand in the south, where such fuels are also located, explains why during the 1940s and 1950s there was little investment in power facilities in the northern shield regions. It was not until 1959 that a move to develop northern water power began with the Power Corporation's hydro development at Squaw Rapids on the Saskatchewan River. Until then, all the hydro power developed in northern Saskatchewan was locally consumed by the mining operations (virtually all in the Flin Flon area). Squaw Rapids power, which came on stream in 1963, was fed into the main provincial distribution grid.²⁴⁷ Present development trends suggest that foreseeable major electric power developments in northern Saskatchewan will be integrated with developments in Manitoba or Alberta. The potential mining and forest operations in northwest Saskatchewan are likely to be developed with transport and power facilities in northeastern Alberta, while in northeastern Saskatchewan the extensive hydro potential of the Churchill river is currently the subject of a joint Saskatchewan, Manitoba, and federal planning exercise.

In Manitoba, the first extensive survey of that province's northern economic development potential, carried out by A. D. Little Inc. in the 1950s, reported that: "Northern Manitoba's major economic resources are mineral deposits, extensive forests, and developable hydroelectric sites. Small-scale industry, fishing, trapping, agriculture and tourism will continue to provide income and employment, and certain important new developments may take place. Northern Mantoba's economic growth, however, will depend upon the rate at which the three major resources are developed."

The same report concluded that while the development of hydroelectric power would be an important factor in drawing industry into the area: "we see little possibility that Northern Manitoba's industries will use more than a very small proportion of the total electric power that could be generated; we therefore recommend that the Government plan the development of Northern Manitoba's hydroelectric resources so that, while providing ample power for industrial developments in the North, they can be interconnected with the Southern power system."²⁴⁸

The provincial government proved very receptive to this recommendation, but appeared to be struck by the evident logic of a national hydroelectric energy development scheme as opposed to piecemeal development of provincial systems. Pointing to the precedents of the railways, airlines, the Trans-Canada Highway, and the Trans-Canada Pipeline as measures to stimulate national economic development, the Manitoba government noted at the 1958 Dominion-Provincial Conference that a large number of major power sites scattered across northern Canada from B.C. to Labrador could be developed instead of building new thermal capacity in the south. All that was required was a federally financed system of long distance transmission lines.²⁴⁹

The proposal appears to have attracted no support and in 1959 the premier announced that the Manitoba Power Commission was proceeding "to expand into the area north of the 53rd parallel" to supply power to The Pas and surrounding area and "to assume responsibility for power distribution at Thompson townsite and other northern centres."²⁵⁰

Manitoba's major northern power potential is all located on the Churchill and Nelson rivers. The former rises in northern Saskatchewan and flows through a number of lakes in its tortuous northeasterly course to Hudson Bay. One of the largest of these lakes is Southern Indian Lake, with an area of over 1 600 km². The Nelson river flows 660 km from the north end of Lake Winnipeg to Hudson Bay, dropping about 215 metres along the way.

The first northern generating station in Manitoba was the Kelsey plant completed on the Nelson river in 1960 to supply the large demand of the Thompson nickel complex. Its original capacity of 160 000 kW was increased to 224 000 by 1972.

In 1966, the provincial government announced a plan for further development of the Nelson. Described as "the largest single natural resource project in the economic history of Manitoba," the scheme foresaw construction of a series of dams which the premier stated in 1966 "can be confidently expected to provide something over five million Kilowatts of electrical energy with an overall cost of about \$1 billion."²⁵¹ Federal support for the undertaking consisted of installing the necessary \$120-million transmission line from the initial site to southern Manitoba and in carrying out preliminary studies, the costs incurred being repaid by Manitoba Hydro on a use basis. Construction of the first of the stations, Kettle Rapids, began in 1966 with final capacity expected to reach 1 272 000 kW by 1975. The estimated initial cost was \$325 million.²⁵²

The purposes of this ambitious undertaking for a province of only a million people were presumably to ensure an adequate supply of "cheap" power to 1980 and to stimulate development in the north. Traditionally it had not been the practice of the Manitoba government to use power rates as a development incentive. The 1969 Manitoba Commission on Targets for Economic Development recommended, however, that this policy be reviewed:

"Consideration should be given to supplying industries with incentive power rates for three to five years where significant benefits might accrue. Among the possible benefits to be weighed in considering whether to grant incentive rates to a particular industry are:

- Creation of employment
- Utilization of resources as yet unused
- Increase in the tax base
- Developments of dependent industries
- Reduction in welfare
- Optimum utilization of power generating and distributing plant.

"In the past the Manitoba Hydro has been reluctant to offer in-

centive rates for electric energy. It is recognized that difficulties would arise if Manitoba Hydro were to offer incentive rates to certain industries and not to others on similar terms. However, a rationale can be developed for providing electric power at incentive or reduced rates based on the recognition that approximate monetary values can be assigned to the benefits accruing from the attraction of power-intensive industries and that these values exceed the revenues foregone by providing power at less than the usual rate. As a matter of fact the practice of granting incentive rates is a well established practice of both public power and private utilities. Most frequently its application involves the attraction of an industry that would not have located in the operating area of the utility save for the special power rate."²⁵³

With respect to stimulating *northern* development in particular, the commission reported as follows:

"The second contribution is to make an area accessible for development. In most cases mining development depends on high ore concentrations and large deposits in order to be economically developed. Many areas, however, cannot be developed due to their remoteness and the heavy capital costs required to supply the necessary power for smelting and refining operations. The availability of low-cost hydro power is, therefore, a great advantage to an area. In this case, electrical development in northern Manitoba:

- Makes available low-cost energy on site
- Creates a northern labour pool whose existence lessens the problems of attracting people to other developments such as mining operations.
- Encourages support for northern air services, development of roads into the northern areas, freight service by rail and truck in winter, and by rail, truck and water in the summer.

"All these factors lead the mining industry into more extensive studies and exploration of possible ore deposit development within the reach of major hydroelectric services. This is quite possibly the explanation for increased exploratory work carried out in Manitoba recently.

"Hydroelectric power generating development has had, and will continue to have, a very significant effect on the development of northern Manitoba. It has already been noted that over half of Manitoba's industrial power is used in metal mining, smelting and refining. Further development will result in greater demands for electrical energy. Basically, the two developments go hand in hand. Mining must have a substantial supply of electrical energy while Manitoba Hydro's development depends heavily on this market source.

"The contribution that Manitoba Hydro makes to northern development can be substantial. The first need of mining interests in establishing facilities for processing ore is an adequate supply or guarantee of power. An example of this could be the development and expansion of Thompson."²⁵⁴

The possibility of revising Manitoba's policy of not selling power to users outside Manitoba at rates lower than in the province itself was also considered by the same committee, which appeared to favour the possibility of exporting excess power that might result from Manitoba Hydro's policy of building in advance of demand.

Until 1968 most of the information relating to the Nelson project stressed the virtually "unlimited" potential of the system. In 1968, however, Manitoba Hydro applied for permission to dam Southern Indian Lake, raise its level by over 9 m, and flood a 3 200-km reservoir to be used to feed water from the Churchill River into the Nelson system by way of the Rat and Burntwood rivers. When the approximately 600 Indian and Métis resident in the area rejected Manitoba Hydro's offer of \$60 000 to relocate the community, a storm of protest from ecological and native people's groups broke out and helped precipitate a provincial election in which the government was defeated.²⁵⁵

Despite what a press report referred to as "total public confusion" over the issue,²⁵⁶ the scheme itself was not new. Indeed, the concept of diverting water from the Churchill into the Nelson dated back to 1917, the idea being to concentrate development on one river as much as possible. Preliminary studies in 1965 preceding the Kettle Rapids construction had also included such a diversion as well as the construction of control works at the outlet of Lake Winnipeg.²⁵⁷

The NDP government elected in 1969 found itself faced with the awkward task of justifying a program it had criticized in opposition, but which was too far advanced to be halted. The political solution was eased somewhat by the discovery that a 4, rather than an 11-m increase in the level of Southern Indian Lake would meet engineering and economic requirements of the diversion scheme. Conservative commentators in the business press expressed satisfaction that the project would go ahead, although opinion on the left reflected a sense of betrayal by the Schreyer "moderates". One of the more analytically inclined journals of the left read into the experience a broader significance: while regretting that "the NDP Government, having had the unique opportunity of setting things straight, fell in line with the old-line resource philosophy," the editor expressed some of the broader doubts which resource-use planners have had to contend with in the 1970s. In particular he proposed that we abandon "as a basic resource development criterion the primacy of maximizing economic efficiency in the short term" and, secondly, that we also abandon "our single purpose resource planning in favour of a regional planning approach which aims at the long-term solution of the real problems on the basis of proper resource inventory and allocation."258 A number of the more theoretical aspects of such proposals will be considered in the section "The Political Process in Northern Development".

The need for some form of interprovincial planning for water power use was further illustrated in the Manitoba project by the implications the Churchill diversions had for power developments in the Flin Flon area. Most of the power for Flin Flon is generated in Saskatchewan at Island Falls on the upper Churchill. The trend toward integration of such facilities into provincial or multi-provincial power grids has made such local developments – and the decision-making system which brought them into existence, increasingly anachronistic in the 1970s.

The other large river system in the northwest, capable of multi-plant

development, is the Peace River flowing through north eastern B.C. and northern Alberta to join the Mackenzie system in the Lake Athabaska area.

Large electric power projects in northern Canada since the war, such as development of the Peace River sites in B.C., had little to do with "free market forces." Rather they seemed to arise from prodevelopment mood in the community, provincial political strategies, and the objectives of large, semi-independent public power corporations. These corporations had expertise to transmit power over hundreds of kilometres to outside markets, which made local industrial demand unnecessary as a pre-condition for developing the north's hydroelectric potential in the 1960s. The same technological breakthrough also made it possible for hydro developers to abandon the increasingly discredited argument that industry would follow cheap power into remote regions where it was generated. In B.C., for example, opponents of northern power development noted that despite the surplus power available from the Aluminum Company of Canada's (ALCAN) plant built at Kemano in 1954, other industries were slow to migrate there, even though the site had several other attractive features, including tidewater transportation. Since the late 1950s the location of industry has been determined by proximity to markets and to supplies of other inputs. The only instances in which this might not be true would be industries with such an overwhelming demand for power, both in absolute terms and in relation to other inputs, that they could absorb the low cost output of a large plant, however remote, and eliminate transmission and possibly associated DC to AC conversion costs. Such industries are few. The current, and perhaps classic example appears to be uranium enrichment plants.

All these considerations are illustrated by the Peace River power project: a development-oriented provincial government; a newly created public power monopoly; a power site remote from markets; and an involved debate over engineering, environmental, and more narrowly defined economic issues relating to the feasibility of the project. The total irrelevance of more traditionally defined issues, such as the merits of private over public resource development, is perhaps even more striking in this case: for example, in the 1960 B.C. election a major plank in the NDP program was nationalization of the privately owned B.C. Electric utility, a step denounced by the Bennett government as inimical to the maintenance of a favourable climate for private investment in the province. Back in office, the Bennett government, finding its development program hindered by B.C. Electric's policies, promptly nationalized it.²⁵⁹

The Peace River power project received its initial stimulus from the B.C. government's conflict with the federal government over the terms of the Columbia River Treaty with the U.S. In the course of difficult negotiations, the provincial government announced in 1961 that regardless of the outcome of the Columbia arrangements, the province would immediately proceed to construct a massive facility on the Peace River. British Columbia Electric Company, convinced that power from this source would be excessively expensive, was unwilling to agree to purchase it. The government thereupon took over the company and announced that B.C. Electric would thereafter be an agency of the Crown entrusted with "the development under public power of the Peace River project, which will be the largest single power project in the world."²⁶⁰ Commenting on this turn of events, the former executive vice-president of the company opined that the government might have avoided the trouble of taking over the firm if the premier had promoted the Peace River project on political grounds rather than trying to justify it economically.²⁶¹

Despite dark references in the U.S. business press to "creeping socialism" in a formerly safe jurisdiction for "free enterprise," the provincial government was able to announce within a year of the appropriation that \$60 million had been raised in U.S. funds for B.C. Hydro, through the first of a series of heavy bond issues in the U.S. market needed to support not only the Peace River project, but a large Columbia River development, the Mica Dam, which the government decided to proceed with simultaneously. In fact, U.S. financial resources proved easier to tap than the Canadian federal government from which the premier rather stridently demanded financial assistance for power developments in the province.²⁶²

Work on the Peace River project began in 1961 with diversion works at the site and contracts were let for the construction of the 182-m Bennett Dam at Portage Mountain in 1963. The reservoir behind the dam was expected to cover 1 760 km². The underground powerhouse at the Portage site was designed for an ultimate capacity of 2 300 000 kW. The first three generating units were started up in September 1968 and the first 500-kW transmission line to the lower mainland of B.C., 925 km away, was completed in the same year.²⁶³ The government's overall expenditures to that time on the project amounted to almost \$520 million. In his 1969 budget speech the premier observed that "The raising of this capital by the Province of British Columbia without one dollar coming from Provincial Government tax revenues ranks as a major financial accomplishment."²⁶⁴

Although the change of government in B.C. in 1972 led to a review of B.C. Hydro's financing and other policies, it did not alter the province's apparent commitment to build more hydro dams to meet future electricity needs in B.C. In 1974, B.C. Hydro announced that it proposed to go ahead with a second Peace River dam at a site 23 km downstream from the Bennett Dam, some 5 km from the town of Hudson Hope. Two additional sites further downstream have been proposed for future development on the Peace.

Other rivers in northern B.C. have also been investigated as potential hydro sources, but most probably could not be developed without serious environmental damage and, in several cases, destruction of salmon fisheries, a trade-off which could prove particularly difficult to justify.

Alberta's energy situation since World War II has been unique in Canada by virtue of its extensive supplies of coal, natural gas, and petroleum. These resources have made it possible for Alberta to rely upon a relatively decentralized electrical power generating system. Until recently, the principal hydro developments have been confined to Calgary Power Limited's installations on the Bow River and its tributaries and, more recently, their large hydro unit on the Brazeau River in the headwaters of the North Saskatchewan.

A number of potential hydro power sites have been located in northeastern Alberta on the Athabaska River and on the Slave between Fort Fitzgerald and Fort Smith, although it is doubtful that they are large enough to produce power as cheaply as thermal plants located closer to the centres of demand. Most small local users have depended on diesel generating units, most of which use natural gas as fuel. Several gas turbine plants have also been installed in northern Alberta.

In the northwestern part of the province there are several potential power sites on the Peace River and one of these has recently been the subject of engineering assessments by the Alberta Environmental Department. The development proposed would back up a reservoir to the B.C. boundary about 129 km to the west.²⁶⁵

Although a number of large hydroelectric schemes have been proposed for the territorial north over the years, public investment in power facilities has been limited to meeting local demands, in part through small-scale hydroelectric facilities such as those at Whitehorse, Mayo, Yellowknife, and Fort Smith, but mainly through diesel-electric stations burning oil. Provision and operation of such facilities since 1948 has been the responsibility of the Northern Canada Power Commission, (originally the "Northwest Territories Power Commission") established by Act of Parliament to provide power to places in the NWT where a need had developed and where power could be supplied on an economically self-sustaining basis.²⁶⁶ In 1950 the Commission was authorized to provide similar services in Yukon Territory.

Sufficient work has been done on the engineering feasibility of large hydro diversions and generating facilities throughout the territorial north to establish the possibility of extending the type of development seen in the provincial north to the area north of 60°. In the Yukon, particularly, the possibilities of diverting the headwaters of the Yukon River through the Coast Mountains attracted considerable attention in the 1960s. Indeed, Premier Bennett's proposal to annex the Yukon to B.C. in 1966 was interpreted by some Yukoners as having been prompted by his "larcenous lust" for the returns from Yukon resource development, and in particular from such hydroelectric power developments.²⁶⁷ Interest in such schemes appears to have decreased. In the NWT there has also been speculation about the power potential of the rivers flowing into Great Slave Lake, and, in particular, the South Nahanni which drains into the Mackenzie via the Liard.²⁶⁸

We can only speculate about whether such potential resources are too geographically remote to develop or whether the absence of at least one mammoth power development in the federal north is the result of different approaches to water power at the federal and provincial levels. However, every province with a major northern water power resource has undertaken to tap it. Some explanations advanced can be easily dismissed. There is little reason to believe that the large projects described were required to "develop" the north, for there is no evidence of significant linkages between the supply of energy on the scale achieved and foreseeable local needs. Nor is there evidence that new industry is attracted to such locations by the existence of such power supplies. And certainly there is no evidence of lasting income and employment effects attached to such projects.

More plausible is the argument that such investments were warranted on grounds of economic allocative efficiency criteria. However, these, as we shall see in more detail in the section "The Political Process in Northern Development", are elusive criteria. Despite the valid claim that river development studies were pioneer exercises in benefitcost analysis, such analysis is at best an aide to political decision making. Its critics would suggest that at worst it is a device to mystify and to deceive the innocent user by lending a spurious precision to the evaluations being discussed. Because of this, it is not possible to assume that the projects described are "efficient" in relation to alternative uses of economic resources.

Conspiratorial theories inspired by fears of the kind engendered by the NAWAPA (North American Water and Power Alliance) scheme and its successors, while gaining an element of plausibility from the sequence of the projects executed to date and their ready adaptability to a massive diversion of Canada's arctic watershed to the U.S., fail to explain the motivation of the decision makers who are formally responsible for carrying these projects out.²⁶⁹

Other Public Development Policies

Public investment in transportation and in power facilities are long established ways of promoting the growth of economic activity in "new" regions.

Historically, provision of major transportation facilities in the north has been related to agricultural settlement, the measure and substance of development policy. Until the 1950s there were few examples of major public investments in transportation to promote other kinds of development, such as mining or forestry, unless these were associated with agricultural settlement. Public investments in power facilities have served as instruments of industrial development, but, most often, development located in the south.

Other instruments, however, have been available to policy makers concerned with promoting industries *in the north*. The lands policies referred to earlier, such as mining lands, forest lands, and agricultural lands, have been the obvious examples of how policy could facilitate the commercial exploitation of resources by setting low prices for their use. In this section, we examine some other measures which have been designed to promote private developments in the north, especially since World War II.

It is extremely difficult to find unequivocal examples of these measures – measures that are not available anywhere except in the north as we are defining it. What stand out are policies relating to the traditional industries of the north: trapping, hunting and fishing, a few special incentives to the mining industry in the north; and some assistance to certain cottage-type industries based on local skills or crafts.

Government policies toward the trapping, hunting, fishing, tourism, and craft industries of northern Canada since World War II appear to have had a common objective: to provide the permanent, and mainly native, population of the area with employment and income. The instruments of policy have been varied. They include regulation of the resource base in the interest of sustaining its yield; encouragement of forms of organization to reduce competition among sellers, such as by establishing producer co-operatives and natural products marketing boards; training programs; and financial aids to small local business.

These programs have had mixed results, not all of which may have been foreseen by those who devised them. With respect to their prime "economic" objective, they have undoubtedly helped to preserve and raise the total amount of employment and income in the north. These benefits, however, have been offset by the increase in population remaining dependent on such sources of employment and income, with the consequence that on a per capita basis, the results of these programs appear meagre in some instances and actually negative in others. Because of this, in terms of the northern economy per se, the residentiary industries are not unlike the primary staple industries, mining and forestry, in their inadequacy to support the resident population of the area at anything resembling the southern Canadian level of living. A corollary of this is the overwhelming importance in the north of the only other kind of economic activity which has developed in the area since World War II, the service sector with its heavy direct government assistance and transfer income components.

Economic policies, such as those aimed at raising the income and employment-generating capability of the domestic industries of the north cannot be assessed solely in terms of their direct economic results. Marxists are not alone in appreciating the fact that the nature of a person's work affects other aspects of her or his being – and the way in which humans are organized for productive effort has long been recognized by economic historians as a rich source of social and political consequences. The programs and policies described in this section appear likely sources of such consequences. They have to some extent created "community" where none existed and altered preexisting social and political relations. In both cases, a local political force has been introduced into the public decision-making process, the strength of which cannot yet be assessed, but the simple existence of which must be recognized in any conception we form of the political economy of the north today.

Helen Buckley's classic 1962 study of the northern economy of Saskatchewan represented the first serious analysis of what we are referring to as the traditional economy of the north in the post-World War II years. While focussed on the problems of the perhaps 12 000 native inhabitants of Saskatchewan's Northern Affairs region (roughly the area north of 55° on the west and Squaw Rapids on the east) it had general relevance for most of the provincial north: "the meteoric rise of the mining industry has had little effect on the incomes of Indian and Métis people. They rarely work in the mines; they have little to sell to the white communities which have grown up around the mines. The much vaunted tourist industry offers little beyond guiding; at La Ronge, its chief centre, 30 to 40 men earn upwards of \$500. In short the South has created jobs for the Indian and Métis of the North.²⁷⁰

The Trapping Industry

The principal source of employment in the northern economy even

after World War II was trapping. Hence, policies to promote the wild fur industry appeared to be an obvious way to improve native incomes in the area. The policy instruments available were already being applied in several provinces. The most obvious were measures to conserve the resource base by discouraging over-trapping and by restocking areas which had been over-trapped in the past. B.C. had initiated a system of registered traplines as early as 1926 to give trappers an incentive to conserve the source of their income. In Ontario, trapline management began in the 1940s around the borders of Algonquin Park and in 1948 was extended over all of northern Ontario, including the district of Patricia.²⁷¹

Northern Saskatchewan's fur industry was brought under systematic regulations at the end of World War II when a federal-provincial fur agreement created the Northern Fur Conservation Program. This brought all the Crown lands north of 53° under the supervision of a Fur Advisory Committee made up of federal and provincial government representatives. Its main concern was with beaver and muskrat preservation, and the agreement provided that up to \$50 000 annually was to be spent over a 10-year period to set up administration areas and to restock beaver colonies, with 60 per cent of this provided by the federal government. The agreement was subsequently extended, but in 1972 it was expected that a more comprehensive program of renewable resource management would be worked out for the area.²⁷² Under the provisions of the earlier Northern Fur Conservation program, Indian, Métis, and white trappers were responsible for organizing conservation areas through five-person councils elected in each of 99 regions (of which 39 were in the Northern Administration Region).

Buckley's assessment of this program in Saskatchewan was that it was successful, especially in light of the conditions which had prevailed before 1946. "The Northern Fur Conservation Program was immensely successful in arresting the decline in numbers of furbearers, which had threatened to wipe out the trapping industry. It has gone a long way toward restoring resources to the Indian and Métis people and, through tenure, has given them security. To a considerable extent it has succeeded in getting across the principles of fur management, so that trappers have the added security of a yearly crop."²⁷³

Similar conservation programs in other provinces and in the territories have had similar results, at least insofar as preserving the resource base is concerned. In Ontario, for example, much of the wild fur management policy of recent years has been devoted to attempts to increase the trapping of beaver which is once again described as "abundant" in the province. In Newfoundland and Labrador current research and management activities relating to wild fur species are said to be devoted to finding ways to "exploit this resource more fully."²⁷⁴ There have also been some less successful cases, notably where outside regulation was emphasized more than self regulation and education – as may have been the case in Alberta – but generally the efforts since World War II to conserve wild fur resources must be judged a success.

A second obvious way of strengthening the wild fur industry in the 1940s was to reduce or eliminate competition among sellers. The monopoly of the Hudsons' Bay Company as a buyer of furs in the north had, of course, long since been broken, and while some jurisdictions took steps to keep out itinerant traders it was possible in most places for trappers to find alternative buyers. How "competitive" the price was at which these buyers took furs is not easily established from available sources, but it is clear that the base price of furs was ultimately established in the major fur markets outside the north. The prices established in such markets clearly set limits for prices in the supplying regions, none of which were likely to be important enough sources of total supply to permit them to have a price policy. Nevertheless, it was possible that the price to the producer could be at least marginally improved through organized selling. In western Canada such a possibility has for decades been an article of faith for agricultural producers, so it is not surprising that there, at least, an attempt would be made to apply the same principle to the fur industry when it became an object of concern for provincial policy makers. The likelihood was further enhanced, of course, by the existence of a CCF government. Thus in 1944 the provincial government established the Saskatchewan Fur Marketing Service.275

The Fur Marketing Service, available to all fur producers in the province, was intended to raise the price received by the producer. It is not evident how successful it was in this regard. Buckley notes, however, that it was not much used by northern trappers, especially after 1956 when the requirement that all beaver and muskrat be marketed through it was removed.²⁷⁶ The northern trappers apparently preferred the credit arrangements they could make with private dealers to the advance and final payment system used by the government service. However the compulsory feature, while in effect, was responsible, Buckley suggests, for the success of the conservation program because it provided a check on the quota system.²⁷⁷

Whatever positive effects such marketing schemes, whether voluntary or compulsory, have had on trappers' incomes since the war, their benefits have been more than offset by generally declining prices. This long-term price decline reduced the appeal of full-time trapping.

Another factor accounting for the decline in the industry has been the "urbanization" of the northern native population in the post-war decades, a trend which has made it increasingly difficult and expensive for potential trappers to reach areas where furs are relatively plentiful.

A study of trapping in the Yukon concludes that as a result of such conditions:

"Not only do furs bring in less than they used to, but also, it seems to the writer; individual effort in trapping is dropping. A successful trapper must be committed to an annual round of activities. If he finds this way of life unsatisfying he may look around for an alternative one, and attempt to loosen those commitments which form the basis of successful trapping. Examples of what is meant by the loosening of commitments to the trapping way of life include the man who has no dogs and attempts to borrow some when he wants to go trapping; or the man without a trapline who waits until the end of the trapping season to go shooting beaver. The result of this half-involvement in trapping is frustration. Trapping is not worth the effort, but no alternative for cash exists. The demand for cash sinks to the bare necessities and poverty is the result."278

The Fishing Industry

The commercial fishing industry of northern Canada has developed slowly over many years as a source of part-time and full-time employment for native residents and itinerant fishermen from the south. Until World War II, however, there were few fisheries of any size located in the north and certainly none to compare to the long-established operations on the Great Lakes and Lake Winnipeg in particular. Those that were established in the north were highly seasonal operations carried on by individual fishermen, usually on a part-time basis, to supplement other sources of income such as farming, trapping, or pulpwood cutting. The product was of uneven quality and market price fluctuations were passed back directly to producers (if not amplified during downswings) by the commercial dealers, many of whom during the 1930s had strengthened their own positions by forming both horizontal and vertical combines.²⁷⁹

Growth of commercial fishing in the north was largely limited by the lack of transportation facilities as well as by the extreme uncertainty of market conditions. The principal involvement of government in the industry has consequently been an indirect one, in that public investments in transportation facilities have reduced transportation barriers to the opening of new fishing areas. However the *first* involvement of government arose from the need to control quality, particularly with respect to parasite infestation of whitefish. In some areas there were also attempts to use licensing to limit commercial fishing to residents.

World War II brought a major upset to the inland fishing industry, directly by way of sharp price increases, and indirectly by the transportation projects which opened up several parts of the northwest. Soon after the war a fishery was established on Great Slave Lake, a development which "contributed to a realignment of returns and the production pattern" throughout the whole western Canadian inland fishing industry.²⁸⁰ Another upset was the development of a government fish marketing scheme in Saskatchewan and the first successful establishment of local co-operative associations of fishermen, most of whom were native people. Although earlier attempts at co-operative enterprise in this industry were recorded in Manitoba (Manitoba Co-operative Fisheries Ltd. in the late 1920s) and Alberta (the Alberta Co-operative Fisheries Ltd. in the late 1930s), the Saskatchewan experience provided the first evidence that given sufficient government support, such a form of organization could be successfully applied in a setting such as the native economy of the north.

Federal government biologists in 1944 examined the possibilities of commercial fishing on Great Slave Lake.²⁸¹ They estimated that some 2 million kilograms of fish could be taken from the lake annually, enough to support a substantial new industry for the area.

"The fact that Great Slave Lake and the marine resources sustained by it were under the direct control of the federal government made possible an exercise in regional resource development by a government newly awakened to the potential importance of the north by the experiences of World War II. Here was an opportunity to develop a new industry in Mackenzie District – an industry, moreover, which at first sight would appear capable of providing employment opportunities of a kind well suited to the employment of local low-opportunity-cost labour. The land resources were there, a potential labour force was present and there was reason to believe that markets existed for the product. And, as already noted, the exploitation of the resource was directly controllable from the outset to ensure a long life for the industry. All that remained to be provided was the necessary capital, a suitable organizational structure, and a technology capable of ensuring delivery of a high-quality food product to the distant markets."²⁸²

As with other commercial fisheries in northwestern Canada, the main problem was transportation. This, and the related problem of providing processing facilities such as filleting and quick freezing plants, meant that heavy capital investments were required. Again the problem of scale manifested itself and the inevitability of monopoly organization along with it. The initial development of the Great Slave Lake fishery was consequently handled by a private firm already operating on Lake Athabaska. Completion of the Mackenzie Highway in the late 1940s reduced the transportation problem and permitted some smaller firms to enter the fishery.

The efficiency of the fishing operations on Great Slave Lake increased steadily through the 1950s and the introduction of larger boats, mechanical handling equipment, and eventually electronic navigation and fishfinding gear have made it possible for the fishery to survive the cyclical price fluctuations and years of low output common to the industry.

This increase in efficiency, however, has involved substitution of capital for labour, making the fishery, never a large employer of native labour, even less important as an alternative source of employment for native residents. Government policy sought to overcome this trend by encouraging the commercial fishing firms to hire native workers and by assisting them to acquire fishing equipment. But on Great Slave Lake, as elsewhere, the industry has provided at best only part-time employment for the few native workers who were engaged in it, while most of the operators of the larger boats which account for the bulk of the output of the summer fishery have been attracted from lakes further south. The winter fishery was largely manned by itinerant white farmers and other seasonal workers from the south.

Given the dependence of the Great Slave Lake fishery on the established commercial freshwater fish marketing system with its network of private dealers, brokers, and mainly U.S. retailing outlets, it could have only limited use as an instrument of public policy for influencing local conditions of income and employment. This commercial marketing system was not easily influenced by producers, even in the case of the relatively large and well located fisheries of the south, notably those on Lake Winnipeg.

"The weak bargaining power of the seller both in the relationship between the Canadian dealer and the U.S. buyer, and in that between the fishermen and the Canadian dealer, was partly caused by lack of information. In the first instance, U.S. markets such as Peck Slip were so poorly organized that only constant participation and actual presence permitted real knowledge of the situation. The fact that buyers usually were much better informed than sellers, and that there were violent fluctuations in fresh prices and unethical practices, led exporters to seek orders from large individual buyers outside such public markets. Here too, the bargaining power favoured the buyer since he could act independently to force a hard bargain. To maintain a strong position the seller needed effective price collusion which would stand up under duress. While such did not exist, the sellers, especially in Winnipeg, did attempt to keep secret the extent of supply. Even so, they could be played off against each other and misinformed about the extent of supply from other areas and the strength of demand.

"Secondly, the Canadian exporter was seldom a free agent, but was tied closely to some U.S. buyer. Under these circumstances price was an intra-firm decision, and in others no real negotiation was possible. In a number of firms that appeared to be involved in bilateral oligopoly, the buyer actually was often able to set a monopsony price. As a result many Canadian dealers believed they bore the risks, yet were forced to accept minimal returns. It was therefore not surprising that the Canadian dealer tended to limit his investment even where better equipment would have yielded higher returns. The investment pattern began to change only when the U.S. chainstore buyer became more important and insisted on good-quality frozen fillets. Leadership in improving quality, investment in plant and equipment and innovation in general, was often minimal in Winnipeg, and not much greater elsewhere in the region."²⁸³

By far the most vigorous attempt by government to deal with the problems of the northern inland fisheries was initiated by the Saskatchewan government at the end of World War II. This policy included several measures: one was to restrict fishing on northern lakes in Saskatchewan to bona fide residents of the area; a second was to establish a government marketing agency. Two approaches to the organization of such an agency were tried. The first was a Crown corporation, the Saskatchewan Fish Products Corporation, established in 1945 (subsequently reorganized as the Saskatchewan Fish Board in 1946) for the purpose of buying all the output of the northern fisheries on a compulsory basis, processing it in its own plants, and marketing it. The Board lasted 3 years, during which time its operations were the subject of continual controversy.²⁸⁴ Fishery workers disliked its compulsory features and were dissatisfied with the prices it paid them. Government critics opposed it as a particularly pernicious example of heavy-handed socialist intervention in the province's economy. Even government supporters were divided over its purposes, pricing policies, and the issue of centralized as opposed to participatory decision making.

In 1949 the Fish Board was replaced by a second type of marketing agency, the Saskatchewan Fish Marketing Service, the purpose of which was "to transform the company from a buying and selling agency to a marketing service."²⁸⁵ If a majority of local fishermen elected to do so, the Service would purchase their catch at an advance price, process and market it, and at the end of each season return any net proceeds to individual producers on the basis of their output. Under this approach, a Crown corporation was the marketing agency, and the province encouraged the formation of local fishermen's co-operatives, a number of which were established at northern centres during the 1950s.

Despite considerable economic success, the Fish Marketing Service was criticized, like its predecessor, for its "paternalism" and alleged failure to involve those it served in its decision-making processes. To meet this complaint the government in 1959 adopted a policy of transforming the Fish Marketing Service from a Crown corporation into a central co-operative form of organization called "Co-operative Fisheries Limited." Initially the new "co-operative" was run by a governmentappointed board of directors and was only partly owned by local fishermen's co-operatives. Provision was made, however, for ownership and control to pass eventually to the member associations as the capital of the central agency was acquired by them.

Buckley's evaluation of the benefits of this overall policy as it had developed to the early 1960s is generally favourable, but realistically concludes with the observation that "Co-operative marketing cannot accomplish miracles for an industry which has too many workers, most of them with too little equipment."²⁸⁶ As a source of employment and income for a rapidly growing population, she noted that in the absence of a *general* policy of northern development, this industry could not supply an adequate living even for the number of persons already engaged in it.²⁸⁷

This outlook has not changed significantly in the past decade. A 1971 study of commercial fishing in northern Saskatchewan concludes that while the importance of the industry increased during the 1960s, it remained a seasonal and, for most, an unreliable source of income. As a source of employment, it remained second to trapping. The situation in other provinces, despite differences in public policy, has been similar. In Alberta in the late 1950s, of about 1 000 persons who were engaged in fishing in the northern part of the province (north of 55°), only about 120 were Indian and Métis residents of the area, about twice that number were other residents, and the remainder were transient fishermen. Five commercial firms bought virtually the entire catch in the area.²⁸⁸ In Manitoba, the Committee on Manitoba's Economic Future reported in 1963 that:

"There is room for great improvement in planning, organization, marketing, and production techniques in the utilization of fur and fish, [but noted that] while such improvements can be expected to yield larger total returns to the Indians and Métis [they] will not result in a sufficient expansion in production to aid many more people in total. As production becomes more efficient, and more capital intensive, for example in commercial fishing, a smaller number will be employed but these will earn a much increased income. Consequently, these traditional industries cannot be expected to expand quickly enough to absorb the present underemployment plus the increase in a rapidly growing labour force.²⁸⁹

If anything, even these prospects for the industry were exaggerated in view of the disastrous effects of industrial development, notably hydroelectric power and mineral processing developments, on the inland fisheries of Canada. The effect of dams and river diversions, while not yet reliably assessed, are illustrated by the apparent deterioration of the fisheries affected by the Bennett Dam in the Peace River area. Even more startling, however, has been the effect of mercury pollution on large parts of the inland waterways of the north, which in the early 1970s brought commercial fishing in most of Saskatchewan, Manitoba and Ontario to a complete halt. In 1970 Lake Winnipeg, the Winnipeg River watershed, the Saskatchewan River watershed, some lakes on the Nelson River system and many lakes in northern Ontario were closed to fishing because of mercury contamination.

This unexpected development created a major set-back for new measures being introduced by the federal government, in collaboration with several of the provinces, to deal with the marketing problems of the industry in the late 1960s.

The marketing problems of the fisheries in much of northern Canada (Figure II.4) were brought under a measure of federal control in 1969 through establishment of the Freshwater Fish Marketing Corporation. The Freshwater Fish Marketing Act of that year established the corporation for the purpose of marketing and trading in fish, fish products, and by-products, and gave the Corporation the exclusive right to market the products of the commercial fishery of participating provinces.²⁹⁰ The object of the Corporation was to market fish in an orderly manner, increase returns to fishermen, promote markets, and increase interprovincial and export trade.²⁹¹ The NWT, Saskatchewan, Manitoba, and northwestern Ontario participated in the program.

The Corporation operates by purchasing the catch of all fishermen in these areas through agents who are also responsible for extending financial aid to fishermen, grading, and making initial payments for the catch and shipping the product in accordance with orders from the corporation.

Although required to be self-supporting in its operations, the Corporation found itself faced with a loss of 1.3 million in its 1971 operations due to having set too high an initial price. Its policy in the latter respect has been to set initial prices as high as possible to provide an incentive to fishermen and to put as much cash as possible into their hands during the fishing season when it is most needed.

The Corporation is run by a board of directors which includes an assistant deputy minister of the Department of Indian and Northern Affairs (DINA) and several provincial government officials. It is assisted by an advisory committee made up mainly of fishermen or their representatives.

Much of the Corporation's work has entailed improving plant for processing inland fish products. The largest project in the north has been a plant at Hay River. The cost of this facility exceeded the financial capabilities of the corporation in 1972 and it proved necessary for the territorial government and DINA to provide a grant of \$1 million to complete the project on the grounds that it "was essential to the economy of the region."²⁹²

The mercury pollution problems of the early 1970s resulted in heavy direct losses, and also discouraged participation in the industry in general. The Corporation reported that "the uncertainty created by mercury pollution had a depressing effect on the fishermen's attitudes about the future of the fishery and many abandoned its pursuit."²⁹³

Dissatisfaction with the Corporation's buying prices led to a strike on Great Slave Lake in 1974. Operators of even the large four-person boats complained that at prevailing prices, even a good haul of \$75 000 per boat would barely cover operating expenses. They pointed out that most of the active fishermen in the industry were older, evidence of the declining attractiveness of the fishery as a source of employment.²⁹⁴

The Tourist Industry

Another local industry which, like trapping and fishing, has provided some income and employment to the native population of the north has been tourism. Travel, sports fishing, and hunting have all been promoted by government through investments in transportation facilities, conservation policies, financial and other aids to local entrepreneurs, and the familiar advertising campaigns of provincial and territorial tourist agencies. Many of the public investments that have promoted tourism in the north have been motivated by other considerations, with "tourism and other recreational benefits" being considered incidental to the case made for such investments on behalf of the major staple industries. Thus, many northern railways, highways, and airfields built for other reasons have opened up wilderness areas to travellers. Similarly, conservation measures, such as the setting aside of public parks, game preserves, and programs of wildlife protection and restoration have also yielded incidental benefits to the tourist industries of the north.

Important as such measures have been, most of the government policies intended to stimulate this industry stem from post-war concern over native income and employment opportunities. There can scarcely have been a study of northern regions in this country since the war whic., has not held out hopes for native employment in this industry as an alternative to trapping and fishing. The importance of tourism as a source of native employment has been exaggerated. Big game hunting and sport fishing as sources of income in the north share many of the shortcomings of trapping and fishing. The entrepreneurial skills, the capital, and the marketing facilities needed are much the same and are not readily accessible to most native northerners. The instability and uncertainty of the industry is similarly high due to its sensitivity to fluctuations in consumer tastes and incomes and to environmental conditions which are difficult to predict and virtually impossible to control. In most parts of the north there are a relatively small number of full-time outfitters, and hunting and fishing camp operators: they are seldom native: and they usually employ native people only on a temporary, often casual basis. The number of native people who are qualified "professional" guides and who derive most of their living from such employment remains extremely small.

Incentive Programs

Tourism and some other local industries in the north have benefited from provincial and territorial programs to aid small businesses. Since the end of World War II virtually all the provinces and territories have adopted incentive programs of one kind or another aimed at promoting private (or in some cases, co-operative) enterprise within their jurisdictions. The principal purpose of these programs has been to attract business to the jurisdiction. There is little evidence of any of the provinces or territories having a regional development policy, except perhaps for some weak attempts to slow down the growth of metropolitan centres relative to their hinterlands. Despite the declarations of elected politicians to the contrary, there is no evidence of a systematic northern development policy in any of the provinces, although all the provinces have had policies for which such effects could be claimed. By this we mean that none of the provinces have pursued policies which deliberately diverted growth and development from their "south" to their "north." By aiding businesses which could only locate in the north, however, for reasons of access to land resources for example, a number of provinces have promoted northern economic growth through their industrial and commercial development incentives. The same has also been true of a number of federal incentive programs, the purpose of which has been to attract business enterprise to Canada as a whole. Such programs have made use of tax and royalty concessions and a wide range of subsidy and subsidy-effect measures including low interest or forgivable loans, grants, low cost industrial sites, special utility rates, direct assistance for construction or improvement of plants, public provision of transportation facilities, community services, marketing assistance, and so on. The terms upon which such benefits are available to businesses are usually spelled out in general legislation or in the regulations of the departments or agencies administering them.

Apart from general tax concessions to firms in the resource industries, most of the incentive programs are aimed at encouraging manufacturing. Several are designed to promote private investment in tourist facilities. Of the few which appear designed to discriminate in favour of *northern* enterprises, perhaps the best examples would be the federal Northern Mineral Exploration Assistance Program, which provided grants of up to 40 per cent of approved exploration program expenditures of Canadian companies undertaking exploration in the Yukon or NWT; Saskatchewan's similar "Precambrian Incentive Program" (1964); and Ontario's "Northern Development Corporation" established in 1970 "to provide financial and advisory services to business in order to stimulate industrial growth, economic development and employment opportunities in the North."

In addition to such programs, governments have also made special concessions on an *ad hoc* basis to specific firms. These have often been "big" deals which in their impact on resource allocation have probably eclipsed many of the regular incentive programs. Their significance, from a development or growth standpoint is difficult to assess – in part because many of the actual terms of such arrangements have been kept secret, but also because the overall policy objectives which they presumably seek to attain are seldom coherently articulated by those responsible for initiating them. The classic examples to date are the prairie provinces' pulp and paper mills, particularly those of Saskatchewan at Prince Albert and (now apparently aborted) at Meadow Lake, and Manitoba's forest products complex at The Pas. All of these projects entailed large-scale concessions to private firms and a degree of govern-

ment involvement in their financing and organization which made the distinction between "private" and "public" elements in their nature largely irrelevant.²⁹⁵ More significant for our purposes, however, is the absence of any comprehensible logic for such a degree of public commitment to such projects, unless one accepts the explanation that they were prompted by the expectation of some impact on either the local or provincial economies not warranted by any known historical precedents. The policy processes involved and the problems of assessing the "rationality" of such measures is considered in section "The Political Process in Northern Development".

The Service Economy of the North

Since World War II the Canadian economy as a whole has been undergoing transformation from a goods-producing to a predominantly service-producing system. This is shown in the growth of the tertiary (services) sector relative to the primary (resource-based) and the secondary (construction and manufacturing) sectors. One element in this relative growth of the service sector has been the increased production of health, education, and welfare services. A growing proportion of the country's productive capacity has been devoted to the production of medical services, education, and welfare benefits. At the same time there has been a pronounced shift from private to public financing for such services, with a corresponding shift from private to public responsibility for the organization of their production and distribution.

The impact of these changes on the traditional economy of the north in the post-war decades was extraordinary. In much of the rest of Canada, public provision of an increasing *per capita* output of health, education, and welfare services impinged upon an industrialized society. In the north, it impinged upon a predominantly pre-industrial society. The result was a sharp increase in birth rates, a reduction in mortality, and a rate of natural increase which soon approached the highest levels in recorded experience.

Because of the dual economy situation in the north, the inevitable employment problem created by this population explosion could not be resolved by the expansion of primary industries, and it could be only temporarily alleviated by the construction booms associated with postwar military projects such as the radar fences, and the transportation and power projects.

Such a regional imbalance of employment opportunities and population growth was not without precedent. The "market solution" to such a disequilibrium situation has been a mass emigration of surplus labour to areas of higher opportunity, a process which has operated in the prairie west. But the situation in the north was not amenable to such a solution because of the coincidence of cultural and economic conditions which made it no more likely that native northerners could move into the industrialized south than that they could move into the nuclei of southern industrialism located within the north. The remaining alternative was employment in the traditional trapping, hunting, fishing economy of the north or reliance on income transfers through the welfare system. Given the limited capacity of the traditional economy to absorb more workers without reducing already low returns per worker, the welfare component of northern incomes has become relatively high. The same has happened elsewhere in Canada, of course, where poverty and the unavailability of acceptable employment have coincided, but in the north, because the condition is so prevalent, it is more visible than in the south. Thus, while the total problem in the south may be quantitatively more serious than it is in the north, it has become difficult not to think of the north as being characterized by that large part of its population caught in the welfare trap.

One of the anomalies of a service economy is that supply appears to increase demand. Where a population is poor this is partly due to the population effect foreseen by Malthus. Eventually, however, a high rate of natural increase must decrease, although the expanded population base may prolong the growth period. But even without a population effect, increasing health, education and welfare services seems to create an increased per capita demand for such services. When such services are supplied through government, both supply and demand consequently come under the control of public policy. While the market may still be used as a mechanism for distributing some services, it ceases to be a device for actually arriving at the allocative or distributional choices which society must make.

Where substantial income is transferred among residents of different regions, and members of different occupational groups, as is the case in the service sector, decisions about such transfers are fundamentally political. And when the service sector becomes the largest part of the economy, as measured in terms of employment and income, and the chief source of *new* employment and income opportunities, as has become the case in the Canadian north today, most economic issues become political issues.

Statistical data for the Canadian north are not well enough developed to permit direct quantification of the basic structural changes in the economy and population described above. Such data as do exist enable us only to indicate the direction and some of the general dimensions of these changes.

Structure of Industry in the North

The expansion of the service sector and the related, but not precisely parallel growth of the public sector of the northern economy are reflected in statistics of income by source for northern residents. Recent data are available for the federal but not the provincial north. The federal data are not easily interpreted because of the definitions employed. For example, the statistics for the NWT permits us to assess the relative importance of the public and private sectors as sources of income for residents of the NWT only imperfectly because wages and salaries paid by Crown corporations are included with wages and salaries paid by private firms. Even without allowing for this element, however, the data in Table II.1 demonstrate how the public sector has become a more important source of cash income for NWT residents than the private sector.

In 1968–69, approximately 49 per cent of the cash income received by residents of the NWT was derived from government (and some

	1968–69	197071
Public sector income		
Wages and salaries from government		
and institutions	19 342 001	39 431 584
Transfer payments	3 250 979	4 088 324
Total	22 592 980	43 519 908
Commercial sources		
Wages and salaries (including		
Crown corporation)	21 834 599	30 019 616
Hunting and trapping	826 523	1 112 562
Unincorporated business	693 000	1 193 000
Investment income	263 000	693 000
Total	23 617 122	33 018 178
Total personal income	46 210 102	76 538 086

Table II.1 – Personal Income, NWT

Source: DINA, Statistical Abstract of the Northwest Territories, 1973, Table 44, p. 67.

other institutional) employment and about 51 per cent from commercial firms and Crown corporations, from hunting and trapping, and from business activity. By 1970–71, the latter had fallen to about 43 per cent of the total, with government sources providing at least 57 per cent. The growth of public sector incomes in this period was not due to an increase in "welfare" incomes, but rather to an increase in income earned from public employers. Transfer payments in 1968–69 accounted for 14.4 per cent of income from government sources, but in 1970–71 for only 9.4 per cent.

Comparable income data are not available for the provincial north, but census data of employment may be used to identify similar structural shifts among the primary, secondary, and tertiary sectors there. The data presented in Table II.2 indicate the main trends in four representative northern census divisions during the 1950s. The general trend in all four divisions was for the proportion of employment provided by the tertiary sector to increase; for the secondary industries to decrease; and for the primary industries to decrease markedly.

These same patterns have been identified in a number of studies of other regions and specific communities in the north. A Vancouver Board of Trade study, "Report on Northern British Columbia: Resource Development," shows that in 1951–61, the proportion of the labour force employed in primary industries in northern B.C. declined from 28 to 17 per cent. This trend was apparent even in areas of extensive new resource development. The change was not attributable to increased local processing of northern products, for the percentage of the labour force engaged in manufacturing also actually declined slightly. As elsewhere, it must be attributed to a relatively more rapid growth of employment in the tertiary sector. The tertiary was found to be the most rapidly growing sector – providing about one-third of all the jobs in the north in 1951 and one-half by 1961.

Studies of individual northern communities also underline the importance of the service sector as an element in the contemporary northern economy. A recent study of the Fort Chipewyan area in

Industry	Abitibia				Kenora ^b				Manitoba				Saskatchewan			
	1951		1961		1951		1961		1951		1961		1951		1961	
Primary	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	7 626		3 026		412		238		1 911		150		743		546	
Forestry	2 370		3 059		1 835		1 321		328		331		74		223	
Fishing & trapping	458		110		125		599		898		815		1 306		1 053	
Mining	5 132		6 812		1 474		1 587		3 189		4 279		598		1 513	
Total Primary	15 586	57.9	13 007	44.9	3 846	29.1	3 745	22.4	6 326	49.0	5 575	38.1	2 7 2 1	69.1	3 335	60.7
Secondary																
Manufacturing	2 299		1 805		2 462		2 779		997		623		170		76	
Construction	1 595		1 644		873		854		632		1 175		161		141	
Total Secondary	3 894	14.5	3 449	11.9	3 3 3 5	25.2	3 6 3 3	21.8	1 629	12.6	1 798	12.3	331	8.4	217	4.0
Tertiary																
Transport and																
Communication	1 3 4 9		2 275		1 890		2 629		997		1 636		61		331	
Utilities	169				199				36				60			
Trade	2 060		3 150		1 262		1 856		1 033		1 194		203		445	
Finance	248		396		128		228		89		133		6		32	
Service	3 621		5 007		2 572		3 970		2 808		2 509		555		919	
Public Admin. and																
Defence			1 689				642		_		1 769				211	
Total Tertiary	7 447	27.6	12 517	43.2	6 051	45.7	9 325	55.7	4 963	38.4	7 241	49.6	885	22.5	1 938	29.3
Total	26 927	100.0	28 973	100.0	13 232	100.0	16 703	100.0	12 918	100.0	14 614	100.0	3 937	100.0	5 490	100.0

Table II.2 – Employment of the Labour Force by Industry Sector for Four Northern Census Divisions, 1951–1961

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northern Alberta, for example, estimated the structure of employment there as shown in Table II.3.

	Number of Work Months	% of total
Primary industries		
Fur	270	
Handicrafts	_	
Commercial fishing	25	
Forestry	376	
Mining	37	
Regional resource-based	12	
Agriculture	_	
Total	720	54.8
Secondary industries		
Construction	12	
Government works	12	
Manufacturing	—	
Total	24	1.8
Tertiary industries		
Fed. and Provincial Governments	213	
Local Government	6	
Tourism		
Local services and businesses	290	
Local organizations	62	
Total	571	43.4
Total employment	1 315	100.0

Table II.3 -	Structure	of	Employment	in	the	Fort	Chipewyan	Area	of	Northern
Alberta										

Source: Moncrieff, Montgomery and Associates, "A Socio-Economic Study of Fort Chipewyan and the Peace-Athabaska Delta Region" Peace Athabaska Delta Project, Edmonton, 1971, Supporting Studies, vol. 3, p. B.135.

Demographic Trends

The impact of the improved conditions of life in the north since World War II, part of the result of increased public investment, may be inferred from the vital statistics for the area, although again, serious problems arise in using these data in their published form. A particular difficulty lies in the failure of these data to separate the truly resident population of the north from the large transient part of the population which does not remain long enough to be subject to the underlying conditions of life which prevail in the region. To the extent that these temporary residents have tended to be young, white males, born nutured, and educated in the south, their presence distorts the vital rates of births, deaths, and natural increase in the north by increasing the size of the population recorded in the decennial census. The effect is to reduce all the rates to levels below those which would accurately reflect the conditions of northern life on fertility and mortality. This influence is also likely to be uneven over time, for a sudden surge of resource development in a particular area will almost instantly not only increase the population, but alter its age and sex distributions. Because of this, crude birth and death rates for the northern areas of Canada may not be particularly useful indicators of conditions of life there except in places where there have been few developments of the kind which attract white migrants from the south.

The data shown in Tables II.4 and II.5 should be interpreted with these reservations in mind. Even so, the broad trends are evident: a strong rise in the birthrate, peaking in 1961, but in 1971 remaining far higher than the national average; a decline in the death rate in most areas indicated, falling to levels even lower than the national average; and a consequent rate of natural increase rising to levels far in excess of the national average.

 Table II.4 – Birth Rate, Death Rate, and Rate of Natural Increase in selected

 Northern Areas, 1931–71

Year	Y.T.	NWT	Abitibi	Kenora	Man.	Sask.	Can.
Birth R	ate						
1931	10.4	46.1	38.4	17.9	23.9	31.6	23.2
1941	14.4	26.3	37.3	16.8	31.5	27.7	22.4
1951	38.0	40.6	40.6	29.8	38.4	41.1	27.2
1961	38.1	48.6	34.7	33.5	40.2	45.9	26.1
1971	27.5	37.0	18.1	24.3	36.9	37.1	16.8
Death I	Rate						
1931	14.7	28.8	8.9	7.0	8.4	12.4	10.2
1941	13.4	25.6	5.5	7.1	10.9	10.4	10.1
1951	9.4	17.8	7.3	10.9	9.1	12.5	9.0
1961	6.4	11.4	5.0	7.4	6.6	7.7	7.7
1971	5.7	6.6	5.3	8.0	5.9	5.7	7.3
Rate of	Natural I	ncrease					
1931	-4.3	7.8	29.4	10.9	15.4	19.2	13.0
1941	1.0	0.8	31.8	9.7	20.7	17.3	12.3
1951	28.6	22.8	20.5	18.9	29.2	28.6	18.2
1961	31.7	37.2	29.6	26.1	33.5	38.3	18.4
1971	21.8	30.4	12.7	16.2	31.1	31.4	9.5

Source: Canada, Vital Statistics, 1931, 1941, 1951, 1961, 1971.

All figures show the rate per thousand of population recorded in the census of the appropriate year.

Of all the vital rates, the infant mortality rate is least affected by the influences of migration noted above, for it relates infant deaths under one year of age to the number of live births recorded in the area concerned. It also has the merit of being used internationally as an indicator of health and medical standards. Its main weakness is its sensitivity to reporting practices which, certainly in the case of remote areas like northern Canada, have varied considerably over time. These may explain the apparent anomaly of very low infant mortality in the Yukon and in northern Saskatchewan in 1931 compared to the Canadian average. But apart from such reporting problems, Table II.5 supports the expectation that with improved health and medical standards in these northern areas, infant mortality declined dramatically from the extraordinary levels of the 1940s to levels in 1971 which, while still high compared to rates in southern Canada, are no longer among the highest in the world.

Table II.5 – Infant Mortality Rate in selected Northern Areas, 1931–71

Year	Y .T.	NWT	Abitibi	Kenora	Man.	Sask.	Can.
1931	75.0	113.5	108.9	68.8	114.8	93.1	86.0
1941	83.3	208.9	70.1	46.3	113.1	153.6	61.1
1951	55.6	107.9	63.1	68.6	72.4	107.9	38.5
1961	41.2	111.0	47.1	41.7	48.6	70.9	27.2
1971	25.7	49.0	18.1	30.2	26.6	44.3	17.5

Source: Canada, Vital Statistics, 1931, 1941, 1951, 1961, 1971. Figures show number of infant deaths under one year of age per 1 000 live births.

Local Government in the North: Metropolitan — Hinterland Relations

The Canadian political system has historically shown a tendency to centralize decision-making power, as evidenced by the dominance of the executive over the legislative branches at the federal and provincial levels, and the relative weakness of local government institutions. Geographically, political decision-making power has been concentrated in a few major administrative centres, corresponding for the most part to the centres of financial power. Thus, Canadian economic history reflects the political and economic aspirations of the business communities of Quebec, Montreal, and Toronto to control the economic life of western Canada. Most of the provincial economies in turn reveal a strong system of metropolitan – hinterland control, with the metropolis typically in the south and the hinterland spreading out to the north.

With the growth of population in the north since World War II, it would be reasonable to expect a strengthening of local government institutions in northern communities and an increasing voice for northern residents in both provincial and federal politics.

In view of the role traditionally assigned to Canadian municipal institutions – essentially responsibility for such "housekeeping functions" as operating public health and hospital services, education, licensing of business, etc. – local government has not been seen as an important factor in the development of new industries or in the opening up of new regions. And even the functions that local governments have performed have been ultimately subject to provincial government policy, given the constitutional inferiority of local institutions.

In the north, the role of local government has been even weaker than in the rest of Canada. Most of the north has never been organized into local government units, any municipal functions required being provided through some more or less appropriate department of the provincial government. The municipal governments that have developed in the north are confined mainly to centres of population, based, in most cases, upon a particular industry such as mining, forestry, or, in a few instances, transportation or hydroelectric power. Even many of these centres have been slow to establish municipal institutions because they were entirely, or in part, built and operated as company developed townsites. Since World War II, governments have often been involved in establishing new northern communities, attempting to ensure a higher standard, not only of physical townsite planning but of citizen participation in the operation of community institutions. A number of these planned communities have been mentioned elsewhere in this paper, notably Elliot Lake in Ontario; Labrador City and Gagnon in Quebec; Thompson and more recently Leaf Rapids in Manitoba; Uranium City in Saskatchewan; Grande Cache in Alberta; MacKenzie in B.C.; and Inuvik in NWT. Many of these have been provided with innovative local financing and policy-making structures. Their chief failure, to date, lies in their apparent inability to integrate the native population attracted to such centres into the processes of community management. Planned or unplanned, nearly every major centre in northern Canada has its fringe community of Indian, Métis or Inuit people as a visible manifestation of

the dual economy of the north and its associated social and political consequences. "The old way of life has been destroyed however and the native peoples have concentrated increasingly into the settlements, all too often to find themselves relegated to the lowest social stratum. Some post-war planned communities in the North have sought to provide for a native presence (e.g. Inuvik), others (e.g. Uranium City) have not, but none has really solved the problem."²⁹⁶

Another shortcoming of local government in the north – and it is difficult to judge whether it is a cause or an effect – is the typically high mobility of the white labour force attracted to resource industries in the area. Single industry towns on the resource frontier have typically attracted mobile, often single, male workers who remain in the area for only a season or two, if that long, and whose interest in the development of the community itself is negligible. Many of the newer planned communities have been designed to attract "family men," complete with dependents and house equity, who presumably must be expected to display a different degree of commitment to the community. How effective this is has yet to be determined and the unhappy experience of planned communities that went wrong, such as Elliot Lake, reveals some of the risks involved. Some current thinking appears to be reconsidering the advantages of temporary as opposed to permanent settlements in situations where diversification of the site's economic base appears unlikely.

Orthodox forms of municipal government have been supplemented and in some jurisdictions replaced by new types of community and subprovincial organization in recent years. The special problems of native communities, particularly in the federal north, have given rise to settlement councils and to special bodies representing native groups – some, such as "band councils" officially sanctioned, others being voluntary associations. In the provincial north, the most important developments have involved some form of regional government, usually related in some way to regional economic planning exercises.

Apart from the new "industrial" settlements of the north with their predominantly white population which has expected at least some nominal form of municipal government, the more numerous small native settlements were traditionally "governed" by a local elite comprising agents of large outside organizations – fur trading company, churches, and, eventually provincial and federal government departments. One extensively studied community, Cumberland House in northeastern Saskatchewan, may be considered representative of the general pattern. Kew, in his 1960 study of this community, suggested that the local power structure directly reflected the relative weakness of the Indian and Métis economic position, a position that was only slightly enhanced by the somewhat unusual success of local trapping and fishing organizations in this particular community. The major sources of economic power in the community, he wrote, "are derived from outside the area completely."

"The Whites are representatives or agents of large organizations – the Hudson's Bay Company, the Provincial Government, the Federal Government, the Churches. All of these derive their power from political and/or economic control in the "outside" world. As long as the economic resources of the Cumberland House area are so inadequate in relation to its population, this imbalance between the power of the agent or "outside" interests and the power of the indigenous people will continue to exist. The degree of equitable distribution, and democratic control, of the locally-produced wealth will not materially alter this imbalance when so little wealth is produced locally."

"The chronic state of indebtedness of trappers is a constant symbol of the economic superiority of the "outside." Indebtedness to the stores and dependence on the services of government and church agencies are the heritage of the Métis-Indian population."²⁹⁷

Five years later, a study of the same community found that while nearly all the individuals comprising the administrative elite had been replaced by newcomers, the power structure remained much as before, except perhaps for a proliferation of government agents.

"The power rests mainly with government, the churches and the commercial establishments. Government is represented by the employees of the Departments of Natural Resources, Education, Health and Welfare, Agriculture and the Royal Canadian Mounted Police who reside in the community as well as the many cfficials of these and other Government agencies who are frequent visitors. The churches active in the area are the Roman Catholic, Anglican and Northern Canada Evangelical Mission. The commercial establishments are primarily the Hudson's Bay Company, the Co-operative Store, Cumberland Lodge and the poolroom."²⁹⁸

Some signs of change were recorded in the latter study, however, in that as an outgrowth of the trapper's organization in the area, an *ad hoc* community council had begun to function. The latter showed a potential for developing into an instrument of local control over some aspects of the community's activities.²⁹⁹

Whether such spontaneous organization can be seen as the beginnings of a process which will lead to the establishment of orthodox representative forms of local government or to something else is at this time uncertain. In some communities there are indications that a variety of organizations representing specific ethnic or other interest groups are emerging as a countervailing power to the growing force of government bureaucrats in the community.

A recent study of another community in the subarctic, Fort Chipewyan, found that at least 24 departments, agencies and branches of either the federal or Alberta governments were carrying on programmes in the community. The same study reports that a rudimentary form of local government, a "Local Advisory Committee," had been established by the provincial Department of Municipal Affairs. The elected committee consisted of a chairman and seven councillors. Its functions were almost entirely consultative. The study found that the development of this committee had been hampered "by much misunderstanding on the part of a large portion of the local population as to what the true purpose of the Local Advisory Committee is."³⁰⁰

The study dealt with the Local Advisory Committee under the heading "Local Organizations", which also included the Cree and Chipewyan Bands which have combined their administrative activities, employ common staff, and which in addition to welfare administration, economic and community welfare projects, and so on, perform "semipolitical functions" in terms of their relationships with the Alberta Indian Association; and the Fort Chipewyan local of the Métis Association of Alberta, mainly concerned at the time with the affairs of the Athabaska Fishermen's Co-operative, which was made up largely of Métis members.³⁰¹

In the smaller arctic settlements, many of the same general patterns have prevailed, but often in an exaggerated form. Although some of the settlements, such as those along the Labrador-Ungava coast, have a long history, the recent conversion of the Inuit from a largely migratory to a settlement style of life, has created a new situation in that area. By 1970 Williamson reports, little more than 2 per cent were living the whole year in the hunting camps.

This situation led the federal authorities to establish administrative officers in these settlements and so-called "Eskimo Councils" through which government officials could communicate with the people. By the early 1960s most of the councils had become elected bodies and by the early 1970s all the Inuit communities had elected settlement councils. Williamson describes the situation in the following terms:

"Every settlement now has a Settlement Council which is formally elected, and though the majority of the membership is generally Eskimo, white residents are eligible for election and some are occasionally elected. Usually the whites that are elected are residents of some number of years in the settlement. As the Eskimo make up the bulk of the electorate, it is normally their judgement which permits the appearance of white people on settlement councils, and they normally take some time before investing their confidence in the southerner. This is one reason why the Whites on such councils are rarely government officials, because so far it has been very rare for such people to stay more than two years. Missionaries and traders and other independent individuals tend to be the Whites who are selected. There is, moreover, a general feeling that civil servants should not become actively involved in politics and indeed, for them, this is a matter of regulation. Never the less though the Eskimo are invariably numerically the greater in these councils, and the deliberations are generally in the Eskimo language, with translation into English being provided for the benefits of the Whites - it is the Whites who tend to dominate the deliberative bodies upon which they appear. Thus, even though the opportunity for indigenous initiative and selfdetermination is apparently now available with these new structures, the exteriorization of decision-making continues to some extent. It is very rare that the Whites are able to make their judgements in anything but their own cultural context, and thus their presence on the councils tends to reinforce the general process of recasting Arctic life in a southern, urban, middle-class mold."302

As with the Indian and Métis communities of the subarctic, however, the Inuit communities are evolving other types of organizations at the community level as well. Notable are the Inuit co-operative societies, such as those formed with government initiative and support for the production of stone carvings, other art work, and fur garments. Williamson notes that these may be related to the evolution of settlement councils in that the most successful councils are found in the communities which have also established successful co-operative associations.³⁰³

Although it appears to be the expectation of the NWT government that the settlement councils will gradually develop into bodies which can be assigned the functions performed by municipal governments elsewhere in Canada (i.e., once they have reached the stage where the settlements can be given the status of an incorporated body such as a town or hamlet), this presupposes a great deal of success in breaking down the still very strong tendency for the native majority to defer to a white minority in matters of government, or to simply withdraw from the process altogether. As the mining and petroleum industries push into even such remote areas as northern Baffin Island and as the growth rate of the native population tapers off, it is not unreasonable to expect a repetition of the pattern of local power relations seen earlier in the subarctic. If this happens, it is possible that other forms of political activity may predominate at the local level in the far north, forms in which the native-white duality is perpetuated, with conventional local government being the vehicle for the local political aspirations of the whites, and other associations, such as locals of native brotherhoods or native co-operative associations, the vehicles for the native people. Historically the attempt to use conventional "British" representative institutions to govern a community split into two such distinct economic and cultural factions has not provided much ground for optimism.

Local government in the north and the metropolitan – hinterland relationship have been influenced in recent years by the attempt of several provinces to establish systems of regional government. In B.C. and Ontario this has involved establishing new political units over the whole province either to supplement or to absorb any existing units of local government. Elsewhere, for example in the Prairie Provinces, there have been much more modest programs to strengthen the voice of residents in the "unorganized" northern areas either through decentralizing provincial administrative offices or by setting up northern advisory councils.

All of these measures were in some way related to the new interest in regional economic development policy in the 1950s and 1960s and the growing acceptance of "planning" as an alternative to spontaneous, presumably market controlled, economic growth and development.

In B.C. and Ontario, the "northern development" aspects of regional government was incidental to the interest in the province-wide application of the new approach and probably secondary to concern over the specific problems of local government in the southern metropolitan areas.

The B.C. system of regional government was formally initiated in 1965. An amendment to the province's Municipal Act in that year provided for the establishment of regional districts which would supply a variety of services in 28 subdivisions of the province. Many of these corresponded to existing hospital districts and this was one of the first functions of local government they assumed. They have subsequently taken on some 36 functions relating to such things as water resource management, roads, waste disposal, industrial development, and so on. Each regional district is under the direction of a board made up of representatives from both municipal and unincorporated areas of the region. Each district has a technical planning committee on which are represented most of the provincial and federal departments or agencies active in the district.

Although the provincial government contended that it was not establishing another tier of government by setting up these districts, it has been noted that: "it is difficult to argue that in actual fact they do not operate as a fourth level of government. They pass by-laws, they requisition funds (an indirect form of taxation), and they assist in the financing of certain selected services in all or portions of the region. All of these activities are directed by elected representatives and implemented by administrative staff."³⁰⁴

While the regional districts of B.C. may be viewed primarily as political-administrative units, they could emerge as the basic units for planning economic development as well. Despite the publication of several economic studies of the northern regional districts, it is not clear at the moment whether there will be any real decentralization of economic decision making from Victoria to the districts themselves. The recent development programs worked out between the province and DREE have made slight provision for effective local participation in the planning exercises at any level.

The Ontario government's approach to regionalization has been evolving over at least 10 years. During part of this period a distinction was made between the reform of existing local government by introducing larger "regional" units of government and the establishing of a system of regional development structures. It was not until 1973 that the government formally acknowledged the need to combine these two elements: its policy statement, trendily entitled *Design for Development: Phase Three* established the province's intention of replacing the 10 provincial planning regions it had created in 1954 with five new regions, two of which encompassed the north – the North Eastern Region and the North Western Region. The province's planning for economic development was to be worked out with participation by local government in the five regions.

Some observers have noted, however, that recent trends in the province suggest a diminution of local government effectiveness as a decision-making force and a reassertion of direct control by the province.³⁰⁵ Whether this is so in the case of the largely unorganized northern parts of the province or not cannot yet be assessed. An elaborate planning exercise is currently under way in both the North Eastern and North Western regions by which development goals are being established and policy measures articulated. In the meantime measures to extend conventional municipal government organization into the northern parts of the province have also recently been introduced. The new "Northern Communities Act" would allow some 20 small communities in the north to elect councils which could assume jurisdiction over the usual municipal functions of providing sewer and water services, garbage collection, regulation of trailer and tourist camps, and fire protection.³⁰⁶
The Political Process in Northern Development

Any attempt to analyze the political process by which northern growth and development policies have been determined is complicated in the Canadian case by the number of jurisdictions involved – municipal, regional, provincial, and federal. In order to proceed, we must make some simplifying assumptions. One of these is that the major policy decisions affecting the north have been related to the use of northern natural resources; the provision of social overhead capital in the form of transportation and power facilities; and the treatment of the indigenous population. In these three major policy areas, local and territorial levels of government have not played an important role. This leaves us with the provincial and federal levels. As the historical survey shows, it is difficult to disentangle the roles of these two levels of government with respect to any of the three major policy areas indicated. We have seen that resource-use policies throughout much of the north were a direct federal responsibility until the 1930s, but even before then in B.C., Ontario, and Quebec, as in all the provinces since provincial policy toward resources has been constrained by federal jurisdiction over foreign trade, interprovincial and international water resources, and certain taxation policies. (In the special case of the NWT and Yukon, the *de facto* government has always been a federal department or branch whose resource-use policies, while consistent with the federal constraints mentioned, cannot be taken as being necessarily indicative of federal resource-use policies per se.) Similarly, with respect to the provision of infrastructure capital, we have seen that some of this has been initiated and financed provincially, some of it federally. The record is such that no clear criteria can be inferred to show why some projects were provincial and others federal. And finally, with respect to the treatment of native people, we again find an intermixing of federal and provincial policies and programs, with the federal government being clearly responsible for the Indians and Inuit, but often farming out some of these responsibilities; and the latter being responsible for Métis, but relying heavily on federal support to finance this as well as other provincial social programs.

The foregoing may now be translated into the notion of "the public interest" as it pertains to the north. By eliminating local government as an effective force in the policy-making process we eliminate as a matter of plausible historical fact, and not necessarily as a prescription of what "should be" - the public interest as conceived by residents of the north. We are left with the public interest as conceived in the federal context and the public interest as conceived in the provincial context. (We will for the moment consider the territorial governments as being closer to local governments in policy effectiveness than to provincial, thereby eliminating a territorial public interest from the model.) The ambiguities which exist in our federal system with respect to functions are reflected when we try to separate the provincial and federal conceptions of the public interest. The long history of disputes between provincial governments (especially those of B.C. and the Prairie Provinces) and the federal authority over resources policies, transportation policies, and policies toward native people stems from this ambiguity. These disputes can be used to illumine what we Canadians have conventionally understood by the phrase, "the public interest."

The Input Model

Generations of political philosophers have struggled to define the public interest and to show how it may be "found" or revealed.³⁰⁷ The meta-physical aura surrounding the term is readily dispelled, however, when issues are made specific and concrete. In our political tradition the public interest is whatever parliament declares it to be. On a day-to-day basis this means that it is whatever the Cabinet decides it is.

The principle of the supremacy of parliament is consequently fundamental to any discussion of policy, including policy toward the north, whether it be in the provincial or federal sphere of influence. The party system, the electoral process, and the procedures of the legislative and executive branches in a system of representative and responsible government are the constituent elements of the process by which such policy is supposed to be effected in this country – if we believe the conventional explanation provided in our text books.

The principal inputs into this decision system are assumed to be the individual wishes and preferences of citizens. These inputs may be "organized" and influenced through the activities of political parties and the processes of public discussion carried on in the media and other ways. Attempts may be made to influence the electoral processes by special interest groups through campaign fund contributions and a variety of other activities which may be of doubtful legality. The conventional model also recognizes the possibility of pressure group activities operating directly on legislators, on members of the executive, and on the bureaucracy. It is widely contended, however, that such lobbying activity is minimal in our particular system of cabinet government in contrast to the U.S. system, for example, either because it is apt to be ineffectual or - in a more sophisticated version - because it is made unnecessary due to the close identity of the major pressure group interest, notably business enterprises, and the elected political leaderships. In the case of northern policies it is not difficult to find evidence of a close coincidence between the interests of particular business enterprises and the public interest as conceived by provincial and federal cabinets, especially if we take their policies toward resource use, infrastructure investments, and the indigenous population. That these policy biases were acceptable to the legislative bodies concerned could be explained either by arguing that the latter were weak and ineffectual vis-à-vis the Cabinet if they opposed such measures or that, more often than not, the legislatures themselves were made up of majorities which supported such measures on the grounds that they were in the public interest. The record suggests that the latter may well have typically been the case: that the electorates represented by the legislative bodies were generally well-disposed toward a conception of progress that emphasized material growth, the "opening up" of new territories, the organization of such activities by "free enterprise," and that they were inclined to view resources, and especially resources in the north, as free goods to be disposed of "at cost" in the interests of encouraging development.

The point to be emphasized, however, is that the text-book version of the Canadian political system has conventionally viewed it as a highly centralized system of decision making in which a multiplicity of inputs are co-ordinated and eventually reconciled at the highest levels of the system to produce policy outcomes which by definition reflected the public interest. Shortcomings in the performance of the system could be found in its conspicuous failures to provide all legitimate participants with an opportunity to participate in it by running for office, by voting, or by at least having access to information (including "education" generally) needed in order to become informed as to the issues and their own interest in them. In the case of the north, over the years improvements in the political process as envisioned in terms of this model have taken the form of new northern constituencies, improved electoral services, better communications and educational opportunities, and other measures which have enabled northern residents to participate in the process by standing for office, by voting, and by campaigning. The strengthening of local and territorial government in recent years has also been seen as contributing to the improvement of this type of political process by providing greater opportunities for residents of the north, including the local people, to become familiar with such activities.308

What is more difficult to express with respect to this system of decision making is that, apart from removing such impediments to the full and free flow of inputs from the governed to their leaders, there is no logically defensible way of assessing its performance as a decision making system. The policy outcomes must be assumed to be correct if we also wish to assume that the process itself is functioning, if not ideally, at least "acceptably." If we do not assume that the policy outcomes are correct - i.e., "in the public interest" - we must be prepared to specify what alternative policy would be correct. To whom do we turn for such a decision? In a limited range of policy issues it is possible we might answer, "to the courts of law," particularly if there is a question of the constitutionality of the policy decision. But ultimately the traditional model of a Parliamentary democracy defeats this recourse by virtue of the supremacy of Parliament principle. Given the uncertainty of the processes of amendment to the British North America Act, there may remain some doubt on this point in the Canadian case, but with this exception, important as the issues of constitutional law might ultimately be for the disposition of the native land rights issue in the north, we find little meaning to such a question as, "Is the policy correct," within the context of the Canadian parliamentary system. While many participants in the process of making policy in this system will be convinced that many policy outcomes are incorrect, the only logically defensible way of determining that is to take them back through the system again. There are no independent sources of authority external to the system by which we may evaluate its outcomes.

The political decision-making model just described is analogous to the pure market model of economic organization and control in which the preferences of buyers and sellers are spontaneously co-ordinated through their interactions in perfectly free, competitive markets, yielding thereby outcomes in the form of material satisfactions which collectively comprise a theoretically possible maximum of such satisfaction for the community as a whole. It can be shown that this result will not be obtained if there are flaws in the process – "imperfections" such as monopoly, lack of information on the part of buyers or sellers, immobility of productive resources, or deliberate intervention in markets by agencies such as governments which restrict its free and spontaneous functioning. Under these conditions the material well-being of the community will be less than the theoretical maximum.

Today, despite the fact that we continue to talk about our political and economic processes as though we believed that reality somehow approximates the ideals of the parliamentary and the market models as sketched above, most Canadians would seem to be thinking in terms of quite a different set of political-economic structures and processes, particularly when reform of the decision-making system of our society is the subject of attention.

The Output Model

It has become commonplace to observe that in most western countries since World War II there has been a trend toward the substitution of political for free market processes of socio-economic processes of control. Many observers have deplored this trend, seeing in it a threat to the free enterprise aspect of modern capitalism, an invasion of the economic sphere of the society's activities by the political-administrative apparatus of the state. What is less frequently observed is that the political processes being susbtituted for market controls have been different from those with which we had previously become familiar in liberaldemocratic systems such as our own. The difference is that they invoke a concept of collective decision making which is nonparliamentary, or at least "extra-parliamentary." Another way of expressing the distinction would be in terms of the overall conception of the state implied by our traditional institutions and processes of public decision making and the new ones which appear to be emerging: the traditional forms suggested an individualistic conception of the state; the new ones, an organic conception of the state. Specifically, the new approaches to public decision making, which would include some forms of public economic planning; methods of "rational" decision making; procedures for evaluating policy outcomes; and what we might call applications of the "policy sciences"; while not necessarily incompatible with the liberal, individualistic conception of the state, would seem to be more compatible with what we might call the "corporative state."

Corporation may be defined as a conception of the state as being made up of economic or other functional groups rather than of individuals. In modern times it has had a rather bad association with fascism which, particularly in Italy under Mussolini and more permanently in Spain, used such a form as a device for centralizing public decision making under a dictatorship. It has more respectable antecedents, however, in medieval thought and in some more recent visionary reactions to the mechanistic individualism introduced with the industrial revolution of the late 18th century.

It may seem peculiar to introduce such an apparently arcane conception into a study of the policy-making structures and processes involved in Canadian northern development, but as noted earlier, the political economy of the Canadian north has a simplicity and starkness about it that favours a return to fundamentals once we begin to examine it.

One reason for this is that the political economy of the north seems particularly "unsusceptible" to traditional political-economic analysis: politically because of its unorganized, dependent, and colonial status; economically because of its traditional reliance on monopoly control and the lack of internal linkages, which has perpetuated the dualism identified earlier. Confronted with such a reality, one would seek to explain it in terms of the theory of conventional liberal political economy only in the absence of a more plausible alternative.

Another reason for looking at northern development policy in other than conventional terms is that it was revolutionized by post-World War II events: the coming of the welfare state to a backward region in the 1940s; the military "cold-war" and the metal mining boom of the 1950s and 1960s; and the arctic petroleum extravaganza of the early 1970s. "Northern development policy" as such is largely a product of a period in which technology and reason as applied to problems of economic and social life were raised to an unprecedented level of esteem (and perhaps even "peaked," in that by the 1970s clear signs of a reaction to such an approach had also begun to appear).

The *structure* of the decision system under corporatism is distinguished by the existence of formally recognized bodies with different interests. Such interests, in the case of northern development policy today, would include the government bureaucracies involved in northern development both federally and provincially; the private resource developing industries; organizations of native people; local businesses; environmental protection associations; organized labour; and special advisory bodies such as the Economic Council and the Science Council of Canada.

What is distinctive about the *processes* of corporative decision making is that they involve bargaining among participants over preconceived policy alternatives. In the classical liberal model ultimate decision-making power was vested in the state and exercised by governments subject to some effective degree of control being exercised over these governments by the electorate. In the corporative model the significance of the electoral controls diminish along with the decline in the practical effectiveness of parliament. The active branch of government becomes the bureaucracy which, compared to other parts of government, is strong on expertise, technical and administrative, but weak on grounds of "legitimacy." Because of the latter, it enters into the corporative bargaining arena as just another interested party among many with its own policies and programs to defend and promote.

In such bargaining situations, power is largely a function of the capacity of different groups to persuade – to persuade by threat of losses, by offers of benefits, by appeals to logic and reason. The ability of different groups to contend with one another in these terms is in turn a function of their ability to secure the information and expertise needed to formulate their own policy objectives and if necessary to discredit policies advocated by their advertisers. Evidence and arguments prepared by scientific, legal, and other expert advisors become particularly important inputs. Such advice is expensive and so is the promo-

tional activity required to "package" and communicate its significance.

A related characteristic of this process is its reliance on rationalistic approaches to decision making. It implies that the principal interest groups involved can somehow arrive at general policy objectives which can then be pursued by means of the most efficient techniques. It is readily adaptable to a "scientific" approach to issues of social policy, and to the application of concepts and procedures drawn from the fields of management science, systems analysis, and operations research.

Whether or not this output approach is incompatible with the parliamentary or other versions of the input (or "process") approach depends upon the level of policy making at which such structures and processes just described are applied. If applied at the level of project, or even program design and evaluation, there need be no conflict. At that level, it is easy to accept the claim put forward by policy analysts and planners that the use of such technical and organizational aids to "rational decision-making" are merely another way of improving the political process, of raising the level of public debate, of making possible more informed policy decisions, and of minimizing inconsistencies and errors in the inputs being considered. At the same time, ultimate responsibility for establishing broad policy guidelines may be left to the appropriate traditional decision-making body, such as the cabinet. Thus, A. W. Johnson has suggested that in Canada, policy analysis techniques can be regarded as just another kind of input into the traditional policymaking process, merely an aid in effecting "practical pragmatic change ... to resolve deficiencies in the functioning of institutions or organizations, as these deficiencies become apparent."309 The same writer suggests that the advice of bureaucrats is simply one of a number of contending influences which elected politicians are subject to, and that it is apt to be, if anything, weaker than other influences which politicians may consider more legitimate.

The output approach constitutes an alternative system of government only when its methods are extended to the higher level of policy making: the establishing of major policy goals and objectives. Paradoxically, that is where such techniques appear to be most needed or to at least offer the most promise to those disillusioned with the traditional ad hoc, incremental, pragmatic, traditional approach. Given the jurisdictional complexity of the northern development situation in Canada, it is inevitable that development goals and priorities will come into conflict. There is little reason to assume that local, provincial, and national preferences with respect to the rate, extent, and character of development will coincide, any more than there is to assume that the interests of resource developing firms, environmentalists, and southern consumers will be the same. Under these circumstances it is tempting to imagine that some expert, disinterested, or at least fully representative central agency could be established to reconcile such conflicts in a way that would be both efficient and just.

It is unlikely that this could be a federal government department or agency, because the federal government – and certainly the federal bureaucracy – is one of the principal interested parties in northern development, all the more so because of recent direct participation in such joint ventures with private enterprise as Panarctic, and its declared intention of participating in other strategic projects in the development of non-renewable resources and in which joint participation by government and private interests is generally desirable."³¹⁰

More in line with the corporative type of organization discussed earlier would be a "non-political" economic planning body, such as the Economic Council of Canada. The Carrothers Commission of 1966 actually proposed, in the course of recommending adoption of a rather elaborate regional economic planning system for the NWT, that "in the event of any possible conflict between federal and territorial interests, the Economic Council of Canada could function as an unimpeachable referee."³¹¹

Whether the Economic Council could be regarded as "unimpeachable" as an arbiter of policy conflicts because of its "representativeness" or because of its policy evaluation expertise is not clear. Its critics would find it wanting on both counts.³¹² The problem of devising an adequately representative body to adjudicate conflicts over economic development priorities for northern Canada does not seem insurmountable, although its over-all political legitimacy might prove very difficult to establish.³¹³ The problems in the way of establishing a scientific or objective method of evaluating such priorities, however, probably are insurmountable. Given conflicts among priorities even the most sophisticated techniques of social accounting, modelling of alternative scenarios, and other simulation exercises cannot be expected to yield an unequivocally "best" ranking of such priorities. Wildavsky, who has been very critical of some uses to which policy analysis has been put, writes in its defence that, "The purpose of policy analysis is not to eliminate advocacy but to raise the level of argument among contending interests." Yet he also concedes that policy analysis "is still largely an art form."³¹⁴ One reason for this is that we lack a comprehensive system of "social accounts" that would supply plausible quantitative measures of the losses and gains accruing to different groups and individuals affected by alternative sets of development or other priorities. Considerable work has been done on this problem. Some of it relates directly to the matter of development policy in the federal north. Both the benefits to be expected and the dangers inherent in the use of social indicators for such purposes are revealed in K. Scott Wood's An Approach to Social Reporting in the Canadian North.³¹⁵ Wood notes that a social accounting system must classify data on the basis of some logic. Where is such a logic to be found? Can it be empirically derived from a study of the society concerned, in this case the society of Canada north of 60°? The author appears to acknowledge that this is not presently possible, so he substitutes a logic deduced from the federal government's declaration of its "National Objectives for Canada in the North":

"1. To provide for a higher standard of living, quality of life and equality of opportunity for northern residents by methods which are compatible with their own preferences and aspirations.

"2. To maintain and enhance the northern environment with due consideration to economic and social development.

"3. To encourage viable economic development within regions of the northern territories so as to realize their potential contribution to the national economy and the material wellbeing of Canadians.

"4. To realize the potential contribution of the northern territories to the social and cultural development of Canada.

"5. To further the evolution of government in the northern territories.

"6. To maintain Canadian sovereignty and security in the North. "7. To develop fully the leisure and recreation opportunities in northern territories."

These statements of objectives are notably vague, of course, and they support a variety of interpretations as to their "logic." Wood recognizes this, noting that "this logic does not emerge from a theoretically rigorous understanding of how northern society operates," but goes on to contend that it is not only *there*, but that it "is the product of the interest and perceptions of many people, in many departments, with a wide variety of northern experience." Even so he includes a footnote acknowledging that he, himself, has extracted the logic he perceives in the National Objectives or has "interpreted the intentions of the policymakers."³¹⁶ The degree of subjectivity involved in any subsequent choice of what data should be collected and how it should be classified would obviously be so large as to make it unacceptable to anyone who was not an intimate of these particular policy makers.

If such problems of bias could be overcome and the technical and economic problems of devising a comprehensive system of social accounts could also be solved, it would still not be possible to find a scientific or non-arbitrary solution to the problem of reconciling alternative sets of high level development priorities. Even if we could measure, by commonly accepted means, the relative social losses and gains of alternative sets of priorities, there is nothing in the literature on the theory of public choice which would support such an expectation.

This is not, it should be emphasized, to deny the usefulness of modelling and other techniques of program and policy evaluation and design. The value of these methods – and their limitations as well – have both been demonstrated in a variety of industrial and public decision-making applications. If northern development is conceived of in terms of regional economic development planning, as it now appears to be in most Canadian jurisdictions with a northern hinterland, these techniques will become indispensable parts of the development planning process as carried out by government agencies. Whether they will be available to other interested parties or not is uncertain, because they tend to be expensive to develop and apply. Some of them require enormous data inputs, others require a continual monitoring of the development situation, and they all require a considerable amount of well-trained staff if they are to be properly applied.

At present the capacity to utilize such techniques is found mainly in large corporate business enterprises and in some federal and provincial government departments. Local governments, community interest groups, native peoples' organizations, environmental protection associations and the like can only hope to beg, rent, or borrow such capacity.

The problems this creates would not be so serious if economic planning techniques were advanced to the point where their scientific objectivity was beyond question. This is not the case, although their reliance on quantification and apparently mathematically-precise methodology creates such an illusion.

Several specific applications of regional planning techniques to the north are presently available and may serve to illustrate the state of the art in this particular application.

The chief peculiarities of northern Canada as a subject for economic planning exercises are the lack of data concerning the economy of the area and the dual economy phenomenon encountered there. These circumstances have some bearing on the type of planning model chosen, for some are more tolerant of data shortcomings than others. Even so, to date there is little consensus on even the choice of technique.

One of the most familiar approaches to regional economic planning in the Canadian context is the economic base model. This uses an approach which identifies the "basic" industries of a region, that is, the principal sources of employment and income upon which the whole economy of a region depends. A good example of this approach is **a** study of the Peace River Planning Commission region in northern Alberta, an area comprising most of census division 15.3^{17}

The basic activities identified in such studies are those which involve the production of goods and services for export from the region, while the non-basic activities are those which produce goods and services for residents of the region. Various methods may be used to measure the contribution of each basic activity to the region, some of them are direct measures, for example flows of money into and out of the region, others are indirect, such as measures of physical output or employment. The result of such a study is to establish the basic structural characteristics of the region's economy and to indicate its relative strengths and weaknesses. This information may be used to forecast future growth possibilities for the region if enough is known about the expected performance of the basic industries. Thus, the relative strengths of the various basic sectors of the Peace River regional economy are identified and ranked in terms of their net money returns to the region as (highest) public administration and defence, production of oil and natural gas, manufacturing, forestry, agriculture, fishing, and (lowest) trapping.

The most conspicuous limitation of this approach is that it yields only a static and highly simplified picture of a region's economy. Its principal practical advantage is that it can be used with rather limited amounts of data.

A more elaborate use of the economic base approach, in this case applied to the NWT, is found in T. J. Raveson's "The Economy of the Northwest Territories of Canada: A Macroeconomic Estimation."³¹⁸ Raveson uses an economic base analysis "to provide the theoretical underpinnings of an economic model for long- and short-term macroeconomic analysis."³¹⁹ The study demonstrates "the relative importance of government as a growth industry (i.e., as the industry which is primarily responsible for the level of economic activity in the NWT)."³²⁰ The study also attempts to evaluate recent federal government policy with respect to its likely impact on the economy of the region.

The use of such models for the north has been criticized on the

grounds that they do not yield enough information about internal processes in the regional economy, a criticism which would seem more valid in those few parts of the north where considerably more different kinds of activities have been established than is typical of the area as a whole. Most of the work done under the sponsorship of DINA appears to favour more elaborate planning models of the "optimizing" variety. The work of Quirin and Chun-Yan-Kuo as described in The Application of an Optimizing Model for Economic Development to Problems of Economic Planning in Northern Canada,³²¹ employs a combination of the techniques of input-output analysis, in which all sales and purchases in the regional economy are depicted in a transactions table showing all the interdependencies of the economy's different sectors, and of optimizing models which maximize or minimize "the value of a criterion variable, subject to the constraints that the behavioral relationships cannot be violated and that the use of the resources in the region cannot be in excess of some specific value."322 In the study cited, the application of such an approach is demonstrated with reference to the long-run economic development of Mackenzie district. The goal of the exercise, "Given the Government's objectives . . . is to assist the planner to explore the alternative strategies for regional development. . . ." Solution of the model "can provide the decision-maker with recommendations on the type of economic activities in the region, and to what degree the growth of these activities should be encouraged."323 The general conclusions reached are that mining (other than gold mining), tourism, and national defence should be promoted as the "prime movers of the regional economic development. Hunting and fishing, the study concludes, should be limited to the tourist industry, and agriculture is not recommended due to the low incomes to be expected in such employments.³²⁴ It is noted that the fundamental problem in applying such a model is the lack of statistical data and that "the solutions provided by the model will vary appreciably as the estimates of the constraints which appear binding are altered."325

Adoption of a regional economic planning approach to northern development raises the possibility of applying to our subject two further fields of study which are emerging in the general literature. One of these is the study of regional public finance, which concerns itself with the effects of taxation and expenditure policies on the growth of different regions, especially when revenues raised in one region are spent in another. This has been a traditional concern of Canadian economists insofar as federal-provincial fiscal relations are concerned, but it has not yet been systematically analyzed in relation to the matter of northern development either within the provinces or in the federal-territorial context.

A second emerging field of study, relevant to a broader view of northern development as being merely one aspect of national economic development policy, focusses attention on the institutional arrangements by which national goals are "regionalized," on comparative studies of how regional planning has been conducted in different countries and under different types of economic systems. Some of the questions to which this type of study addresses itself include issues of political and administrative organization: for example, the advantages and disadvantages of centralization versus decentralization of decision making; and the question of whether an optimal distribution of political power can be specified.³²⁶ Again, little work of this kind has yet been done in specific reference to northern growth and development issues in Canada. In the next chapter of this study, however, we will examine the approaches to northern development adopted in several other countries and in the course of that survey will touch upon some of these considerations.

III. Northern Development Policy Structures and Processes Abroad

The Generality of the "North-South" Problem

Nearly every country in the world has some kind of "regional development problem" in the sense that some parts of the country are economically "more advanced", or have higher per capita income levels than others. In some countries currently experiencing the rapid development which goes with modern industrialization, the discrepancy between rates of economic growth in the more developed and the less developed regions appears to be increasing. Albert Hirschman has referred to such regional differences in developing countries as the "north-south" problem and a good deal of national economic development planning in recent years has sought to incorporate measures to control this phenomenon.

Regional differences in growth and development also exist in countries which are classified as "developed" or, what usually is taken to mean the same thing, "industrialized". In these cases, the regional development problem often involves relatively "backward" regions, such as the Maritime Provinces in Canada, which have not shared in the industrialization of the country as a whole. Such regions are often longsettled areas of the country which have sometimes had a history of economic prosperity before being eclipsed by more recent developments. In the U.S., parts of New England, Appalachia, and the South are obvious examples. The classic case in western Europe is southern Italy. The term "north-south problem" can be extended to such situations as these. Benjamin Higgins cites Italy as an example of the north-south problem on the grounds that "one may dispute the priority of regarding Italy as an *underdeveloped country*, but there can be no doubt that the Mezzogiorno is an underdeveloped area. For the Italian south displays nearly all the characteristics of underdeveloped countries."1

The same line of reasoning could justify including Canada, then, in the list of countries with a north-south problem, not only because of the situation of our Maritime Provinces, but also because of the nature of "the north" as set out earlier in this study. The Canadian north, we have shown, also has most of the characteristics of an underdeveloped country: extremely high birth rates, declining mortality rates; relatively low incomes; extreme variations in income levels from the highest to the lowest; heavy reliance on imports; little local industry; predominance of natural resource-based industry; a low level of political development; and so on.

At a certain level of abstraction, then, a case could be made for treating "northern" development as simply another instance of a general phenomenon involving conspicuous differences in regional growth and development rates. Such a level of abstraction would not seem inappropriate if our main concern was with the use of regional economic planning models of the kind referred to in the preceding section. The basic economic and political processes involved could then be similarly characterized whether we were concerned with the Italian south, northeast Brazil, or the Australian outback. But, of course, the geographical, cultural, and demographic characteristics of such regions would differ. Tropical deserts differ from arctic deserts and rain forests from boreal forests in ways which may be important enough to influence policy options and development strategies. A host of social and cultural factors will also shape the content and objectives of development plans in different situations.

Because of this, there is good reason to restrict comparative studies to situations which are at least superficially similar. In this section, we examine development policies toward northern hinterlands in several jurisdictions which extend into the subarctic and arctic regions of the northern hemisphere. While climate and economic geography are reasonably similar, and while the level of industrial development of the countries concerned is also similar, there are important differences to be taken into account, most notably in the political-administrative spheres. Whether these differences vitiate the comparative analysis or not is something we will assess in the concluding section.

The Arctic and Subarctic Regions

Alaska

Alaska is perhaps the foreign jurisdiction most similar to northern Canada, especially the federal north. Latitude, physical features, and resource base are much the same. There are also superficial cultural and political similarities: the situation of the native population, the background of "colonial" status with respect to the rest of the country, and the common "British" legal and political traditions shared by Canada and the U.S. all invite comparisons between the decision-making structures and processes in Alaska and the Canadian territorial north.

Some features of the political economy of northern Canada can be found, sometimes in an exaggerated form, in Alaska: Americans have regarded Alaska as a resource frontier of great potential; its resources have been developed mainly by outside interests for export; its native people have remained largely dependent on traditional pursuits; the great obstacles to private resource development have been the familiar ones of inadequate transportation facilities, high operating costs due to remoteness from markets, and high prices for inputs other than the land resources themselves; most of the latter have been publicly-owned in both cases; and the main trend in the contemporary economies of both Alaska and northern Canada has been a vast expansion of the service sector, including military and other government sponsored activities, and a heavy reliance on welfare transfers to support the native populations. Alaska's situation has changed to some extent since it became a state in 1959; since the native-lands claim settlement of 1971; and because of the recent petroleum developments on the North Slope. But these events have not vet fundamentally changed the political economy of the region: Alaska continues to display many of the traditional patterns of dependence and external control.

Alaska's commercial economy has depended upon a relatively narrow resource base of furs, fish, precious metals, forestry, and more recently, fossil fuels. For much of its history, the business firms which exploited these resources did so with a minimum of government regulation and control. As in the case of the Canadian north, these firms were typically large non-resident corporate entities capable of overcoming disadvantages of operating in a region remote from markets and supplies of capital and labour. Their ability to do so, especially in the absence of public investment in social overhead and infrastructure capital during the early years, owed much to their capability for technological innovation. Development of the early gold- and copper-mining industries and the commercial salmon and halibut fisheries was made possible, Rogers notes, "by technological innovation on a heroic scale for that time which overcame the cost barriers of remoteness."²

The first resources of Alaska to be exploited by Europeans were the fur-bearing animals of the forested subarctic regions and the sea mammals of the coastal waters. The competition among non-resident commercial interests for monopoly of the fur trade and for exclusive rights to whaling and seal hunting in the area dominated Alaska's political-economic life in the 19th century, both under the Russians and, after 1867, under U.S. jurisdiction.

During the first two decades of U.S. control, Alaska was directly ruled from Washington. Throughout much of this period, the dominant commercial interest in the area was the San Francisco-based "Alaska Commercial Company", which held leases on the valuable sealing concessions from 1870 to 1890, and which influenced much of the region's administration through an effective lobby in Washington. Sealing and trapping continued as important sources of local employment and income into the present century, but since 1900 have been eclipsed by the mining and fishing industries.

Mining became important in Alaska in the late 19th century. Placer and subsequently auriferous quartz mining of gold began in the Juneau area in the late 1870s and in the Yukon valley in the 1880s. (See Figure III.1.). Discovery of placer gold at Nome in 1898 set off the last of the great gold rushes which had moved up the western Cordillera from California during the last half of the century. The Nome gold fields were converted to large-scale methods of exploitation after 1907 and mining continued there until the 1950s.

The copper-mining industry also dates from the late 1890s, when high-grade deposits were developed on the Copper River. Several properties were worked there until the late 1930s, with the Kennecott Copper Company being the dominant firm. Kennecott constructed the port of Cordova, built a railway, and took over the Alaska Steamship Company.

Copper and a number of other metallic minerals, notably tin, chromite, mercury, and platinum, have also been mined commercially at several other locations in Alaska, and extensive deposits of iron ore have been located.

Fossil fuels were developed at widely-scattered locations early in this century, but large-scale commercial development has only recently been considered feasible. Coal mining and small-scale petroleum production was carried on to supply some local markets as the larger centres of population developed in the 1920s and 1930s, but these activities provided little income or employment in the region as a whole.

The fishing industry of Alaska developed mainly on the basis of the salmon and later halibut fisheries. Salmon canneries were established as early as the 1870s and the resource was ruthlessly exploited despite

Figure III.1 – Alaska



periodic attempts at conservation beginning around the turn of the century. The fisheries provided an important source of local employment in the southern coastal areas. Although individuals operating small boats accounted for much of the catch, large firms were involved in the packing and marketing of the product. The industry yielded approximately the same value of production as mining between 1900 and World War II.

The trapping, sealing, mining, and fishing industries upon which Alaska's economy depended from 1867 to World War II displayed remarkably similar characteristics and patterns of development. They were dominated by private non-resident firms and they tended to exploit resources, renewable and non-renewable, as though they were alike. "The process of exploiting Alaska's gold, copper and fisheries resources required heavy capital investment and large markets for disposal of products which could only be provided from outside sources. Economic development followed traditional colonial lines in ignoring local interests and in being specialized and ruthlessly exploitative."³

Government responded to the "ruthlessly exploitative" behaviour of private enterprise in Alaska by imposing federal restrictions on resource development. The strong conservation movement of the Theodore Roosevelt era had a major impact on Alaskan development insofar as it reinforced the case for maintaining direct federal control over Alaskan resources. This influence was particularly evident in the land policies pursued in the early years of the century and especially the forest lands policies as administered by the U.S. Forest Services. The latter were extremely conservative and sought not only to prevent misuses of Alaskan forests from a conservation standpoint, but also to prevent the export of unprocessed forest products from the area. Partly as a consequence of these policies, large-scale commercial development of even the more accessible forests of the southeast did not begin until after World War II. Until then, the only forest industry in Alaska consisted of scattered small-scale, saw-milling operations producing for local markets.

Residents of Alaska resented the paternalistic administration of their resources by the federal authorities as widely as the outside private firms this intervention was designed to control. Opposition to such policies arose not only because they appeared to put long-term outside (national) interests ahead of short-term local interests, but also because of their apparent violation of the American concepts of free enterprise. In the area of mineral lands policies, for example, the "free mining" tradition of the U.S. west was strongly entrenched in Alaska and, while regulations respecting the leasing of mineral lands were permissive even by Canadian standards, there has been continuous controversy over "undue interference" by government in this, as in other, Alaskan resource industries. In particular Alaskans felt that the mineral lands legislation adopted by the federal government following the closing of the public domain after 1900 was prejudicial to Alaskan development. With the proving of extensive petroleum reserves in the far northern area of Alaska in the early 1920s, the application of such legislation as the national Mineral Leasing Act of 1920, which made the federal government in effect a landlord possessing rental and royalty rights to such lands, and the withdrawal of 10 million hectares as a Naval Petroleum Reserve in 1923, gave rise to a controversy which continues to this day. The contrast between American and Canadian attitudes toward such interventions has been the subject of some attention. Canadians do not seem to draw "the same clear battle lines between private and public interests and between private enterprise and government enterprise as are so often drawn in the United States on natural resources questions."⁴

More important than this resentment of government intervention, however, was the specific tendency of Alaskans to blame their problems on the fact of non-resident political control over their economic affairs. There was not even a semblance of local government in Alaska until the Organic Act of 1884 provided for a rudimentary judicial system and a governor, both under close federal control. An act in 1912 made Alaska a territory of the U.S. and established a territorial legislature. The powers and taxing authority of the legislature were severely limited. Fishing and wildlife remained under federal jurisdiction and there was no provision for the enactment of territorial lands legislation. The territorial legislature did, however, establish a number of elective offices (attorney general, treasurer, auditors, and highway engineer), several departments (health, education, mines, aviation, fisheries, and agriculture), and a number of other boards and agencies. Many of these offices and agencies overlapped federal counterparts and, in most such instances, the latter were dominant. This resulted in a complex administrative structure in which lines of responsibility were difficult to discern. Even at the highest level, there was little possibility for coordination of policy, not only because of the federal-territorial division of power, but also because the appointed territorial governor was separated from the elected – and chronically hostile – legislature. This situation was widely regarded as a deliberate device to weaken local influences on government and to preserve de facto federal determination of Alaska's development, and the slow progress of the area's resource-based industries in the first half of this century was attributed to federal mismanagement or neglect.

"This long period of federal control produced a peculiar Alaska ideology in terms of which most, if not all, of the major problems of the territory were attributed to federal mismanagement, misrule, or neglect. The lack of development was attributed to the absence of Alaska self-government (i.e., control over its own development), and distortions of development (resource "skimming," exportation of wealth, etc.) were attributed to absentee control of fishing and mining industries, whose interests were served by the governmental status quo. Thus, the federal government was faulted both for neglecting Alaska, insofar as resident interests were concerned, as well as for actively oppressing Alaska by monopolizing public authority over resource development and pursuing policies that favoured the absentee corporate interests."⁵

War in the Pacific and the cold war with the Soviet Union in the 1950s gave Alaska such strategic importance that military activity became the largest single factor influencing development. This expansion of an already large government administrative establishment and the subsequent growth of the public health, education, and welfare sectors in the post-war period made government by far the largest and most dynamic "industry" in Alaska from the early 1940s until well into the 1960s.

Government payrolls have traditionally been a more important source of income in Alaska than in other parts of the U.S., largely because of the administrative work connected with the extensive public lands managed by the federal government there, the railroad and communications facilities operated in Alaska by government rather than private enterprise, and the proportionately large native population for which the government was directly responsible.

During World War II construction of an elaborate defence system began in Alaska and large numbers of troops were stationed in the area. The population increase and construction boom fuelled the regional economy for nearly a quarter of a century. In 1939 federal and state government employment (including military) amounted to 3 600 out of a total employed work force of 26 000, or approximately 13.5 per cent of the total. By 1950 the work force had grown to 78 000, of which more than 53 per cent were employed by government.⁶ Rogers has shown how defence and the related construction jobs correlate with population growth in Alaska both during this period of expansion and in subsequent periods of contraction. The North Slope oil boom of the late 1960s added a new basic development force to the Alaskan economy, but otherwise, expansion of the commercial export base of the area proceeded slowly and erratically and constituted a relatively unimportant source of growth, at least in the short term. Rogers has drawn a generalization from the Alaskan experience which is relevant enough to the north as a whole to merit quoting at some length:

"This comparison of population and employment movements illustrates a fundamental characteristic of developments in Alaska and in other underdeveloped areas. The initial short-run employment impact of these basic developments exceeds the long-run employment of continuing production or operation. Workers to fill employment in the first phase of development and facility construction are imported for the most part because the occupations required tend to be highly specialized and the period is short (about three to five years in both petroleum and defence establishment). On the other hand, the distributive or support industry employment which this initial development brought into being is a continuing long-run source of resident employment. The build-up of these sources of employment, however, lags considerably behind the creation of the demand because it takes place in that part of the economy which reacts to unplanned or unregulated market forces. The lesson of the past two decades is that the long-run benefits to residents from new developments are not to be realized by the traditional attempts to enforce local hire requirements during the boom, but in devising ways and means of accelerating the catching up of the larger distributive sector with the newly created demands."7

The mining, forestry, fishing, and small agricultural industries of Alaska remained unimportant sources of income and employment

after World War II relative to government and other service sector activities. Trapping and sealing remained important sources of income, especially for native groups in the less developed western and northern regions. Some agricultural development occurred, especially in the Matanuska Valley around Anchorage and Palmer, and commercial oil and gas production began in Kenai Peninsula in the 1950s, also to meet growing local demands. But the general pattern of commercial development in the late 1940s and 1950s was far from dynamic. As Table III.1 shows, the fisheries remained the most important commodity-producing industry in the 1960s. Table III.2 shows the general pattern of employment.

Table III.1 – Major Alaskan Commodity Industries by Value of Product (in \$ millions)

Industry	1960	1962	1964
Fisheries	96.5	126.5	125.0
Forest Products	47.3	49.7	58.0
Minerals	20.6	18.8	35.5
Oil and Gas	1.3	28.4	35.5
Agriculture	5.4	5.8	5.6
Furs	4.8	4.3	4,4
Total	\$ 175.9	\$ 233.5	\$ 264.0

Source: Alaska State Development Corporation, Annual Report, 1965.

Table III.2 -	Industrial	Composition	of	Total	Employed	Workforce	in	Alaska,
1939–71								

	Calendar years (12 Months Averages)							
Industrial Classification	1939	1950	1960	1965	1970	1971		
	_	1	000s o	f Perso	ons			
Total Employed Workforce*	26.6	78.1	100.7	115.1	136.1	135.2		
Department of Defence	0.6	32.0	39.5	39.5	38.7	38.0		
Commodity Producing Industries†								
Agriculture	1.0	1.0	0.8	0.8	0.8	0.8		
Fishing	1.5	1.5	1.8	2.5	2.9	2.8		
Mining								
Crude Oil and Gas	—	0.5	0.4	0.7	2.7	2.0		
Other	4.5	1.4	0.7	0.4	0.3	0.4		
Contract Construction	1.3	6.3	5.9	6.4	6.9	6.6		
Manufacturing								
Food Processing	4.2	4.7	2.8	3.0	3.7	3.5		
Wood Products	0.1	0.6	2.2	2.3	2.8	2.7		
Other (Includ. Petrol. Prod.)	0.3	0.4	0.8	1.0	1.3	1.3		
Distributive Industries								
Transportation, Communications, Utilities								
Air Transportation	0.5	0.9	2.0	1.9	3.0	2.8		
Other	1.5	2.8	4.8	5.3	6.1	6.9		
Trade	2.5	4.9	7.7	10.0	15.3	15.9		
Finance, Insurance, Real Estate Services								
and Misc. [‡]	1.4	4.6	9.1	12.8	17.9	16.0		
Government (non-defence)								
Federal (non-defence)	2.0	7.6	9.2	9.8	9.8			
State (Territorial), Local	1.0	2.1	7.1	13.4	18.5	0.8		
Unclassified (non-agricultural self-employed.								
other unpaid family workers)	4.2	6.8	6.0	5.3	5.4	5.0		

*Includes military personnel and civilian employees of the Department of Defence (Departments of War and Navy in earlier years).

†Includes agricultural wage and salary and unpaid family workers.

‡Includes domestics.

Source: Adapted from G.W. Rogers, "Alaska's Development and Change: 1950-1980," Inter-Nord, December 1972, p. 69.

Local dissatisfaction with the situation grew into a strong statehood movement which culminated in the holding of a constitutional convention and its ratification in 1956. Two years later the Alaska Statehood Act was passed by Congress and in 1959 ratified by the Alaskan electorate. Alaskan representation in Congress dates from 1958 when the area elected one member to the House of Representatives and two senators. Local government in Alaska is organized by boroughs and cities which are required by the constitution to provide three mandatory services: assessment and taxation, education, and planning and zoning.

The new Alaskan political structure consisted of an executive, made up of an elected governor and lieutenant governor and a bicameral legislature with a 40-member house and 20-member senate. The administration was to consist of up to 20 major departments responsible to the governors.

This new structure was expected to make possible a high degree of centralized decision-making authority within the state, and Article VIII of the state constitution spelled out quite clearly the responsibility of the state officials for keeping decision-making powers within the state, eliminating non-resident control, and giving priority to developments that would serve resident interests.⁸ Further to this, the same article declares that "It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest."⁹

Any Alaskans who expected statehood to bring an immediate change in the region's economic situation, or even in development programs and policies, were disappointed. The new state administration introduced some measures to stimulate economic growth, particularly by promoting industrial development and the export of raw materials to Japan. An industrial incentive act provided for discriminatory total or partial exemption from state and local taxes to new or existing enterprises for periods of up to 10 years; taxes and royalties on oil and gas leases were kept so low as to lead one analyst to remark that at least superficially "Alaska's apparent generosity to the oil industry has few parallels among private landlords or governments elsewhere"; and pressure was exerted on the federal authority to extend the publicly operated Alaska Railroad from Fairbanks to the Kobuk River area in northwestern Alaska so as to open it to mineral development.¹⁰ The state also established a public ferry and highway system in an attempt to reduce transportation costs which a private monopoly, the Alaska Steamship Company, was maintaining at "artificially" high levels in some areas.¹¹ In 1966 Alaska had fewer than 5 000 miles of roads, most of which had been built by the military.¹²

Such measures were more significant as indications of intentions than of substance, however, for the fundamental problem of the new state administration was not so much one of devising new development policies as it was of devising means to finance its existing responsibilities. Revenues from the existing fishing and mining activities were jeopardized by stagnation of these industries and the financial burden of the state government was increasing steadily as more and more of the costly health, education, and welfare functions were shifted from federal to state administration. While the state's total cash receipts increased by some 136 per cent in the first 5 years of its new status, cash outlays grew by nearly 240 per cent (Table III.3).

	1960	1965
Total receipts	\$64.0	\$151.0
Total expenditures	\$45.6	\$152.7

 Table III.3 – Comparative Statement of Receipts and Expenditures for the State of Alaska (in \$ millions)

The problems posed by the transition from federal to local control were recognized and somewhat alleviated by federal aid programs in the early 1960s, measures which were greatly expanded in 1964 as a consequence of an earthquake disaster. Federal assistance took four main forms: transitional financial grants; technical and planning assistance (notably the Federal Field Committee for Development Planning in Alaska); revenue sharing from federal oil and mineral leases; and land grants by which the state was to be allowed to select over 40 million hectares from the federally owned public domain in Alaska (virtually all the land lying outside the cities of the state).¹³

The latter provision assumed an unexpected importance with the re-awakening of commercial interest in the North Slope petroleum resources in the late 1960s. The large finds at Prudhoe Bay in 1968 created a prospect for a massive resource-based development boom substantial enough to offset the declining military component of the state's economy. These prospects were at least temporarily clouded over, however, by the emergence of two new factors: the environmental protection movement and the native land claims issue.

The first of these was not without precedent in that conservationists had been interested in Alaska for many years: what was new was the complex basis of the new movement, a movement rooted in a comprehensive conception of ecological relationships and employing elaborate scientific, philosophical, and public relations methods to argue its case and disseminate its message. In 1972, Rogers wrote that:

"Alaska sometimes appears today as a battle-ground between the giants of technological exhibitionism and conservation, the old apostles of unlimited progress and those of the new gospel of survival through limited growth in their contemporary struggle for the mind and spirit of the Nation. This undoubtedly is a passing phenomenon, but the passing has left its mark in the form of a critical re-evaluation of the goals of Alaskan development and their broadening to include more than simple economic objectives."¹⁴

It is interesting in the light of Alaska's historically colonial status to note that the environmental organizations involved have been national organizations, such as the Sierra Club, rather than local groups. Like the other main actors in recent Alaskan development, international oil companies and the federal government, the environmental protection groups have perpetuated the tradition of non-resident determination of Alaskan development policy.

While Rogers' assessment of the likely impact of environmentalism on Alaskan development appears to have been borne out by events in the wake of the "energy crisis" of 1973-74, the other new factor in the development situation, native lands claims, appears to have long-term implications.

Both federal and territorial governments neglected the native population of Alaska for many years. Early population estimates are unreliable, but frequently-cited figures suggest that there were some 30 000 native Aleuts, Inuit, and Indians inhabiting the area when it was acquired by the U.S. The white population, numbering scarcely 1 000 in 1867, grew rapidly during the gold-mining boom at the turn of the century and probably approximately equalled the native population in size at that time. The white population subsequently fluctuated widely while the native population, hindered by very high mortality rates, barely held its own. By the beginning of the 1940s there were approximately 33 300 natives in Alaska. The white population grew rapidly during the World War II, at the same time a considerable number of American blacks and some Filipinos were also incorporated into the Alaskan population. Living conditions improved slowly for the native people and their rate of natural increase rose after the war, bringing their number to about 35 000 by 1959, out of a total population of 171 000. About half the native population is Indian, the other half Inuit and Aleuts.

Missionaries provided the first health, education, and welfare services to the native people of Alaska. In Alaska, however, the separation of schools from churches began much earlier than in Canada. Federal schools for native children gradually replaced mission schools before World War I and territorial schools for white children and others not officially classed as "natives" were established in 1905. Duplication of school facilities was gradually eliminated after World War II: children attended whatever school was available. The progress of native people through the school system remained very slow, however. Lantis reports that even by 1960, while only 1.2 per cent of Alaska's white population had fewer than 5 years of formal schooling, 38.6 per cent of non-whites were at this level. The median school year completed by the non-white population was only 6.6.¹⁵ Few native students have been able to take advantage of Alaska's community colleges and the University of Alaska near Fairbanks.

Health services were provided to Alaska's scattered native population by church organizations and by the federal Bureau of Indian Affairs which operated six field hospitals, all but one of which was built after 1930.¹⁶ Throughout Alaska public health services were expanded, particularly in the remote northerly villages, after World War II, and this, combined with an expanded welfare system, contributed to a noticeable decline in the typically high mortality rates of native North Americans.¹⁷

Because official accounts of health, education, and welfare programs tend to exaggerate their successes, it should be noted that since achieving statehood, Alaskan programs have suffered from the narrow tax base referred to earlier and from problems of recruiting competent professional staff. Pierce has described the state's health and welfare program in general as substandard, the juvenile program as at a virtual standstill, and the prison and correction facilities as inadequate by any standards.¹⁸

In Alaska a number of influences have raised native participation

in the political-economic life to a somewhat higher level than in Canada, despite their common low social and economic status. One has been the availability of wage employment in the commercial fishing, mining, construction, and forestry industries. Through these industries some native groups have had longer, more direct involvement with European culture than has been the case elsewhere. This employment has tended to be irregular due to the seasonal nature of most of the industries and also because of the "boom or bust" development tradition which has prevailed in the area. Even today unemployment among the native population of Alaska approaches 80 to 90 per cent in the winter months and falls to around 25 per cent in the summer when fishing, canning, construction and fire-fighting jobs become available.¹⁹ But, unsatisfactory as the wage-employment experience of the Alaskan native has been, it has been more extensive and varied than that available to most Canadian native people.

Another factor which may have helped Alaskan natives to participate in the political economic life of the area has been their eligibility for military service and their legal susceptibility to U.S. draft laws.²⁰

As early as the 1930s the Indian Bureau tried to persuade natives to organize village councils and by 1950 there were more than 30 such bodies officially constituted. Lantis notes that while organization did not come easily even to the more settled Alaskans, "experience was gained, until today there are mothers' clubs, locally run church organizations and National Guard units (chiefly in coastal villages) besides the councils, even in villages where the Eskimo language still is dominant."²¹

Although provision had been made for the establishment of reservations in Alaska, the reservation system never developed there despite repeated efforts of the federal authorities up to the $1950s.^{22}$ As in some parts of Canada, in practice, the relationship of Alaskan natives to the land remained undefined, except for the rather general provision of the Alaska Organic Act of 1884 which stated that they were not to be "disturbed in the possession of any lands actually in their use or occupation or now claimed for them"²³ This was qualified, however, by the statement that the terms under which natives could acquire *title* to such lands was reserved "for future legislation by Congress."²⁴

The political insignificance of the native people was subsequently reflected by the absence of any such legislation. Even when Alaska became a state, the matter of native lands was again glossed over, with the new Statehood Act disclaiming rights and title to any native lands in Alaska, but not defining them. However, the new state was authorized, as noted earlier, to select a portion of the *federal* lands in Alaska for its own uses. Because these comprised virtually all the lands in the state, it followed that some of the lands chosen by the state would likely include some lands potentially belonging to the native population. Local native groups in several areas were alerted to the situation when the state began selecting land in the 1960s. A number of regional associations formed themselves into the Alaska Federation of Natives to press for a definition and settlement of native land claims in the mid 1960s the first effective political organization of the native people of Alaska.²⁵ The immediate consequence of this development was imposition by the federal government of a freeze on state land selection in 1966.

The native population could have a political impact on Alaskan development. Expansion of the state's oil and gas reserves following the new discoveries on the North Slope and offshore in the late 1960s seemed once again to hold out the possibility of a new economic era for Alaska. Much of the attention given to the native lands claim issue after almost a century of neglect may be attributed to the fear of state, federal, and, perhaps, private oil interests that the issue could somehow critically delay the development of a major new resource industry in Alaska. In fact the native interests did succeed in forcing a settlement of their claims by demonstrating their capacity to tie up the trans-Alaska pipeline in legal proceedings. Their effectiveness in this particular case was conspicuously greater than that of the environmental and conservation groups.²⁶ After much negotiation, the December 1971 "Alaska Native Claims Settlement Act", contained awards of land, resource revenue sharing, and economic development programs for the benefit of Alaska's native population, which may go some distance toward alleviating the economic condition of this part of the population.²⁷ Despite this success it is not possible to generalize about the impact the native Alaskans may continue to have on the state's development. In particular it is not yet possible to judge whether native influence will be channelled through the conventional political process or embodied, perhaps, in regional organizations devised to manage resource developments on a local, quasi-independent basis.

There is some reason to suspect, however, that Alaskan resource development policy will, in the long run, continue to be determined externally, despite statehood and despite the emergence of a new political force within the state. Non-resident corporate enterprise, at the moment represented mainly by the international oil companies but also including a growing number of firms, many of them Japanese, with interests in Alaskan forest and mineral resources, remains a conspicuous force in the Alaskan situation. Another traditional "outside" force, the federal government, also remains conspicuous, not only through its relationship with the private corporate interests involved, but also through its revived relationship with national environmental-conservationist interests.

Scandinavia

All the Scandinavian states have arctic and subarctic territories which may be considered political-economic hinterlands of industrially developed southern areas. The general form of their economic and political institutions and traditions may be classed as "market-based" and "liberal-democratic". These similarities to the Canadian case are important enough to encourage attempts to compare their policies of northern development to our own, although as we will see, geographic and cultural differences make it necessary to interpret cautiously the significance of any such comparisons.

Greenland

Like Alaska, Greenland is a northern hinterland with no direct land connection to its "southern" political-economic base, Denmark. (See

Figure III.2.) Unlike Alaska, its significance for Denmark has not arisen so much from a perception of its economic value as a frontier region as from a literally "peculiar" Danish preoccupation with the well-being of its predominantly native population.

This paternalism took the form historically of a policy of development which placed more emphasis on social and cultural than economic considerations. It is only recently that Danish policy toward Greenland has been oriented toward economic development in the traditional sense.

Greenland was first colonized by the Norse at the end of the 9th century. The Norse abandoned their settlements early in the 15th century, apparently because of adverse climatic changes which hindered the cattle raising upon which they depended. Greenland was probably visited subsequently by whaling and fishing vessels, but there was no attempt at recolonization until early in the 18th century when the missionary Hans Egede re-established a settlement at Godthaab. Egede exerted a powerful influence on the subsequent life of Greenland, particularly through his efforts to educate the native Greenlanders, to subordinate economic to cultural activities, and to preserve the native population from the less desirable aspects of life outside. Although private enterprise was allowed to operate briefly in the Greenland trade, in 1774 this policy was abandoned and Denmark established a monopoly, the Royal Greenland Trading Company. In effect, Greenland was subsequently closed to outside commercial influence until after 1951 when the policy was changed, largely as a consequence of World War II. During the period of state monopoly control there was little growth or development of the Greenland economy. The resource base was, of course, extremely narrow because of the limited amount of land not covered by the ice sheet. Settlement was confined to the coast where the principal economic activity was sealing supplemented by some whaling, fishing, sheepraising, and mining.

Production of sealskins for export to Denmark was the main industry of Greenland until the present century when codfish began to be abundant in the waters off West Greenland. The cod fishery developed rapidly in the inter-war period with physical production rising from under 90 to over 7 000 metric tons per year between 1915 and the early 1930s. Sealskin production fluctuated considerably from year to year, but remained generally steady between 15 000 and 25 000 skins per year during this period.²⁸

The early Norse settlers of Greenland raised cattle on the southwest coastal strip and early in the present century the Danes introduced sheep raising at Julianehaab. The industry developed slowly during the inter-war years, a major problem being periodic shortages of fodder needed to carry breeding stock over the winter, but by the late 1940s the herds were reaching between 15 000 and 20 000 head before the annual slaughter.

Greenland's mineral and petroleum resources have only begun to be systematically investigated since the 1940s. During the years of direct monopoly control only three minerals were commercially exploited, the cryolite deposits at Ivigtut, marble at Marmorilik, and coal on Disko Island. Cryolite, employed principally in the manufacture of aluminum, was mined by a number of private concessionaires from the 1850s until



World War II, at which time the Danish government became directly involved in the operation. The marble quarrying took place only in the late 1930s.

The slow development of the resource base and the government's deliberate policy of discouraging immigration to Greenland meant that population growth would be limited to the natural increase of the native population during the period before World War II. The total population recorded in the first census of Greenland in 1805 was just over 6 000. By the turn of the century it had approximately doubled, and by 1945 it had doubled again to reach over 21 000 (not including U.S. military personnel). Only a very small part of this population was nonnative. Before World War II there were never more than 500 Danes in Greenland.²⁹ Most of this population was located on the west coast, congregating increasingly in the larger settlements such as Godthaab, Julianehaab, Egedesminde, Holsteinsborg, Sukkertoppen, Jakobshavn, and Vajgat. On the east coast, where Danish sovereignty was not clearly established until the 1930s, the principal settlements were Angmagssalik and Scoresbysund.

World War II brought a number of fundamental changes to Greenland. It suddenly opened up the area to new outside influences as a consequence of a temporary period of *de facto* U.S. jurisdiction during the war, the development of large military bases and weather stations, of which Thule in the far northwest was perhaps the best example, and a considerable infusion of both U.S. and Canadian ideas about development. The latter strengthened the latent opposition to the old monopoly policies of Denmark and lent support to those elements in the Greenland population who favoured a more open and more materialistic development policy.

The old economic policy had sought to reserve whatever resource potential the area possessed for the uses of the Greenlanders themselves, the objective being to enable the population to be self-supporting at an "adequate" level of well-being through carefully regulated trade with the mother country. This trade was intended to entail neither profits nor losses for the Danish state, although in practice it appears to have been conducted at a loss. An attempt was made to avoid developing among Greenlanders a lust for goods which would lead them into the endless spiral of effort and increasing wants which characterized the consumer society outside. A deliberate pricing policy was followed by the Royal Greenland Trade Department to control the demand for "luxuries" as distinguished from "necessities" and only those production activities in Greenland were promoted which would permit the "self-assertion of Greenlanders especially in the fields where they had an understanding of their own peculiarities.³⁰

Since World War II the revision of this policy of benevolent paternalism has involved at least three major planning exercises; one by the Greenland Commission of 1948, another by the Greenland Council established in 1960, and the most recent by a working group established by the Danish government in 1968. The Commission of 1948 thoroughly explored the existing social and economic situation in Greenland. It recommended in 1950 that the government trading monopoly be abolished and that the restriction on free entry to Greenland be lifted. It also proposed measures to modernize the society through improved health and education services, investments in better transportation and communications facilities, and a "growth pole" type of approach to overcoming the problems associated with geographic dispersion of population and economic activities.

These proposals were adopted as policy by the Danish government which proceeded to invest heavily in the necessary capital facilities such as schools, hospitals, and transportation facilities. Heavy investments were also made in fish processing plants, warehouses, telecommunication equipment, and other public utilities. Migration from the smaller to the larger centres was encouraged. Total government expenditures in Greenland increased by over 35 per cent between 1950 and 1960.³¹

One of the principal effects of this modernization program was to increase the rate of population growth in Greenland. In part this was attributable to improved health care, showing up as a marked drop in the infant mortality rate and a reduced rate of death from tuberculosis. It was also a consequence, however, of a rise in immigration. A large part of the skilled labour required for construction and other parts of the modernization program was imported from Denmark. Thus, by the early 1950s, the non-native proportion of the population was almost double the 2.7 per cent it constituted at the end of the war.

This rapid growth of the population tended to dilute the effect of the heavy capital transfers from Denmark in the 1950s. The overall experience was not unlike that encountered in most developing countries. Dissatisfaction with the results led to establishment in 1960 of the Greenland Council to review the situation and to provide a new set of development planning guidelines. The council's report, published in 1960, recommended an intensification of existing programs and, in particular, promotion of an all-year fishing industry based on the so-called "open-water" towns of Godthaab, Frederikshaab, Sukkertoppen, and Holsteinborg.³² The latter program became the keystone of development in the 1960s, with public funds being committed in the form of grants and loans to support acquisition of modern vessels, fishing gear, and to finance construction of shore installations. The main emphasis was on developing the west coast fishery, but salmon fishing and shrimping in the Disko Island area were also encouraged. Total government spending in Greenland, which had increased by some 35 per cent in the 1950s, increased by approximately five times (from 138 million Dkr. to 645 million Dkr.) between 1960 and 1970.33 These outlays were divided about equally between capital and operating expenditures.

Despite a sharp decrease in the birth rate, apparently attributable to contraception, in the late 1960s, the results of this expanded effort were not very encouraging. Part of the difficulty has arisen from what may be another climatic change affecting the offshore fisheries of southwestern Greenland. The cod catch, which nearly doubled in the 1950s, stagnated during the 1960s, due partly to difficult ice conditions along the coast. This set-back was met by an even more expensive program of fishery development involving heavy public spending on a fleet of large deep sea fishing vessels. The salmon and shrimp fisheries, with more than 100 privately owned vessels in operation by the end of the 1960s, were more successful, but were less satisfactory as a source of employment because of their seasonal character.

Table III.4 reveals the great importance of service employments, most of which are directly or indirectly supported by government outlays, in the "modernized" Greenland economy.³⁴

Table III.4 – Greenland: Occupational	Distribution of	the Labo	ur Force,	1951–65
	1951	1955	1960	1965
Fisheries, hunting and sheep-farming	3 690	3 701	4 058	3 645
Mining	330	360	342	302
Manufacturing			841	1 327
Building and construction		1 289	969	1 546
Public utilities	1 760		135	219
Commerce		700	1 2 1 2	1 542
Transport		474	929	1 320
Public institutions, professions, etc.	882	1 397	2 084	3 3 3 1
Total	6 662	7 921	10 570	13 232
Hereof coming from outside	750	1 175	1 802	2 934

Table III.5 reveals the heavy dependence of the goods-producing sector on a single staple commodity.

Table III.5 –	Export of	Fishing,	Hunting	and	Sheep-Farming	Products	(measured
in dkr. 1 Mill) _						

	1 96 0	1962	1964	1966	1968	1969
Fish and Fish Products	<u> </u>					
Frozen Fish	4.4	8.5	16.5	36.0	27.8	31.2
Salt and Dry Fish	14.1	16.8	11.0	9.1	6.7	7.8
Canned and Frozen Shrimp	4.2	8.2	15.5	17.9	27.1	27.5
Fishmeal	0.6	0.6	0.6	1.2	0.2	1.0
Mutton and Lamb	0.4	0.5	0.6	1.4	1.6	1.5
Hides, Skin Fur, etc.	1.9	1. 6	2.9	4.6	5.3	6.4
Total	25.6	36.0	47.1	70.2	68.7	75.4

Mining may hold considerable promise for future development in Greenland. Both Danish and outside interests are developing some potential mining areas. Substantial lead and zinc deposits have been located in the Umanak area, and iron, molybdenum, uranium, thorium, and several other mineral deposits have been found at widely scattered points. Oil exploration companies have been active on the Continental Shelf off the west coast. Growing interest in these possibilities prompted the Danish parliament in 1965 to enact legislation which set out specific conditions under which individuals or companies could obtain prospecting licenses, and exploration or development concessions. All mineral lands were reserved to the Danish state.³⁵ In broad terms, the legislation, as amended in 1969, appears to be modelled on Canadian mineral resources legislation and seeks to ensure some degree of environmental protection, some native employment, and a suitable return to the public treasury from mineral exploitation.

Danish planners have been extremely cautious, however, in building mineral development into their overall economic plan for Greenland. One reason for this is the unpredictability of such developments, but another is their awareness of how limited the direct employment effects of modern mining operations are likely to be. The Danish Perspective Plan 1970–85 notes that any increased demand for Greenland workers that arises from the mineral industry will be accounted for "to a greater extent by the extensive service facilities required when a mine goes into operation than by the actual mining"³⁶

The modernization policies in Greenland since 1951 have permitted a more rapid increase in the population than in the export base. This has not, however, been permitted to bring about a reduction in the per capita real income. On the contrary, real income in Greenland has increased greatly during the past two decades as a consequence of financial transfers from the rest of Denmark. This occurred, not because it was an object of policy in itself, but on grounds of equity considerations. Because Greenland acquired the status of a Danish "province" after 1951, the principle of equal benefits in the form of social services and wage rates throughout the kingdom meant that Greenlanders would inevitably be subsidized to the extent that productivity there fell short of productivity in the rest of the nation. While data are available showing trends in earned and non-earned incomes in Greenland, with the latter increasing more slowly in real terms than the former during the past decade, such a distinction is not particularly meaningful because many of the earned incomes are derived from employment at wage rates arrived at by application of national bargaining processes among the unions and the government.

Thus, the Danish Perspective Planning report concludes that despite the earlier policy of increasing wage rates in Greenland only to the extent justified by export income, it would be preferable from a social point of view "to continue the wage policy adopted during the last few years so that the individual real income for each employed person would be increased by 5 per cent yearly irrespective of the actual increase in productivity in the years to come."³⁷

The long-term solution is to raise per capita productivity in Greenland through capital investments in the fishing industry and by health and education investments in the stock of "human capital" in Greenland. As we have seen, the former program has not been particularly successful to date. The results of the latter are more difficult to evaluate. Education programs, in particular, while "progressive" in many respects, have raised a number of difficult issues relating to acculturation and migration. From a narrowly economic point of view, the uncertainties associated with the future development of employment opportunities in Greenland, combined with existing rates of population increase, suggest the desirability of enabling Greenlanders to acquire the type of education which would equip them to compete on the job market in southern Denmark. The established policy of having students in Greenland take part of their schooling in southern Denmark could be expanded to promote such an effect. The direct economic risk of such a policy, however, is that the better educated Greenlanders will tend to migrate to the national job markets to the detriment of the native labour supply in Greenland. It is not easy to see how this dilemma can be resolved even if the broader cultural and political implications are ignored. How important the latter may become is also far from clear. While Greenland has been equipped with a set of local government institutions, and is

represented in the Danish parliament, to date most decisions have been made in southern Denmark. The reliance on financial transfers from the south to sustain Greenland's economy and the Danish style of national economic planning appear likely to perpetuate this condition. It also seems unlikely that unregulated market forces will play much of a role in determining the future course of development in Greenland. The situation of Greenland in this respect is succinctly characterized in the Perspective Planning report of 1968.

"The economy of Greenland is quite exceptional as compared with the overall economy of Denmark because of the complete predominance of the public sector. Private economic activity is so far on a limited scale only, and the market mechanism is thus of minor importance in the regulation of developments. The formation of prices except export prices and of wages is of a special character for on the whole they are both fixed by the public authorities. Insofar as standards of living and employment are concerned, the Greenland population mainly have to depend on decisions made at the political level as to the amount of subsidies to be paid by the rest of the Danish community."³⁸

Greenland consequently is an extreme example of the classic problems not only of development in frontier regions, but also of interregional income transfers in a modern industrial state. Many of these problems also play a part in the northern development experience of the other Scandinavian states, but in a much less extreme form. As we shall see, their experience has also differed from the Danish in the extent to which the market system of social control has been allowed to shape the course of events in their northern hinterlands.

Norway

Northern Norway, comprising the counties of Nordland, Troms and Finmark (Figure III.3), has a well established sedentary population, dating from at least the 14th century and now numbering over 454 000 people, including some 20 000 Lapps (of whom only about 10 per cent continue to live as nomads). It is consequently not so much a new frontier region as an old region which has not kept pace with the economic development of the rest of Norway. Its development problem consequently resembles that of the Canadian Maritime Provinces more than that of the Canadian north, especially when account is taken of the region's traditional dependence on fishing supplemented by subsistence agriculture.

Despite its high latitude, and spectacular rugged terrain, northern Norway has been capable of sustaining settlement on the basis of smallscale mixed farming conducted on the narrow coastal strip on the inland valley floors, and on some of the easily accessible offshore islands. Although the growing season is short, the climate is tempered by the effects of the Gulf Stream, and precipitation, while variable over the area, is generally adequate for grain and fodder production. However, only about 1 per cent of the total 144 500 km² is suitable for agriculture. Tree growth is limited, but extends further north than would be expected. While the northern limit of spruce is near Bodø, heavy stands of pine and birch are found as far north as Alafjord and on the inland

Figure III.3 - Northern Counties of Norway and Sweden



side of offshore islands as far north as Tromsø.³⁹ These forests have not been subjected to large-scale exploitation, but for the most part have been used in conjunction with farming operations. The total forest area is only some 15 500 km², of which about 6 per cent is coniferous.⁴⁰

Fishing, sealing, and whaling were major reasons for the original settlement of northern Norway in modern times. Although Norwegians operating out of northern harbours fished throughout the north Atlantic and even further abroad, much of the fishery was concentrated on the coastal banks and the deep fiords which penetrate the Norwegian coastline. The inshore fishery was facilitated by the shelter afforded by numerous islands. The Lofoten Islands were particularly important as bases for the annual spring cod fishery. Under these conditions it was feasible to fish from small boats, close to shore, where the catch was typically preserved simply by drying or salting in small batches.

Large-scale fishing and sealing and whaling fleets have been based at Tromsø and other northern ports which gained some importance from provisioning, processing, and other related activities.

The living provided by the traditional industries in northern Norway was never an easy one and the area has a long history as an exporter of surplus population. In 1939, per capita productivity was estimated to be only 50 per cent that of the rest of the country.⁴¹ Seasonal employments and small-scale operations in fishing, farming, and forestry militated against increasing productive efficiency, and attempts to transfer capital to develop other industries in the region were discouraged by its remoteness. The principal means of communication with southern Norway was by coastal steamers connecting the main northern towns to Bergen. Local steamers served communities located along the major fiords, with smaller centres being served only by fishing smacks, row boats, and later by motor boats.⁴² Inland communications were developed only in recent times. Land communication was extremely difficult because of the terrain, but the railway from Oslo has been slowly built northward and reached Bodø by 1963. The first rail connection between northern Finmark and the south was provided by the connection of Narvik to the Swedish railway system in 1903. It was not until World War II that highway and airfield construction began to bring major changes to the transportation and communications situation.

The general situation of the northern economy in the first half of this century has been summarized in the following terms.

"The region has known periods of prosperity, and it has known lean times. It was for long regarded as an area offering no possibilities for development beyond those associated with the fishing industry: and until relatively late in the present century, therefore, comparatively little capital investment was undertaken in this section of the country. This, of course meant that the basis for its further growth and development was equally poor. The most important economic function of the region was that of a supplier of labour to areas farther south — even beyond Norway's own borders."⁴³

This situation was abruptly changed by the German destruction of Finmark and part of Troms near the end of World War II. During the war, the towns of Kirkenes, an important iron mining centre, Vardø, and Vadsø were heavily bombed, but it was not until the German retreat from the Russians in late 1944 that the area suffered its worst devastation. Virtually the entire area of Finmark and northern Troms were evacuated and all structures systematically destroyed. "By May 7, 1945 the whole area between South Varanger and Lyngen ford had been entirely destroyed and depopulated. Of 75 000 people, 50 000 had been transported, the majority south of Tromsø and very many as far as Oslo and beyond."⁴⁴

The reconstruction and modernization of northern Norway was a high priority of government planning after the war. Redevelopment of the fishing and farming industries was an immediate objective, necessitated by the determination of the surviving displaced population to return home. But promotion of mining and new industrial activity, including development of hydroelectric power sites, was also undertaken in the hope of raising productivity and income to levels closer to the national norms. The latter policy included a strong commitment to urbanization and the elimination of the more isolated fishing settlements which were not considered viable.

Norwegian northern development policies since the war have passed through a number of transformations. The initial policies involved crude attempts to induce migration to larger centres through direct grants. These measures were apparently unsuccessful and provoked considerable controversy.⁴⁵ They were followed by a more comprehensible plan involving promotion of local development projects and outright subsidization of particular industries. The latter were early examples of an approach to regional development — "the growth pole approach" as it eventually came to be called — which was used in many countries during the 1950s and 1960s.

The main elements of Norway's northern development policies in the 1950s were embodied in legislation passed by the national parliament in 1951. These consisted of a set of special appropriations to finance public investments in infrastructure capital, a special development fund to support private ventures in the region, and a number of special tax incentives to encourage private investments in northern industries, especially those which were expected to be labour intensive.⁴⁶ The special tax arrangements were spelled out in 1952 legislation which permitted firms under certain conditions to deduct from taxable income funds set aside to finance expansion of industrial installations in northern Norway. Upon completion, the value of such installations could be written down for tax purposes by up to 75 per cent of the original amount reserved.⁴⁷

The 1951 development plan's most conspicuous single feature was probably its direct support of mining and metal processing, and in particular, the iron and steel works at Mo-i-Rana. Over half the public investments made in northern Norway in the 1950s went into development of this publicly owned and operated iron and steel complex. It was a typical product of post-war development concepts which emphasized capital investments, especially in heavy industries, as the solution to the problems of low income areas. The Mo-i-Rana scheme was particularly plausible in these terms for not only was it well located to draw upon local iron ore deposits, but it was also connected by rail to sources of coal and limestone. It was designed to use local hydroelectric power to heat its pig iron furnaces.⁴⁸ Furthermore, the fishing and farming areas of northern Norway were expected to supply much of the necessary labour force and an expanded vocational training program was launched to ensure the production of the necessary skilled labour for this and other new industrial developments. Iron mining at Rana, taconite at Sydvaranger, copper at Sulitjelma, and lead and zinc at Bleikvassli were also promoted as part of the overall program. The industrialization element of the plan also placed heavy emphasis on hydroelectric power projects in northern Norway.49 Through this program the total output of hydro power was tripled during the 1950s, with all the output being absorbed locally as a result of both an expanded rural electrification program and increased industrial consumption by the mining and mineral processing operations, including an aluminum processing plant at Mosjøen and new electrochemical operations at Glomfiord. It will be noted that the types of industries promoted under the 1951 plan were large scale and relatively capital intensive. This reflected a general trend in Norwegian post-war economic planning and was not confined to its northern development program. In a major study of Norwegian economic policy published in 1964, Faaland comments on this aspect as follows:

"The establishment of large corporations, particularly within the chemical and electro-chemical industry have been encouraged. There has been a general feeling that such large, basic industries will guarantee efficient production and also improve the foreign exchange position, most of their output going for export. Such large units also lend themselves more easily to Government planning and control, than do the great mass of independent enterprises catering to private consumption. Moreover, the Government has encouraged the establishment of large enterprises in industrially less developed regions.

"Similarly the Government has of late reversed the traditional Norwegian policy of strictly controlling the big foreign corporation operating in Norway. The former Secretary General of the United Nations, Mr. Trygve Lie, has been appointed as a kind of roving Ambassador with the task of attracting foreign venture capital towards new enterprises in Norway. This indicates a definite policy of encouragement for large scale enterprises as a means of securing efficient and stable production, as well as increasing the amount of foreign exchange at disposal for capital investments. Also, there have been cases where profitable industrial ventures have required such large investment proportions that the Government has found it necessary to participate directly, sometimes in the form of complete State ownership."⁵⁰

While the 1951 development plan for northern Norway clearly affected the area's income levels and diversified its economy, it was far from an unqualified success. By 1960 the whole approach, with its emphasis on industrialization and growth centres, was being widely criticized. Although productivity in the region more than quadrupled in the 1950s, both production and income per capita still remained considerably lower than in the rest of the country. The traditional outflow
of population continued and, if anything, became a more critical problem from the standpoint of regional interests in view of the number of newly educated and trained workers who drifted south with their new skills. Sommers and Gade note, for example, that the Mo-i-Rana complex, operated at a considerable annual financial loss by the state, tended to lose as many workers to the south as it could draw in from the declining agricultural and fishing sector. Thus, they report that "Mo . . . now serves more as a vocational training center than a regional growth center," as is also partially true of other north Norway urban centres.⁵¹

The strategy implicit in the Norwegian development plan of the 1950s was widely experimented with in a number of other countries and with generally similar results. A large literature has grown up around this strategy and, while it is complicated by a great deal of semantic confusion, we can now see something of the general difficulty which beset those who sought to overcome regional productivity differences through dramatic investments of the Mo-i-Rana variety. As Hansen noted in a 1967 article, "the more naively enthusiastic interpretations of the (development pole) theory would maintain that to generate economic growth in a region it is merely necessary to establish a large firm or several large firms, preferably in a relatively fast-growing industry."52 Experience in both underdeveloped countries and in less developed regions of industrialized countries has indicated that this is unlikely to generate a broad change in such an area's economy. However, such projects are likely to reflect political considerations of the moment but, once in place, motivate further public measures to save the project from failure. If public support is sustained over a long enough period, the desired objective may ultimately be achieved. To date, however, success has not been widespread and a more diversified strategy is favoured, which usually includes more emphasis on the gradual modernization of established industries and attempts to develop secondary processing activities based upon the raw materials available.

This was evident in Norwegian planning in the 1960s, which shifted its main efforts from the development of new industries in the north to the modernization of the established ones. The policy has continued to entail substantial public investments and initiatives in setting up fish processing plants and facilities to process agricultural products within the north. The success of these measures has depended in part on the ability and willingness of the population engaged in the traditional employments to expand output so as to make the operation of these new facilities economically viable. To this end, further public expenditures have been made on modern equipment needed to raise local productivity, and on technical and other educational programs. There is evidence, however, of some resistance on the part of northern residents to such changes and of some difficulties, for example, in maintaining and adequate flow of raw fish to the new processing facilities to permit their efficient operation. Shortages of local entrepreneural and management skills have also been noted.53

More recently a major policy conflict has arisen over offshore petroleum exploration which local fishermen claim will ruin the best inshore fishing grounds. At the same time the oil boom in southern Norway has been attracting young migrants from the north and some northern authorities have contended that oil exploration must be permitted there as well if this out-migration is to be checked.⁵⁴

Another major change in the development strategy for northern Norway has been the government's abrupt reversal of its earlier policy of urbanization. In part this reflects concern over the problems being experienced in the rapidly growing southern metropolitan areas, problems so severe that the government's new regional development program appears to be designed primarily to check the southward migration and perhaps only incidentally to industrialize outlying regions. The latter appears to have become a policy *instrument* in the national program rather than an objective for its own sake, although, unlike the earlier policy of concentration of population, there would appear to be few "losers" who would create political opposition to these measures, whatever their primary motivation.

Noting the serious housing and traffic problems being experienced in the major cities, the Norwegian Long Term Program 1974-77 states that the government "will give high priority to the goal of a decentralized pattern of settlement", with the short-term objective being, "a retardation of the rate of emigration to the central areas of high population density."55 Cognizance is also taken of the fact that depopulation of the outlying areas was creating problems there for those who wished to remain in the smaller towns and villages. The present policy declares that "opportunities for development should be available to centres of all sizes", and indicates its intention to promote decentralization "to areas of lowest settlement [of] those enterprises and measures which can be relocated without too many complications."56 A number of local centres were growing too rapidly and these would not be automatically preferred for types of activity that could be usefully decentralized, while others, particularly in the poorly developed parts of the country, would receive active state support. The instruments by which this is to be achieved include location of public institutions and enterprises in these centres, public infrastructure investments in such districts "in order to improve their attractiveness to secondary and tertiary industries," and subsidies to primary and other industries, especially labour intensive ones located in the outlying regions, with these being based possibly on operating cost differentials among the various regions. Direct controls over industry location and a system of geographically differentiated employer's dues payable under the social security system are considered as means to encourage private firms to locate in the less conjested regions.57

Whatever the economic merits of the new regional policy in Norway may be, it seems to be politically easier to pursue than the former policies of promoting the depopulation of long established rural areas and the favouring of large-scale industrial enterprises (especially private and foreign corporate enterprise) in a state with a long tradition of rural culture and socialist ideals. The trends of urbanization and shifts from the "rural" primary employments to the secondary and, even more strongly, to the tertiary (service) industries are now strongly established. The part of the labour force employed in the primary industries of northern Norway fell from 42 to 23 per cent between 1950 and 1966, increased slightly in the secondary industries from 26 to 30 per cent, and increased in the tertiary industries from 32 to 47 per cent.⁵⁸

While the population of northern Norway has continued to grow, reaching over 450 000 in 1971, this has been in spite of a persistent annual outflow of some 2 000 to 3 000 young people who go south.

Although sub-national governments in Norway have unusually wide taxing and administrative responsibilities, economic development policies appear to be largely determined and administered at the national level where they constitute an integral part of overall national economic planning and budgeting. As Seip notes, "It is difficult to distinguish between regional policy and national economic policy . . . because regional problems concerning settlement pattern and industrial structure are so widespread that they also represent vital national problems."59 The organization of trade unions and employers' associations, and the importance of publicly-owned industries in the overall industrial structure of Norway also contribute to a national orientation in public policy determination. Nevertheless, the district and county institutions, even in the relatively sparsely populated northern counties, are incorporated into the planning system, both as the source of public opinion and as administrative bodies for particular programs. This is especially true since the regional planning offices established under the Directorate of Labour have been reorganized and incorporated with the county planning departments which are now responsible for both physical and economic planning.60

These departments coordinate planning activities of the lower (commune) organizations and in turn pass on planning recommendations to the Regional Planning and Development Department of the national Ministry of Local Government and Labour, the main coordinating body for regional planning in Norway. This ministry works closely with the Ministry of Finance which produces the annual national budget and the 4-year economic program.⁶¹

In 1969 an inter-county planning commission was set up to coordinate planning in the three northern counties.⁶²

In general, however, the structures and processes of Norwegian northern development policy determination are embedded in a broader system of national economic policy determination and represent an adaptation of traditional representative institutions, such as the county governments, to a moderate form of national economic planning which tends to subordinate market to political processes of decision making.

Sweden

Northern Sweden is conventionally defined as the counties of Norbotten, Västerbotten, Jämtland, Västernorrland and Gävleborg, which comprise the region known as "Norrland" (Figure III.3). While this definition is supported by tradition, others would be possible and, in fact, the area designated by the Swedish government as the "northern development area" extends further into the southeast than does Norrland. The area historically known as Swedish Lappland includes the counties of Norrbotten and Västerbotten.

The geography of northern Sweden is complex, including as it does the distinctive physical regions of the Bothnian Lowlands, the Northern Plateau, and the Western Mountains. The land falls from the mountains to the sea coast, creating a number of important hydroelectric sites. Much of the more northerly part is an old sea bed with soils suitable for production of a variety of crops. Although Norrland lies north of the 60th parallel, grain farming is technically feasible in much of the region. In recent times, however, this has been abandoned in favour of more profitable livestock raising and dairying as the main agricultural pursuits. The region is heavily forested, for the most part with coniferous species.

In terms of climate and, in some respects, topography, much of Norrland resembles the southwestern and central areas of Alaska.

In the late 17th century the native Lapp population of Norrland was supplemented by settlers attracted from the south by the possibilities of a mixed farming and fishing life along the coast. Settlers slowly moved inland and northwestward along the rivers until this inland migration was checked by the establishment of a Lapp region boundary to reserve the land now comprising the inland three-quarters of what is now Norrbotten and Västerbotten.⁶³ Public policy thereafter promoted settlement throughout the rest of Norrland, although in 1867 a further restriction was placed on agricultural settlement in the northwest where farmers and Lapps had come into conflict over land use. In the 19th century a scattered pattern of agriculturally-based service centres arose, especially near railway junctions, and a number of small industrial towns also developed in conjunction with exploitation of mineral and forest resources.⁶⁴

During the years between the World Wars, Swedish policies to promote northern agricultural settlement were much the same as in central Canada. Planned colonies were established, loans and subsidies were available to support individual settlers, and there was a special program to establish small farmers on state-owned land in the north. The motives behind this settlement program were mixed. In part it was a device to reduce emigration from Sweden, but it was also a device to strengthen Swedish sovereignty (and defences) in remote areas and to establish a local labour force to work in the forest industries being promoted in the north.⁶⁵ These policies continued until about 1955 when they were replaced by a program of rationalization intended to promote agricultural efficiency by eliminating farms of sub-optimal size and by encouraging specialization within agriculture and forestry.⁶⁶

Long before this change of policy, however, Norrland had become a problem area suffering from underemployment, lower than average incomes, and high unemployment. The population grew more rapidly than local labour markets and a steady flow of northerners migrated to the more rapidly developing southern areas. This trend was established by the beginning of the century and since 1915 total population growth in Norrland as a whole has been slight despite the relatively high birth rate. Since World War II, rural depopulation and the migration of young people out of the region has accelerated. Between 1950 and 1965, all the counties of Norrland experienced population increases below the average rate for northern Europe; Jämtland and Västernorrland, in fact, suffered population declines. The population of Jämtland declined annually during the 1960s. Each year between 1961 and 1964, Norrland as a whole lost from 4 500 to over 7 000 persons. (In 1960 the total population of the region was 1.2 million.) Declines of similar magnitude were experienced again in the late 1960s. The population level of Norrbotten has proved to be particularly volatile in recent years, closely reflecting, it would seem, the conditions in the iron-mining industry there.

The basic economic problem in northern Sweden is one of regional disparities in what is by international standards a highly developed and prosperous industrial state. While part of Swedens' policies toward the northern areas may be seen to derive from an interest in developing the potential contribution they make to national economic growth, the main emphasis is on dealing with the social issues raised by the inability of the north to keep pace with the material progress of the south. In very broad terms, this reflects the disadvantage of the north relative to the rest of the country in adapting to the structural changes which occur in any economy undergoing continued rapid industrial development. The shift of employment opportunities from agriculture, fishing, and forestry to manufacturing and the service industries has everywhere encouraged rural depopulation. The growing new mining, hydroelectric power, and forestry industries in such areas do not provide much employment because of the low labour intensity of such industries. At the same time, technological advances and the use of more capital intensive techniques in farming and fishing accelerate the displacement of labour from the traditional occupations, as do other measures such as farm consolidation programs which are intended to raise per capital income levels in the "backward" sectors of the economy.

Since 1940, the Swedish economy has undergone significant structural change: agriculture has declined markedly in importance, while general administration and professional services have increased. In 1970, manufacturing employed 29 per cent of the economically active population, while services (excluding utilities, commerce, construction and transport-communications) accounted for another 25 per cent.

The Norrland economy, however, has a somewhat different sectoral emphasis, and is worth examining on a county-by-county basis. Gävleborg has a higher percentage than the nation of its economically active population employed in the manufacturing sector (35 per cent compared to 24 per cent). The southern part of the county is closely connected with the Bergslagen district and is dominated by iron and wood industries. Forest products industries, especially pulp and paper, are situated further north along the coast.

The coastal pulp and wood industries maintain Västernorrland's dependence on manufacturing at around 26 per cent, near the national average.

Jämtland has only 14 per cent of its economically active population employed in manufacturing, while the agriculture-forestry sector accounts for 18 per cent (as against 8 per cent for Sweden). A relatively large percentage of the population of the county is employed in the service sector.

The coastal forest industries in Västerbotten manage to provide manufacturing employment for about 20 per cent of the county's employed population. Agriculture (and probably more importantly) forestry together account for 14 per cent of the economically active population, compared to the national figure of 8 per cent. Västerbotten's copper and base metals mining employ another 2 per cent.

The economic base of Norrbotten county is iron-ore mining, which accounts for 7 per cent of the county's economically active population; the comparable average for Sweden is 1 per cent. The transport, storage, and communications sector, presumably reflecting the impact of iron-ore, railways, and the port facilities at Luleå account for 10 per cent of the county's employed population, compared to 7 per cent of the national population. Agriculture, forestry, and services are more important for Norrbotten than for the Swedish economy as a whole. Manufacturing (coastal forest products) accounts for only 15 per cent of the gainfully employed while the national figure is 29 per cent.

Looking at the major industries of Norrland as a whole, it is evident that important changes have occurred in their organization and performance in recent years. Agriculture is strictly limited by physical conditions. Forty-five per cent of northern Sweden is uncultivated mountain and bog, 53 per cent of the land is forested and less than 2 per cent is arable. Soil considerations and altitude problems concentrate Norrland's farming along the coast and around Lake Storsjön (central Jämtland).⁶⁷ The matter of latitude must also be taken into account: Norrbotten's growing season is only 3.5 month long.⁶⁸ As might be expected output per unit of land also decreases as one moves north.

Much of Norrland's agriculture is based on livestock fed on local fodder crops, although there is increasing attention to dairy farming. The sale of animal products provides about 60 per cent of the cash income of Norrland and Swedish farmers, but the bulk of the remaining agricultural income comes from forestry in the north and the sale of vegetable products in the south. Average farm income in Norrland is about half the national farm average.

Small farms are much more important in the north than in the rest of Sweden, although since 1950 the government has been encouraging the consolidation of small unproductive farms.⁶⁹ In the mid 1960s agricultural productivity was considered to be increasing at a rate of 5 to 6 per cent per year.⁷⁰

Swedish agricultural prices are fixed by parliament and maintained through a system of flexible import fees. Prices are fixed so as to maintain farm incomes at levels comparable to other occupations, and to maintain a degree of self-sufficiency in food production.

Farming in Norrland has long been associated with operations in the pine and spruce forests of the region. During the second half of the 19th century, private companies bought large tracts and subjected them to serious overcutting to supply a rapidly growing sawmilling industry producing for expanding domestic and foreign markets.⁷¹ Most of the sawmills were located on the coast of the Gulf of Bothnia, where they had easy access to supplies of imported coal. After 1872, the pulp industry began to rival sawmilling in importance.

Ownership of Swedish forests varies from county to county even within Norrland, but in contrast to the Canadian situation, private ownership is extensive. In 1971, ownership in Sweden as a whole was distributed as follows:⁷²

	per cent		per cent
Crown Forests	17	Privately Owned Forests	51
Public Forests	4	Other	3
Joint Stock Co. Forests	25		

In the three southern Norrland counties, however, probably as a result of the 19th century sawmilling experience, companies and individuals hold about 44 per cent of forest land, while crown and public forests total only from 5 to 9 per cent. In the two most northern counties the importance of private holdings decreases, while that of the state increases, so that in Norrbotten something over 50 per cent of total forest land is held as crown and public property.⁷³ Nevertheless the rate of cutting is now carefully controlled in both the public and the private forests.

As in Canada, tree growth is slow in northern Sweden. Although they comprise close to 60 per cent of Sweden's total forest domain, the northern forests account for only about 25 per cent of the total value of standing timber.⁷⁴

In recent decades a number of changes in techniques have made forestry a year-round operation in northern Sweden. The industry is increasingly mechanized and road transportation is reducing the former heavy reliance on the river systems. All these changes have tended to discourage Norrland farmers from engaging in part-time forestry employment and have drastically reduced the industry's over-all demand for labour.⁷⁵

The emphasis in the Norrland wood-processing industries is now on the production of unbleached pulp and on sawn timber destined for export markets. Like its Canadian counterpart, the industry is sensitive to fluctuations in international demand.

Two Norrland counties also have significant mineral resources. Silver-lead-zinc ores are mined near Boliden and at Laisvall and copper at Kristneberg in Västerbotten county. Approximately 2 000 workers were employed in mining and quarrying in Västerbotten in 1970. More important are the high-grade, iron-ore deposits of Norrbotten at Kiruna and Gällivare and the low-grade deposits recently developed at Svappa-vaara which employ nearly 7 000 workers.⁷⁶

The large iron-ore deposits at Gällivare and Kiruna were first developed in the late 19th century when a railroad was built from Luleå and subsequently extended to Narvik. Open pit mining began at Gällivare in 1890 and at Kiruna 10 years later.⁷⁷

Although the initial development of both Gällivare and Kiruna was by private capital, including some foreign private capital (mainly British), a great political debate occurred in the late 19th century over whether such resource developments should be brought under public control to ensure their use in the national interest. As a result in 1907 the state acquired a 50 per cent interest in the firm operating the mines, and an option on the other 50 per cent (which it eventually took up 50 years later, acquiring an additional 45 per cent in 1957).

These events have been of great interest to Swedish economic historians and have also recently been studied by a Swedish political scientist, Bo Johnsson. Johnsson's work (in Swedish) has been reviewed by M. Fritz in the *Scandinavian History Review*, from which the following information has been extracted.78

Johnsson's study, which draws upon D.B. Truman's *The Governmental Process*, seeks to show how "different interest groups, such as iron works owners, North Bothnian members of Parliament, banks and private individuals acted in this complex and controversial question of resource ownership and control." In the late 1880s, strongly "protectionist" sentiments came to be influential in parliament and led to the adoption of policy measures designed to protect Swedish industry from foreign competition and to inhibit foreign investment in a wide range of Swedish industries.

The owners of the iron works of central Sweden in particular feared that their international competitive position would be threatened if Swedish ore were made available to foreign iron-makers. They consequently exerted pressure on the government to establish controls over the iron-ore mining concerns in the north. The first steps were taken when the state took over the railway from Luleå to Gällivare and, subsequently, constructed the line from Kiruna to Narvik.

Around the turn of the century the owner of the two big mines, G.E. Broms, began to experience difficulties obtaining enough capital to continue development of his properties. There was some indication that he might sell out to foreign interests. In 1901 the government consequently began preparations to take over the mines. "Enthused by patriotic motives, it received overwhelming support in principle from the press and discussion centred mainly on the form state intervention should take. Other extra parliamentary groups, notably Stockholms Enskilda Bank which had large credits tied up in the ore companies, called for nationalization as a means of freeing its risky investments."⁷⁹

Opposition to nationalization came mainly from Sweden's other major iron ore company, Trafik AB Grangesberg-Oxelosund, which apparently feared the competition of a state-owned rival. In 1903, nationalization of the North Bothnian mines was averted when the Grangesberg company bought them.

"Nevertheless, opinion in favour of partial state ownership grew, and so did the idea of controlling the export of Swedish ore by means of an export duty. Faced with the threat of a duty and of increased freight rates on the state railways the Grangesberg Company agreed in 1907 to a settlement. Under this the state obtained a half-share in Luossavaara-Kirunavaara and Gallivare, with an option on the other half (which was only taken up in 1957) and control over export quotas and freight rates. With the signing of this agreement the government considered that it had stood by its main principles, that foreign interests had been thwarted, that the Swedish iron trade had been protected and that the state would receive income from the ore companies. The chief immediate effect of the agreement was, however, to retard expansion of Swedish iron ore exports at a time of greatly increased demand."⁸⁰

State ownership in northern Sweden was subsequently extended to major parts of the forestry and electric power industries, although the mining company LKAB (Luossavaara–Kirunavaara Aktiebolag) remains, with the railways, the focus of publicly sponsored activity in the region. The Natural Resources Law of 1916 restricts ownership of real property by foreigners, and also of mineral deposits, water power, and shares in certain companies.⁸¹ Direct foreign investment is not normally permitted in banking, shipping and airline operations, or in natural resources.⁸² Because of these measures, foreign resource development in northern Sweden is virtually non-existent.

Since the 1920s, mining at Kiruna and Gällivare has been changed from open pit to underground operations. It is now completely underground, employing sub-level caving and trackless transport of the ore. Conversion to the latter technology in the 1960s had a large effect on the labour requirements – which declined from 3 200 to 2 100 employees.⁸³

LKAB developed the new open-pit mine at Svappavaara in the 1960s, a development which has often been compared to those in Labrador. The community, originally an old copper mining centre, grew rapidly to a population of 1 200 in 1971.⁸⁴

In an attempt to improve the chances of adequate job satisfaction among its employees, LKAB has focussed its recruitment efforts upon Norbotten county. Of 1 294 new recruits in 1956 for the Kiruna Mine 985 were from Norbotten and 642 from Kiruna area itself.⁸⁵

Several commentators pointed out that Kiruna is not an isolated mining camp, being well provided with services and amenities, ranging from shops and schools to recreational facilities and television. Daily air connections and cleared roads are maintained year-round to Luleå and Stockholm. Nevertheless, Kiruna has recently been the site of one of the few serious labour disputes to affect the nation since 1935. This occurred during winter 1969-70 and the issue seemed to be less one of pay than of frustration. One of the complaints voiced was that the union leadership was "too far away" in Stockholm. The workers sought to negotiate directly with the mine managers in Kiruna.⁸⁶

The high-grade Swedish iron-ore deposits in northern Sweden are among the most important in western Europe. As much as 85 per cent of the annual output of ore is exported.⁸⁷ The largest customers are located in West Germany⁸⁸ and in the United Kingdom where the Steel Company of Wales (part of the British Steel Corporation) is the biggest buyer of LKABS' iron ore.⁸⁹ Only a small part of the production is used locally at the publicly-owned NJA steel works at Luleå.⁹⁰

Hilton, in a 1972 article, has commented on the similarities and differences to be observed between the LKAB communities and those of Labrador.

"In spite of certain similarities in climate, scenery and resource base between the LKAB communities of Norrbotten and such Canadian communities as Schefferville, Wabush, Labrador City, and Gagnon, there are a number of differences. The rural depopulation of Norrbotten provides a different socio-economic context as does the involvement of the state in the county's economy. The Swedish subarctic centres are distinguished not only by their physical planning but also by the absence of foreign capital interest and by the concern with community. Even within the physical planning there are differences e.g. in the relative proportions of apartments and single family housing and in an apparent concern to give some quality and uniqueness to northern design. The communities are also different in terms of their ages and size.

"However similarities exist: the dominance of the single company which is export oriented and the virtual absence of the medium level entrepreneur. Everything takes place under the shadow of the iron-ore workings but relations between employer and worker have been rather paternalistic within the Swedish tradition of the bruk. The bruk is an isolated industrial settlement in which attitudes are rather different from those of ordinary factories and towns. Even the state owned LKAB has inherited this tradition of corporate welfare which has strong parallels in Canada. The problems of female employment opportunities and diversification of the economic base are also common to both countries."⁹¹

Transportation development has remained a critical factor in the efficient operation of the mining industry of northern Sweden, as has the generation of the electric power which is used extensively in the mining and processing operations of the region and as the source of motive power for the railway system. The main railway from Stockholm was built in 1860 by the Swedish government as a trunk line through the north, partly in an attempt to stimulate economic growth in remote areas.⁹² It reached Gällivare before the end of the century. A second north-south line was built in the interior by 1937.⁹³ Today approximately 95 per cent of Sweden's railway lines are state owned and operated.⁹⁴ The system is efficiently organized and equipped, with about 85 per cent of all rail traffic hauled by electric locomotives. About half of Sweden's freight is transported by rail.⁹⁵ Especially during the winter, when the northern ports are ice bound for 3 to 6 months, the railroads are vital to the forestry industry and the iron mines.

Because Sweden lacks coal and oil, the whole country relies heavily upon hydroelectricity. Norrland accounts for 77 per cent of the nation's hydroelectric power generation. Most of the power generated in the north is transmitted south via 380 kW lines.⁹⁶ However, Sweden's hydro potential is fast being exhausted and future demands are expected to be met through thermal power based on oil or nuclear power.⁹⁷

The rationalization of the northern farming, forestry, and mining industries after World War II was partly responsible, as we have seen, for the inability of Norrland to retain its growing population. Registered unemployment among the population of working age was some 10 times higher in upper Norrland in the mid 1960s than in the southern metropolitan areas.98 A chronic unemployment differential now exists. In view of the Swedish government's traditional reliance on market forces to allocate labour and other resources among different employments, and, presumably, among different locations in the country, it was only the size of the out-migration from Norrland, rather than the existence of such a movement, that caused it to be considered a problem. Indeed, Swedish labour market policy in the post-war years, and even in the 1960s, was focussed on "increasing the mobility of labour both geographically and between occupations."99 To this end, local labour exchanges were used to level out imbalances in labour supply and demand and the National Labour Market Board sponsored an extensive program to retain and to resettle the unemployed. These and other measures to combat unemployment were of national scope. Anti-cyclical investment funds and winter works programs were applied throughout the country to deal with such problems.

In Norrland such measures were unable to halt the depopulation of the countryside, particularly in the inland regions which had originally been settled with government support, and the southward drift of population as a whole. The British journalist, Michael Frayn, writing in 1974, noted that "The common shared experience of this century has been the bewildering move off the land into the towns. The drift continues, particularly out of the economically bleak North; up there the initials AMS, which designate the Swedish equivalent of the Department of Employment are said to stand for *Alla Maste Soderut* – Everyone Must Go South."¹⁰⁰

The 1959 Swedish Committee on the Location of Industry strongly advocated a policy by which the government would subsidize and in other ways encourage the location of firms in areas of high unemployment. In such "development areas" the government would subsidize the building or remodelling of industrial plant; provide credit guarantees and direct loans free of amortization for up to 10 years; subsidize power costs; and negotiate lower freight rates with the state railways.

This approach has been criticized on the grounds that it violated the basic criteria of allocative efficiency. Assar Lindbeck noted that measures which attempted to compensate certain regions for their lack of natural facilities for production, would result in an allocation of resources that is not consistent with the natural long-term development potential of the Swedish economy as a whole.¹⁰¹ If for reasons of market malfunctions or national defence it was desirable to increase industrial employment in the north. Lindbeck suggested that attention be given to the possibility of promoting the development of industries on the coast where prospects of success, particularly in the processing of raw materials produced in the north, would seem to be greater than in the interior hinterland. He also proposed that the structure of industry otherwise be allowed to follow the natural resources of the various parts of the country and that "the character of forest areas, natural reserves or recreational areas" be accepted as the comparative advantages of some regions. With respect specifically to Norrland he recommended that the government should.

"Make the greatest possible attempt to solve the unemployment problems in Norrland through moving labour away from these regions. By all means compensate labour generously for the inconvenience and costs associated with retraining and moving, in accordance with the principles now applied in Swedish labour market policy. If location policy actions are necessary in inner Norrland on account of the measures to promote mobility not being sufficiently effective, or owing to psychological reasons, institute measures that do not tie down industry for too long a period. In practice, this would mean that investments should principally be made in plants with a relatively limited amount of capital equipment and a relatively short life span – perhaps simple workshops for handicrafts and small industry."¹⁰²

Such advice, typical of the traditional liberal economist, was, however, rejected in favour of the policy proposed by the 1959 committee, although the plan was broadened to include all of the northern region, including the relatively rapidly growing centres, such as Luleå on the coast.

In 1965 the Swedish parliament approved a regional development policy which was to be applied for a 5-year trial period. Its main elements were a system of regional planning, information and guidance, and financial support. The latter was provided in two forms, loans and investment subsidies. These were aimed mainly at the Northern Development Area, an area including, but somewhat larger than Norrland, and comprising some two-thirds of the entire country. As a general rule, the subsidies were not to exceed 35 per cent of the total costs of a project and the sum of subsidies and loans were not to be more than twothirds of the total investment in buildings and machinery.

By 1970 over 900 million Kronor (\$180 million (1970)) had been paid out in loans and subsidies under the program and the government reported in that year that according to the estimates of firms receiving support, some 15 700 employment opportunities were thereby created.

The "planning" part of the regional devolopment program was mainly concerned with community planning, the objective being to create, through collaboration between the central government, local authorities and the business community, "an effective structure of community services in the form of schools, hospitals, roads and other communications as well as other public services".¹⁰³ The government instructed the provincial governors' offices and the planning council to formulate goals for regional development policy. These goals would serve as a uniform guide in each province when resources became available. While such an exercise might seem primarily a means of regulating competition among the provinces for the spoils of a federal development scheme, it was represented as a means of dealing with the type of problem Lindbeck had raised. The provincial plans would presumably support high level decisions about where the development aid should go, in the interests not only of combating short-term unemployment problems, but also creating long-term growth possibilities. How effectively such a reconciliation of short- and long-term planning considerations has been in Sweden is still difficult to assess. But the problem has been recognized:

"Questions of location and the impact of policy measures have to be evaluated with reference to their long-term national effects. Accordingly, it becomes the foremost task of policy to determine which areas shall qualify for government aid and which requests have to be ruled out because of profitability and long-range considerations. Unless each case is carefully examined on its own merits, the government will find itself inadvertently committed to misdirected investments, with all the adverse consequences this entails for community development, allocation of resources, and so on. The support programme must never conflict with the longterm goals established at Cabinet level for location policy, namely rapid economic growth and the best deployment of resources for the economy as a whole. If location policy is to attain the objectives outlined above, aid must be concentrated in communities of promising growth prospects and which can develop into important centers of commercial and cultural life."104

Following a review of the results of the regional development program at the end of the decade, the Swedish parliament decided to continue it "with a view to stimulating industrial activity in the northern parts of Sweden in particular."¹⁰⁵ Retaining the same emphasis as before, the support is primarily for investments in buildings, machinery, and equipment, acquisition of raw materials, and the relocation of enterprises in the General Development Area. Support for firms offering training programs was expanded and, beginning in 1971, a special form of transport subsidy was provided for rail and road shipments of over 300 km from places within the General Development Area. A special form of employment support was introduced in what is designated the Interior Development Area, mainly the interior regions of Norrland, by which firms were awarded a grant for each annual employee by which the labour force is increased.¹⁰⁶

A somewhat paradoxical feature of Swedish policy in recent years has been the extent to which the policy of promoting labour mobility has been conducted parallel with this stepped-up program of regional development. New educational institutions (including a technical institute at Luleå and a university at Umeå) and expanded training programs may be viewed as either measures to increase the employability of northern youth in the industries being promoted there or as means of making it easier and more likely for them to migrate to the south. Such migration is also promoted by resettlement grants and other measures which have long been in force. It is possible, of course, that both migration and industrial growth are necessary to meet the "Norrlands problem", although it is difficult to see how regional and national interests can be reconciled in the practical application of such a combination of measures. Again, however, the problem is recognized: the Government's 1970-71 review of the outlook for the economy to 1975 notes that regional imbalances are continuing as a result of what are, in effect, external economies available to firms operating in the more developed areas; and also because of the economy-wide shift from the production of goods to the production of services, which also favours the already more developed areas of the country. One section of the report (as summarized by the Swedish Institute) strikes a somewhat pessimistic note in regard to the problem.

"There is a risk that the regional tensions between communities and regions will be accentuated during the 1970s. This risk is discussed, for instance, in the light of the conflicts that may exist or be latent between regional development policy and other goals. Particular attention is paid in this respect to the demands inherent in a policy of growth and stabilization.

"It may prove possible, however, to counter the regional imbalances better than hitherto by directing regional policy along the lines followed by the Government in recent years. The report draws attention to the possibility of trying to create more favourable conditions for growth in a number of regions outside the three major cities. Substantial efforts would be required from the Government and local authorities in order to make this type of regional policy effective. The factors considered include the need to maintain a certain minimal level of service in sparsely-populated areas, as well as the danger of "growing pains" in the earmarked communities. On the whole, however, it does not seem likely that the regional tensions can be reduced appreciably."¹⁰⁷

Apart from the regional planning arrangements referred to above, one particular feature of the decision-making process in Sweden which stands out is the use of Royal Committees which are set up whenever an important policy matter is to be considered. Closely related to this practice, and probably one reason it appears to work well, is the extent to which various interest groups in Sweden are organized to participate in public decision-making processes. Tomasson notes that "in none of the modern societies are voluntary organizations as developed as they are in the Scandinavian countries, and the extent of organization is greatest in Sweden, which tends to be the model for Norway and Finland."¹⁰⁸

"The great organizations have close and cooperative relations with the government, yet all are jealous of their independence and sensitive to any kind of legislative regulation. Of particular and unique importance is the extent to which interest organizations of all kinds are brought into the legislative process, both to determine what kind of legislation is needed and later to comment on official reports prior to the enactment of legislation. Lobbying, as we understand it, is not necessary because of the general acceptance of the principle of consulting all groups affected by a given piece of legislation."¹⁰⁹

The *ad hoc* Royal Committees, while occasionally composed solely of members of parliament, are ordinarily made up of representatives of trade and industrial organizations, trade unions, civil servants, and other experts as well. These committees are appointed by the government and work according to directives which indicate the lines of enquiry to be pursued, the background to the policy matters involved, the scope of the investigation envisioned, and so on.¹¹⁰ The commisions often work for several years and have a large degree of discretion as to their methods and procedures. Thus, much of the work that in other countries is done by government departments is carried out in Sweden by these independent bodies of enquiry.¹¹¹ Because of the wide representation given to interested parties at this stage of policy formation, the various special interest groups in the country are said to be able "to use this device . . . at an early stage in order to reach agreement with political parties, with other groups and with administrators.¹¹²

A further opportunity for public discussion and interest group representations on policy matters is provided by the system of *remissyttranden* – memoranda officially presented on the basis of policy proposals actually made by the Royal Committees or other official bodies. These may be presented by administrative agencies of government, by the unions, farmers cooperatives or other organizations. How well these processes of consultation work in practice is, of course, difficult to determine, but they appear to have desirable effects on the overall decision-making structures and processes in Sweden. They probably help keep the ministries relatively small, create an open public forum for discussion of important policy issues, and probably minimize the amount of "backroom" influence peddling. They also enable parliament to retain ultimate decision-making responsibility without sacrificing the benefit of expert and technical knowledge.

Finland

The problem of delimiting "the north" in Finland is more difficult than in Norway or even Sweden. All of Finland lies north of the 60th parallel and, while the south is again the "industrialized" part of the country, it relies, like the northern regions, upon primary staple industries, notably forestry and agriculture. The other peculiarity of Finland is the extensive agricultural settlement of its northern regions. Commercial centres in northern Finland appear to have more vitality than the "outposts of the south" found in Canada and some other countries. The resulting absence of a sharp "north-south" distinction is reflected in Finnish public policies toward regional matters. While the Finns are becoming conscious of regional problems in recent years, their problems reflect "rural-urban" disparities rather than being "problems of northern development".

We have arbitrarily taken northern Finland to consist of the two northernmost provinces, Oulu and Lappi, which contain about 14 per cent of Finland's 4.6 million population in about one-half the country's total area (Figure III.4).

These provinces comprise a vast, level area of forested plains rising gradually from the coast to low interior plateaux. In a landscape similar to the southern parts of the Canadian Shield, stands of pine and a few other species are interspersed among lakes and peat bogs, and frequently clear and relatively fertile tracts of clay and loam soils.

The region is drained by the Oulu and, further north, the Kemi rivers. These have played much the same role as our own northern rivers, serving as the major transportation arteries of the area and, in more recent times, as sources of hydroelectric power. As transportation systems, they are useful today chiefly to the logging industries of the north. Highways and railways are used for freight and passenger travel.

The forests are the most important land resources of Oulu and Lappi. Sawmills, pulp and paper mills, chemical plants, and several associated engineering industries have grown up in the important coastal cities and in towns located along the rivers. Mining is beginning to play an increasingly important role in the region's economy. Deposits of iron ore, copper, zinc, chromium, titanium, and vanadium have been developed. Agriculture remains an important source of employment and income. Dairying, reindeer herding, and the growing of fodder crops are the main activities.

Soil and climatic conditions tend to deteriorate inland from the coast and toward the north, particularly the northwest where the terrain rises and becomes quite mountainous at the Norwegian frontier. The growing season declines from 166 days at 62° north latitude to 145 days at Rovaniemi on the arctic circle.¹¹³ Despite this, Finland probably has more settled agricultural land than any other country lying north of 60°. In part this may be attributed to greater human effort, Finland having less resource potential in the south than Norway, Sweden, the U.S.S.R., or Canada. It is also attributable to better climatic conditions. In comparison with the U.S.S.R. and the other Scandinavian countries, Fin-



land's low altitude helps maintain higher temperatures.¹¹⁴

Throughout Finland, and even in the north where one might expect agriculture to be more "extensive" in nature, small farm holdings are the norm. This is made feasible by the unusually close connection between farming and forestry in most districts and diversified dairying (and in the north, reindeer herding) combined with cereal and vegetable crop production. Such diversification makes intensive working of even the "cold farms" of the north economically feasible.

Finland was relatively slow to industrialize and the northern regions began to experience the impact of growing industrial demands for their raw materials only late in the 19th century. In the late 1870s, probably 80 per cent of the total population of Finland was directly supported by agriculture.¹¹⁵ At about this time sawmilling began to expand, particularly into the southern interior, although its progress was severely restricted by strong conservation measures. These were only gradually relaxed as it became evident that much of the country's standing timber was over-mature. By the 1880s pulpwood production was becoming an important new forest activity and as a result of investments in transportation, forest exploitation was carried into the eastern parts of the country and also north into Lapland. The original markets for Finnish forest products were largely outside the country and this pattern has continued, with lumber, and pulp and paper constituting the mainstay of Finland's export economy. By the early 1920s two-thirds of the Finnish labour force was employed in forestry and agriculture. In absolute terms, such employment continued to increase until the 1930s, although new sources of employment, in mining, manufacturing, and services, were by then overtaking it in relative terms. In recent years, about one-quarter of Finland's national product has been provided by the forest-based industries.¹¹⁶

World War II had a number of important effects on the Finnish economy. One was to accelerate modern industrial growth, notably in metal fabricating and machine-tool manufacturing needed to meet the U.S.S.R.'s war separations demands; the other was a major reform of land holding and a further expansion of the "pioneer fringe" of agricultural activity which was needed to resettle the largely rural population displaced from lands ceded to the Soviet Union.

Since the war the Finnish metal fabricating and engineering industry has become an important part of the nation's industrial structure. About 72 per cent of the U.S.S.R.'s reparations bill was for products of the engineering industry and for several years this forced the pace of the industry's expansion.¹¹⁷ The deliveries to the U.S.S.R. included a number of heavy engineering manufactures which had not previously been produced. It became necessary, therefore, to increase considerably the machine stock and to expand factory premises. The ship-building industry also had to be greatly expanded.

Later a large-scale electrification program, construction of a system of hydroelectric plants in Lapland and the mechanization of farming and forestry provided markets for the metal and engineering industry and eased the transition from war reparations to free-market production. Transport equipment and engineering industries have grown into the largest production branches of the Finnish metal-using industry both in labour-force employed and in value of production. The latter is now over 50 per cent of the value of the total output of the industry.¹¹⁸

Shipbuilding and railway rolling stock form the major production lines of the transportation sector. The leading products of the engineering industry are various kinds of machines and apparatus for the mechanical and chemical woodworking industry. Other product groups include earth-moving-machines, steam boilers, various motors, and engines. Finnish specialization in ice-breakers and paper-making machinery reflects some of the linkages between demands in the primary resource sectors and the manufacturing sector.

In the northern provinces, hydroelectric power developments, the pulp and paper mills, and the mines have created local demands for heavy equipment, including replacement parts and supplies. This has encouraged some decentralization of the metal and engineering industries to the north. The towns of Oulu and Kemi have attracted a considerable amount of such activity.

Loss of territory to the U.S.S.R. in 1944 faced the Finnish government with the task of resettling over 400 000 people, mainly farmers. Most of this was accomplished by land reform in the south, where neglected farms, church lands, and land held by other organizations or by non-farmers were taken over for the purpose. This pressure on land gave a further impetus to the clearing and development of new lands as well, however. Extensive government financial and other support was made available to a new wave of "pioneers."

In general the basic objective of Finland's agricultural policy has been to keep farm incomes comparable to incomes in other employments, while at the same time achieving self-sufficiency for the nation in the production of foodstuffs.¹¹⁹ A variety of price supports have been used to encourage specialization in others. Fertilizer use has been subsidized, capital investment subsidies paid to small operators, and import controls used to restrict foreign competition in the domestic market.

Such subsidy and subsidy-effect programs have been important to high-cost farmers in the north where substantial production and transportation subsidies have been extended to dairy producers in particular. Special support has also been given to encourage barley and rye production in these areas where the state grain-buying agency maintains somewhat higher prices than elsewhere in the country. The agency also enters into contracts for the production of meadow and root crops seed, timothy seed, and early grain varieties at premium prices in the northern parts of the country and makes purchases to support the cultivation of timothy seed.¹²⁰ A production subsidy for beef and pork is also paid through the slaughter houses in northern Finland.¹²¹

Using local hydroelectric power and responding to local needs, a state-sponsored ammonium and nitrogen plant has been established at Oulu. Nitrogen is produced to lessen northern Finland's dependence upon imported foodstuffs. This development is particularly important because of the nitrate deficiencies of the soils of Oulu and Lappi provinces, the distance of the area from alternative centres of production in the south, and the increasing willingness of farmers to use artificial fertilizers. ¹²²

Contrary to much North American practice, Finnish farmers have

tended to preserve their woodlots and to expand arable land by reclaiming wet areas rather than by clearing off standing timber. Land use is consequently rather finely balanced with waste land, cultivated land, and forests amalgamated in unusually productive, diversified, yet small holdings.¹²³

It is especially noteworthy that neither grain production nor special crops are of any agricultural importance. The almost complete absence of cattle and pig-breeding for the purpose of meat production is also a typical characteristic of the farm economy in northern Finland. As arable land amounts to an average of only 25 to 30 acres per farm, the necessity for a complementary source of income becomes readily apparent.¹²⁴ The forest provides the farmer with complementary income in two ways. First, the farmer-owned forests annually provide additional income from the sale of wood, which can reach 25 per cent of total farm income; secondly, the state-owned forests supply most Finnish farmers with an annual off-farm income, also amounting to 20 or 25 per cent.¹²⁵ During the winter months there is an increased need for forest workers. As a result of off-season earnings, farmers may accumulate funds needed to finance capital equipment, repairs, seed, and so on.¹²⁶ Thus, on the whole, forestry is an ideal complement to the farm economy in Finland, especially in the subarctic conditions of Finnish Lapland.

In addition to dairying, the major source of agricultural livelihood is reindeer-herding. Finland's Lapp population numbers around 3 000, many of whom are involved in the herding of reindeer. There are some 3 000 families involved in this industry of which 37 per cent are Lapps¹²⁷ (In this connection it is interesting to note that the Lapps have shown a much greater tendency to become integrated with the Finnish than with the Swedish or Norwegian societies.)

Some criticism has been made of the overwhelming dependence of northern Finnish agriculture on dairying. Several authors have suggested that specialization in dairying should be reduced in favour of increased production of grass and forage seeds for export and increased breeding of beef cattle and pigs.¹²⁸ They claim this switch would create new exports for Finland, raise the income of northern farmers, cut subsidy costs, and to some extent provide for import-substitution.

In northern Finland, forestry and forest products industries are the major employers and provide the economic basis for many of the cities in the north.

Forest land covers some 96 per cent of the north and about 80 per cent of southern Finland, but only 54 per cent of northern forests are considered productive compared to 68 per cent in the south.¹²⁹ Although the state owns approximately one-quarter of the forested area of the nation, state forests provide only 12 per cent of Finland's timber-producing capacity. Private owners control 78 per cent of this capacity; forest industries own about 6 per cent while communal and joint enter-prises control about 4 per cent. During the past 50 years the area of state-owned productive forest land has decreased by a third and the volume of growing stock by almost one-half. This may be attributed to grants of state forest land to refugees during the post-war settlement program. Most of the state-owned forests are in the northern regions

where logging operations have tended to be more difficult.¹³⁰

The growth of Oulu and Kemi as forest industry centres dates from the relaxation of state restrictions on forest operations in the 1860s and 1870s. The development of sawmilling at such centres was eventually followed by construction of sulphate cellulose plants using sawdust as a raw input. These were the basis for a pulp and paper industry which grew rapidly during the inter-war period. Many of the northern mills have either been state owned or have received substantial state support. Hydroelectric power availability, a local labour pool, the river systems for log transport, and good harbours in the area facilitated the development of this industry.

During the 1960s, fears of overcutting and concern over the future development of forestry prompted government implementation of an intensified forest management program. The MERA plan provided government financing and other assistance for silvicultural research, for drainage, fertilization, and road-building work. The ultimate objective of the program is to add some six million cubic meters to the cutting potential of Finland's forests by 1980.¹³¹

The north has shared in the generally steady growth of the Finnish forestry industry of the past decade, with the Kemi Valley being one of the most active regions. State ownership and participation in the industry is particularly important there. While much of the logging is carried on by small enterprises and even individuals, the processing activities are in the hands of large sawmill and pulp and paper organizations, several of which are publicly owned. The products of the region are marketed through central sales agencies in Helsinki, with most of the output going to foreign users, mainly in the United Kingdom. The U.K. absorbs some 45 to 60 per cent of the region's production.¹³²

Mining is a relatively small industry in Finland, its output being inadequate to satisfy the demands of even the domestic market, although there has been export of copper and zinc. The major deficiencies in Finland's basic resource endowment for modern industrial growth have been the lack of fossil fuels and limited supplies of iron ore. Mineral resource development has occurred throughout the country and there is no one region significant for its mining industry.

State involvement in mining and in mineral exploration has been extensive, particularly since 1960 when the Outokumpu iron-ore deposit was developed. Government agencies and publicly-owned firms have been active in finding and developing mineral resources, particularly in the north where major iron deposits have been opened up at Karvasvaara and Kolari.¹³³

In the 1950s industrial development in Finland began to outstrip the electric power generating capacity of the country. Because virtually all the hydroelectric potential of southern Finland had been developed (with one major plant lost to the Soviets), attention was shifted to the north where the Oulu and Kemi river sites were subsequently developed, despite two major problems: one was the problem of long distance transmission of electric power from the sites to major industrial users of the south; and the other was preservation of the capacity of the rivers to serve as floatways for the logging industry.

At present even the northern hydro potential of Finland has been

fully exploited and attention has shifted to development of alternative power sources. Discovery of uranium in Finland has encouraged plans to develop nuclear power facilities.

Transportation development in northern Finland has traditionally been based on the major river systems. Even with the advent of railways in the 19th century and the expansion of trunk roads in the 20th, the major routes tended to follow the river valleys. More recently, development of air services has weakened these traditional patterns of communications and, along with snowmobiles, has reduced the remoteness of the areas outside the main corridors, particularly during the winter months.

Much of the heavy freighting of northern Finland has been through the ocean ports. Attempts to maintain the flow of goods through these ports despite the ice conditions encountered has made Finland a leader in ice-breaking cargo vessels.

Rovaniemi, the capital of Lapland, is the inland transportation hub of the province. Its road and rail connections have made it the principal retail and wholesale trade centre of the region and an important centre as well for the slowly expanding tourist trade of northern Finland.

The demographic changes which have occurred in northern Finland since World War II reflect changes taking place in the country as a whole. As agriculture and forestry have become more capital intensive, labour surpluses have accumulated in rural areas despite declining birth rates and the migration of young people to urban centres. The secondary industries, construction and manufacturing, have absorbed part of the growing labour force, although the increasing mechanization and automation of these industries has reduced their labour absorptive capacity. As in other industrialized economies in the last two decades, the service industries have become the principal source of new employment opportunities. The general pattern of structural change in northern Finland has not been markedly different from that of the country as a whole, and indeed there has been some tendency for the differences that have existed, notably a heavier reliance on agricultural and forest industries in the north, to diminish. The patterns may be inferred from Table III.6 which shows the occupational distribution of the labour force in Oulu, Lappi, and the country as a whole for 1950, 1960, and 1970.

The population of Finland grew by more than 10 per cent in the 1950s, but in the 1960s by only 3.4 per cent. In the northern provinces, Oulu increased its population by over 13 per cent and Lappi by almost 23 per cent in the 1950s. In the 1960s both provinces experienced actual declines in population, Oulu by almost 2 per cent and Lappi by about 4 per cent. The change was due in part to migration to the south (and to Sweden), but also to an extraordinary decline in the birth rate. While this was a nation-wide phenomenon, it was particularly pronounced in Lappi, where the fertility rate fell by almost 48 per cent between 1960 and 1970, compared to a national decrease of 28 per cent. The decrease in Oulu was about 37 per cent.¹³⁴

The heavy outflow of pcpulation from the northern (and eastern) parts of Finland in the early 1960s and particularly the emigration of workers to Sweden caused the government to pay attention to what a Bank of Finland report refers to as an "unfavourable" phenomenon.¹³⁵

		Primary (Agriculture & Forestry)	Secondary (Manufacturing, Construction, Mining)	Tertiary (Trade, Transport, Services)
1950				
	Oulu	63.6	16.3	18.6
	Lappi	55.5	19.3	23.1
	Finland	46.0	27.7	24.9
1950				
	Oulu	52.7	20.8	26.2
	Lappi	44.8	24.2	30.4
	Finland	35.5	31.5	32.7
1970				
	Oulu	32.64	25.62	39.91
	Lappi	26.77	26.56	42.58
	Finland	20.25	34.28	44.08

 Table III.6 – Occupational Distribution of the Labour Force in Finland and Northern Provinces

Source: A. Naukkarinen, "Population Development in Northern Finland, 1950–68", Nordia, No. 8, 1969, p. 22, and updated from *Statistical Yearbook of Finland*, 1972, p. 47.

Much of the reason for this migration was found to be in "the existence of large disparities in regional income levels and differentials in unemployment rates."¹³⁶

Noting that the awakening of interest in regional growth policy in Finland "has not been brought about by a direct concern with the regional differentiation in the standard of living," and that "the historical pattern of growth has not been such as to show any special inherent weakness in spread effects." Kiiskinen also attributes the new policy to concern over the unemployment problem and to "disproportionate demographic development.¹³⁷

The first steps toward comprehensive regional policies aimed at counteracting these trends were taken in 1963 when a Regional Development Board was set up to prepare legislation to stimulate industrial growth in the less developed regions. Until then, Finland had relied on a number of *ad hoc* measures, not very well coordinated, in a way which one commentator suggests could be "regarded as a warning example."¹³⁸

One of the questions the board had to consider was the feasibility of adopting either a "growth centre" or a large "development area" approach to the problem of stimulating industrial expansion in the lagging areas. Initially, the latter approach was adopted, although it was considered at the time to be only a necessary expedient which would subsequently be modified. In legislation passed in 1965, designated three-quarters of the country as a development area and divided this into two sub-areas according to the relative degree of development and the kind of policy measures which would have to be employed.

Although there were mixed views expressed in the course of establishing Finland's regional policies concerning growth centres, the principle was in fact adopted. A review of the debate in the late 1960s noted that: "Industrialists are 'fairly unequivocally in favour of growth centres.' Politicians are divided, though the Prime Minister (of a coalition government), has declared himself in favour of concentration on a limited number of 'development points.' Common to many countries 'prominent politicians, scholars and civil servants have expressed their doubts over the possibility of any Finnish Government being able to select a small number of growth points to be developed at the expense of other areas. For such a selection to succeed, it would have to be based on criteria that were widely considered just and unbiased."¹³⁹

A measure of professional backing was provided for the growth centre approach by a transportation study which identified suitable growth centres on the basis of five criteria:

a) the population should be sufficiently large to form the basis for further development of market-oriented industries and commercial establishments; an initial minimum size of 40 000 inhabitants seems necessary;

b) the centre should include institutions of higher education as well as other cultural institutions;

c) the centre should show a tendency to develop by itself;

d) the cost of bringing the infrastructure into line with the requirements for future development should not be exorbitant;

e) the centre should be the natural economic centre of gravity for a regional population of over 250,000 people.¹⁴⁰

Finland has been fortunate to possess such centres scattered through its larger development areas, for their existence has eased both the economic and the political problems involved in devising regional development programs. The broad approach taken in the revised legislation of 1969-70 focusses infrastructure investments on the larger centres which seem to offer the best development potential, with the smaller places being planned as service centres providing educational. health, and other facilities for their surrounding areas. At the same time measures to promote the geographic and vocational mobility of labour have been adopted along with a set of incentives to encourage enterprises to establish or to enlarge businesses in the designated development areas. The latter incentives include depreciation allowances, and relief from income and property taxes; subsidization of private and municipal interest payments on conventional loans used for purposes of industrial expansion; transport subsidies, and a Regional Development Fund (KERA). The fund is intended to provide credit to support entrepreneurial activity, but it can also grant subsidies, subscribe to shares and to development and research of its own.¹⁴¹ Credit is made available to small, medium-sized and labour-intensive enterprises in particular. Fur farms, fish cultivation, market gardening, small workshop industries, and tourist businesses have been supported.

There is little about the Finnish regional development policies that are distinctive either with respect to approach or results. The latter have yet to be assessed and all reports emphasize that the policies are just beginning to take shape. In the light of experience elsewhere it seems unlikely that the measures adopted to date will have much impact on the future course of development in the northern provinces, where their main effect may be to contain the well-rooted political disaffection of a population which considers itself neglected by the rest of the country.

While the provincial political units are largely only administrative bodies in Finland, the northern areas have played an active part in Finland's traditionally lively party political life at the national level. The Communists and, after 1966, the Agrarian-Union-Centre Party have been predominant forces in the north. The latter party has been the party of the small freeholder, standing well to the right in the political spectrum. It tends to be interventionist in social policy, with the protection of the small individual from the large companies, governments, bureaucracies, and soon, as its widely professed goal. The party believes in free enterprise as the basis for society but has been a major advocate of state subsidies for the promotion of regional development and has supported attempts to alleviate regional disparities – particularly in its own strongholds.

The Communist Party support in the north is seen as a manifestation of the "backwoods communism" phenomenon.¹⁴² Its base lies in the disaffected farmers and foresters and mill workers of the north who feel that they have not gained enough of the benefits of modern life. Much of this feeling is analogous to the feelings of rural-urban alienation in other western nations.

As society has changed, the northern village culture of Finland has been brought into the mass culture society of the more urban south. Television has disseminated urban values and migration has contributed to the disintegration of family life. Bureaucratization and industrialization have changed the sphere of action for many of the more rural areas of the nation. As a result, some populist parties have gained strength in emphasizing these problems. The Communist Party has also been able to use some of these grievances and fears to increase its influence. Recently, as the Agrarian Union sought to broaden its base, it changed its name to the Centre Party. Many disaffected members sought other channels through which to express their views.¹⁴³

Within the context of Finland's peculiar form of combined presidential and parliamentary political system, the party organizations appear to be the most important elements in the political system. Their number, divisiveness, and parliamentary tactics have often resulted in the formation of weak coalition cabinets, but the system offers regional and other particular interests adequate means of influencing policy outcomes without going beyond the institutionalized political framework.¹⁴⁴

The Soviet North

The vastness and diversity of the northern regions of the U.S.S.R. raise problems of definition comparable only to our own. In the literature on the Soviet north we encounter the same terms we find ourselves using to refer to the Canadian north such as "polar regions," "the North," "the far north," "the near north". Particular regions in the north are referred to as the "Ob North," the "Yenisie North," and by other names which use a major physical feature or central place to identify some general area. Burkhanov ¹⁴⁵ catalogues some of the more ambitious attempts to delimit the area: "L. L. Breyfus, in 1928, proposed the July isotherm of $+ 10^{\circ}$ C as the southern boundary of the North. North of this line, a polar climate predominates and the line also corresponds roughly to the northern limit of forests and the boundary of permafrost."

"B. P. Alisov defines the Arctic as a climatic zone in which arctic air predominates throughout the year. The southern boundary of the Arctic zone, according to this definition, would run somewhere near the southern boundary of the tundra."

"L. S. Berg excluded the tundra from the Arctic concept, limiting it to the ice zone. Within those limits the Arctic would include only the Arctic islands and the Arctic Ocean."

"N. N. Zubov defined the Arctic as that part of the Northern Hemisphere in which ice and snow occur all year round on sea and on land (at sea level). Under such a definition only the northernmost regions would fall within the Arctic."

Burkhanov concludes that the most complete definition of the boundaries of the Soviet north is that provided by Slavin and we will follow the same for the purposes of this paper (See Figure III.5). Slavins' criteria of nordicity are as follows:¹⁴⁶

"(1) Location to the north of the long-settled and economically developed areas of the country and remoteness from the big industrial centres from which development of the natural resources of the northern regions could be initiated.

"(2) Harsh natural conditions inimical to the expansion of agricultural activity, which also made general development of the area more difficult as a result of long and cold winters, widespread permafrost, marshiness, etc.

"(3) Extremely low population density and a less developed industrial base, transport network and general economy in comparison with long settled areas.

"(4) A greater expenditure of man-hours in the exploitation of natural resources than would be required for the exploitation of similar resources in areas lying further south."

Accordingly, in the west, this region stretches from the Finnish and Norwegian borders to the Urals, lying north of the 60° parallel, with the Arctic Circle separating the "Far North" from the "New North." The region is subdivided into four political-administrative units: Murmansk oblast, Arkhangelsk oblast, Karelian Autonomous Soviet Socialistic Republic (A.S.S.R.) and the Komi A.S.S.R. (See Figure III.6). This definition is more restrictive than many, which often include Vologeta oblast and sometimes even the Leningrad area. The latter, a highly industrialized area, is included in the economic planning region called the "Northwest," whereas for our purposes the term "northwest" will include only the northern part of that region.¹⁴⁷

In the east, Slavin includes the Yamalo-Nenets and Khanty-Mansi national areas (Okrugs) of the Tyumen oblast; the northern areas of the Tomsk oblast; the Taimyr and Evenk National Okrugs, the Turukhansk and Igarka districts of Krasnoyarsk Territory; the Yakut A.S.S.R., Magadan and Kamchatka regions, the northern districts of Irkutsk, Chita, Amur and Sakhalin regions, the Buryat A.S.S.R. and Khabarovsk Territory.





SOUTHERN BOUNDARY OF THE SOVIET NORTH

Figure III.6 - Political Subdivisions of the Soviet North



	Area in thousands of km ²	Populat in thou accordi January census Total	tion sands ng to 7 1970 Urban	Percent- age urban	Density of population persons per km ²
Northern areas				·	
Karelian A.S.S.R.	172.4	714	491	69	4.1
Komi A.S.S.R.	415.9	965	598	62	2.3
Murmansk region	144.9	799	708	89	5.5
Arkhangelsk region including	587.4	1 402	921	66	2.4(3.3)*
Nenets national area	176.7	39	21	55	0.2
Total for European north	1 302.6	3 880	2718	70	2.9
Contiguous areas to the south					
Vologda region	145.7	1 296	616	48	9.0
Leningrad region	85.9	5 386	4 821	90(61) ^t	62.7(16.7) ^t
Perm region	160.6	3 024	2 031	67	18.9

The distribution of population among these areas and some recent population trends are shown in Tables III.7-III.10.

Table III.7 - Population of the European North of the U.S.S.R.

*Excluding Nenets National Area.

*Excluding Leningrad. Source: S.V. Slavin, The Soviet North: Present Development and Prospects, Moscow, 1972, p. 47.

	Area in thousands of km ²	Populat in thou accordi January census Total U	tion sands ng to / 1970 Pe Urban age	rcent- e urban	Density of population persons per km ²
North of Western Siberia including national areas of	1 513.4	561	283	51	0.4
Khanty-Mansi	523.1	272	171	63	0.5
Yamato-Nenets	750.3	80	34	43	0.1
North of Eastern Siberia including national area of Krasnoyarsk Territory:	1 629.7	187	164	88	0.1
Evenk Taimyr (Dolgano-Nenets)	767.6	13	4	28	0.02
including the town of Norilsk*	862.1	174	160	92	0.2
ditto, without Norilsk	862.1	38	24	62	0.04
North-East of the U.S.S.R. including:	4 811.8	1 378	944	69	0.3
Yakut A.S.S.R.	3 103.2	664	375	56	0.2
Magadan Region including	1 199.1	352	263	75	0.3
Chukotka National Area	737.7	101	70	69	0.1
Kamchatka Region	472.3	287	219	76	0.6
Including. Koryak National Area	301.5	31	11	34	0.1
Total for the Asiatic North	7 954.9	2 1 2 6	1 391	66	0.2
Contiguous areas to the south					
Novosibirsk Region	178.2	2 505	1 638	65	14.1
Southern part of Tyumen Region	162.0	1 055	485	46	6.5
Southern part of Tomsk Region	76.9	576	394	68	7.5
Southern part of Krasnoyarsk Territory	771.9	2 775	1 667	60	3.5
Southern part of Amur Region	148.0	718	449	62	4.8
Southern part of Khabarovsk Territory	329.6	1 187	1 002	84	3.6

Table III.8 - Population of the Asiatic North of the U.S.S.R.

*Norilsk: 136 000

Source: same as Table III.7, p. 48

Administrative Region/City	1959	1970	Average Annual Percent Change
Komi A.S.S.R.	806	965	1.8
Murmansk Oblast	568	799	3.7
Yakut A.S.S.R.	488	664	3.3
Magadan Oblast (incl. Chukchi N.O.)	236 (47)	352 (101)	4.5 (10.4)
Kamchatka Oblast (incl. Koryat N.O.)	221 (28)	287 (31)	2.7 (1.0)
Khanty-Mansi N.O.	124	272	10.9
Norilsk	118	136	1.4
Yamal-Nenets N.O.	62	80	2.6
Nenets National Okrug	46	39	-1.4
Taymyr National Okrug	33	38	1.4
Evenki National Okrug	10	13	2.7
Total	2 712	3 645	3.1

Table III.9 – Population Change in the Soviet North, 1959–70

Table III.10 - Peoples of the North

Nationality	Population (thousands) 1959	1970	
Nenets	23	29	-
Evenks	25	25	
Khants	19	21	
Chukchi	12	14	
Evens	9.1	12	
Nanavans	8.0	10	
Mansi	6.4	7.7	
Korvaks	6.3	7.5	
Dolgans	3.9	4.7	
Nivkhs	3.7	4.4	
Sel'kups	3.8	4.3	
Ul'chi	2.1	2.4	
Saamis (Lapp)	1.8	1.8	
Udegeys	1.4	1.4	
Itel'mens (Kamchadal)	1.1	1.3	
Eskimo	1.1	1.3	
Kets	1.0	1.2	
Orochi	0.8	1.1	
Nganasans	0.8	1.0	
Yukagirs	0.4	0.6	
Aleuts	0.4	0.4	
Entsy		<u> </u>	
Negidals		—	
Oroks		—	
Chuvantsy		—	
Tofalars		—	
Total of Small Peoples	130	151	
Komi	287	322	
Yakuts	233	296	
Total	650	769	

Source: North, March April 1973, vol. 20, p. 31

The European north was initially "developed" largely by foreign commercial interests, which sought to exploit its timber, fish, and fur resources by way of the arctic sea coast. The region was not effectively linked to Russian development until the end of the 19th century when railways were built from the central parts of European Russia into this resource hinterland. As late as 1913, the principal industry of the area, forestry, was largely financed and controlled by foreign firms, and most of its output was exported directly to marekts in Great Britain and other western European countries. The other major 19th century products of the area were fish, caught in the northern coastal waters, and salt, iron, and copper. Agriculture was limited to small areas of fertile soil in the southern parts of Arkhangelsk region, the Komi A.S.S.R., and Karelia.

Construction of railways into the area around the turn of the century was apparently attributable more to military than commercial considerations. Both major lines, from Vologda to Arkhangelsk and from Petrozavodsk to Murmansk were built at public expense. Murmansk and Arkhangesk subsequently became import ports for the export of grain and other commodities from the south and east and for the import of goods from northwestern Europe.

Since the revolution, the basic industrial structure of the European north has changed little. Agriculture has remained limited to production for mainly local markets and the traditional hunting, fishing, trapping, and reindeer herding occupations have been continued by some of the native peoples such as the Nentsi and Komi. State and collective fur farming has been developed in conjunction with the reindeer herding and fishing activities in some areas. But, apart from this "domestic economy," the area continues to specialize in forest products (which account for about a third of the gross value of production there), shipbuilding, and mining for export. Instead of this output going largely to foreign markets, it now goes to domestic users located elsewhere in the U.S.S.R. The main linkages are with the Leningrad industrial centre but many products go to more distant areas as well. The principal new resource developments of the area are the coal, oil, and natural gas of the Komi A.S.S.R. and the nickel and apatite/nepheline mining and related processing industries of the Murmansk Region. Sawmilling is now rivalled by pulp and paper production in the Karelian A.S.S.R. and forest product "complexes" have been developed in the Arkhangelsk Region and, most recently, in the Koma A.S.S.R.¹⁴⁸ The latter had no reliable connection to the central part of the country until the Pechora Railway was constructed in the early 1940s. The large coal deposits of the Pechora basin have been an important resource supplying iron and steel mills of the south despite relatively high production costs. Intensive development of these deposits was necessitated by the loss of the Donets coal fields to the Germans during World War II. Hydroelectric power production in the European north has only recently been integrated with the national system and has consequently been developed to meet local energy requirements of the pulp and paper and mineral processing industries rather than to supply outside users. There has, however, been a scheme to divert northern water resources to sustain power production and to provide other benefits in the south.

The plan envisions interconnecting the Pechora, Vychegda, and Kama rivers.¹⁴⁹

The Siberian north is much more extensive, more sparsely populated and generally less developed than the European north. Like much of northern Canada and Alaska, its early contacts with the commercial world of the west were through the activities of sea-borne commercial traders, whaling fleets, and fishing vessels. The northern Pacific access to Siberia was utilized by American traders in the mid-19th century who traded for the furs, mammoth bone, and other products of the interior regions through the coastal dwellers. Later in the 19th century the Japanese also became involved in this trade and in the whaling and fishing operations conducted in the surrounding seas. Communication between central Russia and much of Siberia was difficult even after the Trans-Siberian Railway was constructed in the 1890s. The main hope for linking the area commercially to central Russia lay in developing the northern sea route which, through connections with the Ob and Yenisei rivers, offered a low-cost means of transporting Siberian grains and other products to markets in the west. Agricultural settlement in Siberia began in the 1880s, but its development was set back by technical and political difficulties encountered in devising economical means of transporting its products to western markets. In a situation remarkably similar in some respects to that which western Canadian farmers found themselves in at the turn of the century, Siberian producers sought a cheap sea-route for their output, but were frustrated by the need for heavy investments in specialized shipping and handling facilities and by the political opposition of landowners in the central areas to such developments. Siberia's grain producers were also interested, of course, in the possibilities for importing machinery, equipment and supplies by such means as well, an interest which again conflicted with that of commercial and industrial entrepreneurs in the central regions who feared that development of the northern Siberian ports would favour foreign suppliers of such goods. These fears were validated in the vears preceding World War I when the Norwegian-owned "Siberian Steamship Manufacturing and Trading Company" succeeded in obtaining free access to the Siberian market for its shipping service across the Kara Sea. The northern sea route was subsequently further strengthened, for military reasons, by the Czarist government, but communication with the far eastern regions remained poorly developed until well after the revolution when the committee for the Northern Sea Route was set up to organize a regular transportation service between the European north and the Ob, Yenisei, Lena, and Kolyma river areas. In the 1920s a considerable export trade in Siberian timber was developed through this route and mineral developments, such as the copper-nickel mines near Norilsk, and the fisheries of the Kamshatka and northeast Siberian coast were all brought within the orbit of the central industrial system of the west.

Much of the Soviet thrust to exploit the resource potential of northern Siberia relied on the same large-scale monopolistic type of organization and control that has underlain Canadian northern development. The Northern Sea Route Committee was reorganized in the late 1920s as the "North Siberian State Joint-Stock Company for Trade and Industry" and charged with the task of developing the resources of the enormous Ob and Yenesei regions. It in turn was absorbed into an even larger organization, the "Principal Directorate for the Northern Sea Route" (*Glavsevmorput*) which in the 1930s was the principal body responsible for economic and social development in much of the Soviet north.

During the inter-war years the remoteness of the Siberian north was further reduced by the construction of highways and airfields in the region. In particular, construction of the road from the Angara river centre of Zayarsk to Ust-Kut on the Lena linked two of the main transportation channels in the interior while other roads into the southeastern areas served to open up a number of important gold, tin, and coal deposits.

Soviet northern development policy, like all public policy in that country, must be understood in the context of a political-administrative system that is founded on a theoretical base fundamentally different from that applicable in any of the "western" countries examined earlier in this study. If, as suggested earlier, we regard northern development as a special branch of regional development policy, the crucial issue involved in it must be the matter of resource allocation. If we see northern development as being based on "economic" opportunities in a region which has relatively plentiful land resources, but few capital and labour resources, the resource allocation problem is one of determining the appropriate extent and timing of capital and labour commitments to that region as opposed to all other spatial and temporal allocations of capital and labour that may be possible. In the economic systems of the west, traditional theory has assumed that these allocation decisions will be made blindly through the spontaneous interplay of "market forces". As we have seen, confidence in the ability of western systems to function "satisfactorily" in this manner has deteriorated and we have increasingly turned to political decision-making methods to determine such allocations. Despite attempts of economists and other planning experts to simulate "perfect market outcomes" as a guide to public decision makers, the theoretical justification of the allocations we make in these situations has ultimately come to rest on the legitimacy and performance of our political institutions. There are reasons, both theoretical¹⁵⁰ and practical, for us to question the adequacy of our institutions in this regard. We cannot be confident that the allocation of "development" resources to one area of the country rather than another is either economically efficient or otherwise "in the public interest". Nor can we be sure that the timing of these commitments is either efficient or just. This is as true in the Canadian and U.S. situations as it is in the somewhat more "planned" systems of Scandinavia.

The Soviet system is conceptually completely different. The problem is the same, but the theoretical foundations are such as to eliminate the impasse encountered in the western liberal-democratic systems over finding a substitute for the spontaneous market system of allocation to solve it. In the Soviet system the public interest is defined by the Party. Once the ultimate objectives of the system are so defined, the market mechanism and the political administrative mechanism are put to work on what amounts to little more, in principle, than the engineering prob-

lem of achieving those objectives with a minimum of social cost. In practice, it may be argued, this is not so different from a system in which the public interest is defined by a popularly-elected parliament. But the legitimacy of the Party's role does not rest on popular elections and the highest level evaluations are not necessarily arrived at by a majority vote. Thus, the "problem of the social welfare function" in western political economy is eliminated by relaxing the non-dictatorship requirement.¹⁵¹ This distinction is obscured by the fact that markets and elections do exist in the Soviet Union – but the operations of markets there no more determine the allocation of resources and incomes (even "in theory") than the elections determine the planning priorities of the Communist Party. However, whether or not the Soviet system in practice achieves a higher or lower level of satisfaction for the population than western systems achieve in practice is not a conclusion which can be inferred from a discussion of the theory involved. Thus, it is irrelevant to ask whether Soviet northern development policy has been "better" than our own - whether we mean by "better" either "more efficient" or "more just." All we can ask is whether any of their experience may be useful to us either in formulating our objectives or in devising methods of realizing them.

The Soviet decision-making structure consists of the state-party apparatus, a large number of research and scientific institutions, and various industrial enterprises. This structure is held together by a common commitment to Marxist-Leninist ideals, including belief in the validity of a centrally-directed economic system, plus an overriding concern with maintenance of national independence. Structurally there is no important difference between the way northern development policy is formulated and executed and the way the rest of the nation's economic and cultural programs are determined and implemented.

As defined in this study, the Soviet north is contained within the area of the Russian Soviet Federated Socialist Republic (R.S.F.S.R.), one of the 15 constituent republics comprising the U.S.S.R. within the R.S.F.S.R. there are 16 autonomous republics, 5 autonomous oblasts and 10 national okrugs, all subordinate to the administrative structure of the R.S.F.S.R., but independent of one another.¹⁵² The autonomous status of these units reflect, in principle, language groups, although in fact many of them now contain only a minority of persons speaking and writing the official national language.

The Soviet state apparatus and the Communist Party hierarchy are organized along lines which parallel the territorial-administrative system. The central elements of the state apparatus are the U.S.S.R. Supreme Soviet, the Presidium of the U.S.S.R. Supreme Soviet, and the U.S.S.R. Council of Ministers. The 15 constituent union republics and autonomous republics have counterparts of these bodies and, within these republics, the state system is completed by the local soviets. All these organs of state power and administration are organized hierarchically with "the strictest subordination of lower organs to the direction and control of higher organs."¹⁵³

The Supreme Soviets in practice tend to perform mainly formal functions. The local soviets have general responsibilities, with much of their work being handled by non-elected commissions or by executive committees. These committees are directly responsible to their own soviet and also to the executive committee of the next higher soviet, with this vertical line of responsibility leading up eventually to the U.S.S.R. Council of Ministers.¹⁵⁴

Local soviets in the R.S.F.S.R. are required by the constitution to "direct cultural, political and economic construction in their territory, draw up the local budget, direct the activity of organs of State order, assist the strengthening of the country's defence-capacity, ensure the observance of laws and the protection of the rights of citizens."¹⁵⁵

This unitary, hierarchical state structure is intended to carry out the political and economic decisions made by the Communist Party. The state apparatus exists solely for this purpose: "policy-making is the prerogative of the party, and the State apparatus exists only to execute its political and economic decisions."¹⁵⁶ Local Party organizations are responsible for adapting central policy to local conditions, which is accomplished largely, it appears, through party members exerting influence on the local Soviet agencies. While some use is made of formal directives to obtain compliance of agencies and enterprises with central decisions, since the Stalin era there has been a shift toward "incentive planning" and "administrative decentralization."¹⁵⁷

While it has been emphasized that power and decision-making authority in the Soviet system flows "down from the top" by way of the Party hierarchy, this does not mean that the decision-making process is insensitive to or unequipped to accommodate inputs from lower levels. "The Party leadership in a soviet-type system is the seat of economic power, and the planners as well as the administrators have a dependent position. The leadership's decisions are, of course, dependent to some extent upon the wishes of the Party members, the administrators, the technicians, and the public at large."¹⁵⁸

Hamilton suggests that western theorists now seem to agree that Soviet decision making may be understood in terms of an interaction between what may be termed "cooperative interdependence" – denoting the harmony of, coincidence of, or agreement among various organizations, groups, or individuals on the one hand and "conflict interdependence" – meaning interaction and compromise among conflicting organizations, groups, and interests on the other. The system, it suggests, may be termed "democratic centralism."¹⁵⁹ Decisions of the kind we are concerned with in this study must represent a resolution (within the basic constraints imposed by the principles of Soviet society referred to earlier) of a broad range of conflicting interests. Hamilton attributes these conflicts to the interaction of two complex elements in the decisionmaking situation:

"(1) strong groups (e.g., ministries, large enterprises) whose members are commonly bound to and yet differentiated from other groups by interest vested in their (a) functional status, (b) job and career identity rooted in division of labor among industry, construction, agriculture, services, administration, and their subgroups, such as electric power or chemicals or tractors, for example, (c) level of participation in decision making, (d) ethnic and national affiliation, (e) territorial identity with a region, a place, or an administrative unit; (2) aggregates of individual and group belief systems and hierarchies, each of which has common characteristics in thought, ideology, and action, but which differ from other aggregates or belief systems. These interactions cause conflicts among groups, or among individuals as representatives of groups, for scarce factors of production, especially capital."¹⁶⁰

The role of local Party units is consequently largely one of conciliating such conflicts while ensuring that the relative priorities of the central leadership are preserved.¹⁶¹ The latter priorities are usually formally established at the central Party Congresses and subsequently turn up in the statements of goals and objectives enunciated by various planning and research organizations.

With the growth of interest in western economics and the possibilities of using mathematic modelling techniques to find optimal solutions to planning problems, increasing attention appears to be given in the U.S.S.R. to resource allocation among alternative uses, a matter which, under the extremely centralized system of the Stalin era, attracted little attention. It is impossible to assess the impact of these techniques, but it seems likely that they have become part of the system by which various groups and organizations involved in locational and other decision making seek to influence their opponents and administrative superiors.

Apart from its great complexity and unwieldiness, the Soviet decision-making system suffers chronically from the problems of reconciling "horizontal" and "vertical" lines of conflict resolution. The maintenance of vertical lines of responsibility is of primary importance if the highest level decisions are to be implemented. At the same time, it may be necessary for separate ministries, or for other bodies, to compromise among themselves to resolve conflicts encountered at the lower levels of plan implementation. Such compromises may threaten both the larger plan and the higher level planners.

The problem is particularly acute in the case of regional allocations of labour and capital resources because of the large number of territorial and production enterprises that will be affected by such decisions. Khruschev's reforms of the early 1960s sought to resolve some of the difficulties in this area of policy by establishing a system of 17 major economic regions complete with special planning councils. These councils were to coordinate the actions of the various subregional administrative agencies; to study and integrate the productive forces in the major regions, and to provide planning advice to the local, republic, and U.S.S.R. economic planning bodies.¹⁶² A subsequent move back to centralization of economic decision making has apparently nullified much of the practical importance of these new regional institutions which, it is interesting to note, were strongly criticized on the grounds that they had only aggravated the problems they were intended to overcome, making the system more cumbersome through adding to the "parallelism in the activity of government bodies." Some observers have attributed the failure of the scheme to "the difficulty of reconciling the political-administrative with economic administrative rationality."¹⁶³

To these problems and issues relating to the spatial effects of investment and other allocative decisions must be added, of course, the problems which everywhere arise from conflicting industry claims. These are not always merely the expected conflict of administrative and other personnel over whose area of productive activity is to be expanded, with attendant career and other implications, they also arise over interindustry transfers of costs and benefits. A particularly vivid example of this is provided by the Ob estuary hydroelectric project. Timber, oil, and fishing agencies have opposed the project on the grounds that it will interfere with the productive activity based on the "proven resources" of the area. The power authorities argue in effect that the net benefits of the project would be positive.¹⁶⁴

Such conflicts over the use of natural resources, combined with the emerging concern over the environmental effects of industrialization, have forced Soviet decision makers to pay more and more attention to the matter of resource valuation. This has been a delicate subject in view of orthodox Marxist views on the "value" of land. Especially in the northern and eastern regions where production is heavily resource oriented, however, there has been a growing recognition of the need for some system of determining what amounts to the "cost" of land in alternative uses. Thus we find Khachatov writing in 1969, that "the natural resources factor must be considered fully on a par with other production conditions" and recommending that to this end "the economic evaluation of natural resources must be written into law and introduced in practice, while for certain types of natural resources, including minerals, water, and timber, a system of payments for their use should be introduced." Such an economic evaluation, is, of course, a euphemism for "price," as becomes clear when the writer goes on to claim that use of such evaluations would "greatly influence the correct decision when choosing among variants." In particular, he suggests that such a device would lead to "more economical decisions in the design of hydroelectric stations and will reduce the amount of land that is flooded," would make it "disadvantageous to leave timber resources on the bottom of reservoirs," and would lead mining and forestry enterprises to reduce waste by utilizing by-products.¹⁶⁵

The introduction of such economic concepts and modes of calculation has also challenged traditional Soviet approaches to the spatial allocation of capital and labour in recent years. These traditional approaches, upon which most of the U.S.S.R.'s northern development policies and programs have depended, were derived, in principle, from Lenins' call for a raw material orientation of industry and the development of industrial combines. From these general directives Soviet policy makers developed the concepts of the energy-production cycle and the territorial-production complex which, under Stalin, were cited as justification for many of the U.S.S.R.'s regional development strategies. These were seldom susceptible to narrowly "economic" justifications of the orthodox western kind, but were in accordance with strategic and political priorities of the Stalin regime. As one western writer has put it:

"Stalin, seeing his country surrounded by a hostile capitalist world, opted politically for 'socialism in one country' and economically for self-sufficiency. This strategy of economic independence – on both national and regional scales – naturally entailed preoccupation with domestic resource development, including Northern
resources, even if some of them could have been obtained more cheaply from abroad through foreign trade. Thus Stalin declared: 'The Arctic and our northern regions have colossal wealth. We must create a Soviet organization which can make this wealth available to our general resources in the shortest possible time.' This autarkic policy helps to explain the mining of Kola iron ore, Pechora coal, Norilsk nickel, Viliui natural gas, and Chukotka lignite, as well as the extension of crops and livestock so far poleward. At the same time some manufactures had to be imported from abroad to assist the industrialization and collectivization drives of the First and Second Five-Year Plans, and the foreign exchange necessary to buy these imports was in large measure acquired by USSR's primary sources of merchantable timber and precious furs, the Soviet North benefited from this dealing, too."¹⁶⁶

This approach was not without its critics, but during Stalin's time expressions of doubt were discreetly restrained. More recently, however, the conflict between "economic rationality" and "arbitrary" planning has resurfaced in the debate over the 21st Party Congress's proposed development of a huge complex in western Siberia, three complexes in the south, and four "combines" in the Siberian north. Criticism centred on fears that such a massive diversion of capital, labour, fuels, and other industrial inputs to Siberia would create serious shortages in the west, that the resource potential of the areas concerned in Siberia was inadequately known, and that the possible benefits of alternative applications of productive forces in the western part of the country had not been given adequate consideration.

The basic issue in this debate is a familiar one in the west. Advocates of economic rationality, who in the U.S.S.R. as here, are also inclined to the use of quantitative methods and mathematical modelling, are not necessarily in conflict with discretionary political decision makers so long as they advocate use of their methods not to determine basic allocation priorities but as lower inputs into the decision system. But the suspicions of the discretionary policy makers that use of such methods will somehow erode their discretionary powers are fuelled by the more extravagant claims made for the usefulness of their technology by the experts. Holubnychy, who refers to the proposed Siberian developments as "utopian and probably wasteful, if not simply reckless, projects," attributes the decision of the CPSU to proceed with them not so much to their appreciation of military or other non-economic considerations involved as to simple miscalculation and bad economic advice. These he attributes in turn to the Party's adoption of practical policies "without prior adequate economic analysis" and the "purely theoretical inadequacy" of existing Soviet methods of decision making in spatial economics.¹⁶⁷ After an interesting technical criticism of Soviet spatial economics, the writer concludes with what appears to be a definitive statement of the problem:

"To sum up, a predominant portion of current Soviet economic theory and almost all practice are not yet suitable for accurate economic analysis of the efficiency of comparative locations. It is not only that the Party and bureaucracy make purely 'voluntaristic' locational and allocational decisions; they also lack sound advice. The real process of spatial resource allocation is, as Mikoyan confided to Victor Perlo, an American 'radical economist,' nothing but pure struggle: 'This is not a strictly peaceful process. Each struggles for his particular plans and plant – inside the all-Union Gosplan and the Gosplans of the Union republics – until a decision is reached. Most issues can be smoothed out by argument and figures, but sometimes the government must make the decision."

He then succeeds, however, in missing the point of the whole debate by asking, "And what if the decision is wrong?"

At a more modest level of application, the use of regional planning models to explore possible solutions to northern development problems is well illustrated in a paper published by the Northern Field Party of the geography faculty at Moscow University. This paper is also interesting for its skilful attempt to reconcile traditional Leninist principles with modern input-output techniques of regional analysis. Specifically the paper demonstrates how models of demographic structure, of a system of industries, of places, and of the transport system could be developed to analyze the structure and planning of northern complexes. The conclusions reached favour an approach to northern development which discourages permanent commitments of capital and labour to northern locations. When the costs of infrastructure and other indirect costs are included in the calculations, the authors suggest that transportation should be by large-capacity aircraft, that structures should be prefabricated and air-freighted into the site, and that the work force should be brought in from outside on a "shift" basis. Thus, there would be no need for large towns or for an extensive network of auxiliary and service industries. In most cases, they conclude, "the end-stages of the technological production cycle, which are the ones that require large inputs of labor and energy, can be moved to the more developed parts of the country. The other phases of the technological cycle can be handled by a 'watch' settlement, leaving services and permanent housing to the more developed regions."¹⁶⁸ To date Soviet northern development policy, like our own, has tended to assume that development and "settlement" are necessarily related. While it is true that Soviet policy toward the native populations has taken cognizance of their claim to an equal level of living, the main principle guiding development policy in the north has not been the promotion of regional, but the promotion of nation-wide interests (as formulated by the Communist Party, of course). Thus, Slavin can write that "in the Soviet Union, where the entire economy is managed according to a single plan, the criterion of economic effectiveness is advantage to the national economy."¹⁶⁹ Because regions or localities do not "own" resources, interregional transfers of labour, capital, and other produced goods and services are justified and indeed required by the basic principles upon which the state is founded. There has been some dissatisfaction with this process in practice, particularly in areas such as the Ukraine which appears to be systematically used to subsidize transfers to residents of other areas.

Given the recognized hardships involved in northern living, a variety of methods have been used to increase, or to maintain, the labour force of the northern regions at the level required to achieve the production levels decided upon. These have included the use of convict labour, appeals to patriotism, and various incentives.¹⁷⁰ Recent incentives have been of two types. One is a wage supplement to offset higher living costs, which may range from about 6 per cent in the western areas to more than 27 per cent in the far east.¹⁷¹ To these are added some special benefits and wage supplements designed to attract specialists to the north. These may be scaled according to the worker's length of northern service, and the remoteness and climate of the area. Slavin suggests that as a result of such measures, "the total earnings of a worker who has spent several years in the north are two or three times higher than those of a worker of an identical category in the other regions of the country." Armstrong indicates that labour costs to enterprises in the European north may run from 1.5 to 2 per cent higher, and in the Asiatic north 4 to 5 per cent higher than in the central regions.¹⁷²

This incentive policy has not eliminated the problem of high labour turnover and a chronic tendency toward emigration which the Soviet north shares with the northern regions of the western countries. In the early 1960s, despite heavy inflows of labour related to oil and gas and other developments, Siberias' population declined not only as a percentage of the U.S.S.R.'s but absolutely.¹⁷³ Some oil field developments have had labour turnovers of 87 per cent.¹⁷⁴ Losses associated with such turnover rates have been a frequent cause of complaint.¹⁷⁵

Two responses to the poor performance of the wage incentive program have been proposals for increased mechanization of northern production so as to minimize the need to employ workers there at all, and for improved amenities in northern living. The two approaches may not be so different as they appear, for while the first entails heavier capital investments in productive equipment, the latter entails heavier investments in housing, recreational, health, education, and other forms of social overhead capital. The latter facilities remain, despite efforts to change the situation, inferior to those available in the central areas.¹⁷⁶

Apart from proposals such as the "shift" system referred to above,¹⁷⁷ the main method of minimizing the need for heavy social overhead investments to provide living amenities and other capital has been to promote development of "complexes". These are groups of industrial enterprises planned together to take advantage of linkage effects and to internalize what would otherwise be considered external economies associated with individual enterprises.¹⁷⁸ The benefits of such an approach, as an alternative to isolated, non-related, single enterprise developments are claimed to be as follows:

"Experience shows that the complex economic development of a region based on a rational specialization insures the diversified development of other industries and yields great economic benefit. The proper combination of groups of industrial enterprises save 20% in investment . . . the advantages of industrial grouping derive from multipurpose use of natural resources, fuller employment of manpower, savings in the provision of transportation, heat and power, housing and services, and the creation of combined construction facilities, a building-materials industry and repair facilities. If a complex approach to development is adopted, cities

and towns can be built more rapidly and at lower cost with resulting savings in investment. Similarly, such an approach usually results in better housing and services. This is an important factor in attracting permanent labor force to the northern areas and in reducing turnover. In other words, a complex development of new areas endowed with a wealth of diversified resources insures the planned, balanced development of industries in such areas on the basis of rational specialization and stable links both within and between industries, industrial nodes and adjoining regions."¹⁷⁹

Service and secondary industries in such a complex may be operated at a "loss," if necessary, in order to create the desired atmosphere of a "normal" settlement and also to permit utilization of the potential secondary labour force of spouses and working-age dependents of "primary" workers, the loss being picked up in the form of lower labour turnover costs and a reduced need for special wage supplements.¹⁸⁰

Of course these theoretically possible benefits of agglomeration are not necessarily realized in practice. Rival ministries in the same area may inadvertently or deliberately duplicate investments, and because of problems in timing parallel developments in a complex, anomalies are apt to be built into it during what may be a long period of partial completion. One of the criticisms levelled at Khruschev by Brezhnev upon his assumption of office, it may be noted, was the "growing number of unfinished construction projects" which make resources "dead for long periods of time."¹⁸¹ Soviet experience in building even relatively modest integrated industrial systems, such as forest product plants, has not been particularly encouraging. Much difficulty appears to have been encountered in coordinating inputs and scheduling installations.¹⁸²

A number of management and control techniques have been developed to combat such difficulties. In northern communities such as Norilsk, for example, overall management of developments in the area has been entrusted to the principal industrial combine in the city or region. The Norilsk Copper-Nickel Combine, according to Slavin, "is in charge of all production and of all services rendered to the population in the Norilsk industrial centre."¹⁸³ Thus it is responsible for management of not only the mining and processing plants, but transportation, fuel deposits, and the town of Norilsk itself. Similarly, in the Asiatic north, the Yakutia gold combine manages "all enterprises of the gold, diamond, mica and other mining branches of the Yakut A.S.S.R."¹⁸⁴

Such management systems have evolved spontaneously in response to the weakness of particular "branch" administrative structures in the more remote parts of the U.S.S.R. Similar forms of management and control have spontaneously developed in similar situations in Canada and other western countries where they emerge as some form or other of either private or public monopoly control. The available literature on the Soviet experience is remarkably free, however, of discussions of the implications of such forms of "management" for the political and social development of the regions affected. In part this is attributable to the fact that only recently have such aspects of development begun to receive the attentions of Soviet social scientists. While there is some evidence of a growing concern over the alienation of northern residents, as reflected in scarcely-veiled references to crime rates and discussions of methods to improve the north's population-retaining potential, the material collected for the present study reveals no references to the lack of local participation in decision making and management as a possible factor contributing to the situation. Prociuk reports, however, that at the 1965 plenary session of the all-union Academy of Sciences there were frank references to "an almost complete lack of sociological studies in the U.S.S.R." and to the "neglect of the human factor in economic planning."¹⁸⁵

Assessing the Relevance of Foreign Experience

The experience of foreign countries with the development of arctic and subarctic hinterlands has been shaped by the same broad influences as our own, namely the impact of western industrialism on a particular type of resource frontier. The major differences have been in the particular policy responses to this impact, much of which was initially transmitted through free market institutions in the form of commercial trading companies and other privately-owned enterprises. These policy responses, as we have seen, were not always related to narrowly economic considerations. In Alaska they were heavily influenced by the ideals of conservationists and by military considerations.

In the rather exceptional case of Greenland they were primarily motivated by humanitarian ideals, in Scandinavia by attempts to relieve the pressure of population on limited southern land resources combined with considerations of national defence, and in the U.S.S.R. by the policy of autarky dictated by that country's withdrawal from the world of western industrial capitalism.

These same motives have been observed in Canadian experience, except, significantly, for the autarky one. Indeed, the Canadian case is notable for the extent to which northern development here has been left open to international commercial and industrial influences, although the once sharp contrast between the U.S.S.R. and Canada in this respect is becoming somewhat less extreme as a consequence of recent Soviet expressions of interest in foreign (notably U.S. and Japanese) participation in Siberian development and Canada's adoption of a somewhat more restrictive set of national policies concerning foreign investment.

There are broad similarities among the northern development objectives, either stated or implied, in the policy responses of all these countries to the emergence of an industrial demand for the products of northern resources.

Perhaps the chief difference in the northern development experience of these countries has been the extent to which agricultural settlement was possible in their northern regions. Unlike mining, forestry, hydroelectric power generating, and even the older hunting, trapping, and fishing occupations, agriculture is associated with the establishment of a stable, usually politically active, population, even when organized on a relatively capital intensive commercial basis. The existence of such a population seems to strengthen the internal decision-making systems of a hinterland in relation to those of the more industrialized south. Despite the unsuccessful attempts at agricultural settlement in northern Ontario and Quebec, and with the major exception of the Peace River area, northern Canada has not provided opportunities for such settlement. Several European countries, notably Finland, have as we have seen, the possibility of a modified form of agricultural settlement supported by fishing or by forestry. This has distinguished the Scandinavian countries and, to a lesser extent, the U.S.S.R., from Canada and Alaska. The political economy of development in such situations resembles, as noted earlier, the kind of regional development problems, processes, and institutions we would find in our Maritime Provinces or in other parts of North America, such as Appalachia, which have been bypassed by modern industrialism.

Even with this difference in the historical development situation, however, all the jurisdictions examined have displayed in recent years a common preoccupation with labour mobility problems.

In most countries this has manifested itself in concern over the inability of northern regions to hold population. Only in the case of Greenland is there a concern to restrict the inflow of population from "the South". Thus, we find in all these countries an array of policy instruments being deployed either to induce workers to go into the north, or to induce those already there to remain. These instruments are remarkably similar whatever the political decision-making system of the country, whether it be social democratic, liberal, or Soviet communist. In view of the relative emptiness of the Canadian north and the apparent immobility of its native population, there is no clear parallel between our situation and that of the other countries examined in this regard. Furthermore, there appears to be no commitment in this country to promote northward migration either for its own sake or to relieve the pressure of population in the south, the recent Department of Regional Economic Expansion initiatives notwithstanding.

Another common theme, in some ways related to the foregoing, is the scale of northern resource development activities common to most of the countries examined. Except for a few programs to promote cottage industries as a source of employment for local residents, often native groups, northern resource development has typically been on a large physical scale and has required correspondingly large-scale organization to direct it. In Alaska, Canada and the U.S.S.R., this phenomenon has been accepted, indeed sometimes promoted. Deliberate policies to foster the location or relocation of small-scale enterprises in northern centres, when it has occurred, as in Scandinavia, seems to have been more a matter of national regional planning in general than a special northern development measure.

IV. Summary and Conclusions

This study has examined the history of development in northern Canada within a political-economic framework and has also surveyed briefly the development of comparable regions in several foreign countries. In this section we shall draw together the main perceptions which have emerged.

The Issues of Northern Development in Historical Perspective

Should the Canadian north be developed and, if so, when, how, for whose benefit, and by whom? The history of northern development in Canada and experience in other countries with similar hinterlands, suggests some pre-conditions to efficient and equitable solutions to these issues.

Whether or not the Canadian north should be further developed is obviously a question of national, if not international, scope. If by development we mean the establishing of self-sustaining economic activity in the north, the historical evidence suggests that development for most of the region is far in the future. The principal industries now established in the area do not encourage development of other industries. They create few opportunities for industrial development because they are typically capital rather than labour intensive. The evidence is that this is becoming increasingly the case as mechanization and automation of basic industrial processes proceeds. Nor do they create local opportunities for efficient production of equipment or other inputs required. The history of northern industries in this country suggests that as transportation and communication improve, local secondary activity is discouraged as local users find it both more economical and more "satisfying" to import goods from the major industrial centres of the south.

These trends can be resisted by the vigorous application of subsidies and taxes designed to influence the location of industry. Whether such measures will be adopted or not depends, of course, upon the political decision-making process. Provincial experience suggests that participation of northerners in this process is not essential for the adoption of such policies, for it is not at all certain that the beneficiaries of such development subsidies will be northern residents. The initiative for such measures may originate with the business interests involved. few of which, given the scale of modern northern enterprises, are likely to be resident interests. This is not to deny that small local business interests may benefit from large resource projects promoted by outside interests (public or private) or that they may constitute a potent political force. Recent developments in B.C. and Alberta in particular attest to this possibility. But earlier experience, including that in northeastern Ontario, also shows how transitory such success can be, given the limited life of natural resource-based enterprises.

In a similar way, considerations of fairness may prompt even nonresident interests to support subsidization of northern industry as a means of raising income and employment levels for the resident population. However, historical evidence shows that this can be a costly way of dealing with what amounts to a problem of maldistribution of income.

The principal difficulty with subsidization of this kind, however, lies in developing measures which will be seen to be both efficient and

just to assess and evaluate the claims of other regions for development assistance. A logic on which to base such measures has not yet been evolved in this country and, on the basis of past federal-provincial cooperation on resource questions, it does not appear to be imminent.

Exogenous and Endogenous Influences on Development in the Canadian North.

A major theme of the historical sections of this study has been the extent to which the north has been "developed" in the interests of, and by means supplied by, outside centres of economic power and political power. Markets, technologies, labour and capital inputs, as well as administrative structures, have all been controlled from outside the region itself. If we are correct in expecting that the industries developing in the north will not entail substantial migration of population into the north, this outside control is unlikely to disappear in the foreseeable future. There are, however, at least three forces working which might be expected to weaken this outside control: one is the extraordinary growth of the service industries in the north; another is the decentralization of public administration to the north; and the third is the emergence of native groups, environmental protection agencies, and other special interest organizations which could affect policy decisions about the area.

The first of these, the growth of the tertiary sector, is likely to create employment opportunities in the north on a much larger scale than was historically the case. In the past, the few opportunities in this sector attracted nonresidents. Now, however, the transformation of northern education, which has been one of the reasons for the growth of the tertiary sector there, leads us to believe that these opportunities will be filled by local, and probably native workers. Thus while the further growth of the tertiary sector may help reduce the reliance of the resident northern population on "unearned" income transfers from the south, it is unlikely to cause a large net increase in the northern work force or population.

The second force which might be thought capable of substantially increasing the resident population's influence on decision making affecting the north is the transfer of public administrative agencies to the area. This has taken place already to a limited degree in several provinces and in the federal north. Its immediate effect is to increase service sector employment in the north. Its likely impact on policy outcomes is less clear. It should be expected to increase local inputs and to make policy makers more sensitive to the particular needs and expectations of the local people. It might also be expected, like the expansion of local government institutions, to promote local participation in the political process. Such expectations can only be classed as visionary, well-intentioned hopes at the present. On the negative side it must be recognized that administrative decentralization is not necessarily associated with decentralization of policy-making power. Some confusion appears to have arisen over this point in the course of the Saskatchewan Government's relocation of its new Department of Northern Saskatchewan from Regina to La Ronge. Some enthusiastic staff members seem

to have assumed that it was the government's intention to establish a system of direct self-government for the north, rather than to merely locate an administrative agency there. This particular experience warrants further study for the light it may shed on the benefits and costs of such location policies. At present we can only conclude that such measures are unlikely to represent a sharp departure from effective external control over northern development policy. This conclusion is further supported by the Alaskan experience since the attainment of statehood.

The third force which might conceivably alter the balance of internal and external decision-making power affecting the north is the emergence of special interest groups, notably the native peoples' organizations, which have their political base in the north. The latter qualification probably eliminates from consideration in this particular connection the labour organizations, environmental protection associations, and private charitable organizations that have demonstrated a willingness and ability to influence the course of events in the north and which may support and ally themselves with local interest, but which nevertheless draw their own financial and other support from outside the north.

The emergence of native peoples' organizations in the north has been too recent a development to permit any assessment of their potential role in shaping northern development policy. Alaskan experience shows that such organizations can exert strong pressure on the dominant outside interests involved in northern resource use by effectively blocking development, and that they can use this bargaining power to increase the share of the benefits accruing to the native resident population. At the same time, this power may prove difficult to sustain, particularly in the face of opposition from the local small-business community and other development-oriented groups primarily interested in shortrun gains. In this respect attention is sometimes drawn to the relative distribution of native and non-native population in northern jurisdictions. Despite a relatively high rate of native population growth, the demographic trends in most parts of the north are distinctly in favour of the non-native groups. The significance of this presumably lies in its implications for the electoral process at the local government and higher levels. However, this process is now supplemented by a parallel set of bargaining structures in which numerical strength is not necessarily the determining factor. How effective the native people can be in the Canadian context remains the principal uncertainty in the balance of internal versus external decision-making power.

The Balance of Private Decision Making Power in the Past

While it is commonplace to observe that the state has played a particularly important role in the development of the Canadian economy generally, until very recently the exploitation of the resources of the north has owed very little to state initiatives. The obvious exception has been state support for agricultural settlement on the southern fringe of the north. The trapping, fishing, forestry, and mining industries were developed by private firms. One reason for this was the harmony of private commercial interests and the interests of Canadian government. with respect to resource use. With the land resources themselves largely state-owned, it was not necessary for public authorities to make elaborate formal provisions regarding the manner of their exploitation. Because the domestic market for raw materials was very limited, it was necessary to develop foreign markets if they were to be utilized on a large scale. It was also necessary to obtain or produce the necessary capital and technologies required for the purpose. Canadian governments had neither the skills nor facilities for these tasks. The initiative and enterprise required for resource development were also not expected to come from the state in a nominally free-enterprise economy. Consequently the initiation and operation of resource developments were left to private firms and individuals. Canadians were active in the early stages of such exploration and development work, but, with a few notable exceptions, the final development of projects depended on foreign capital, technique, and marketing. Thus, private foreign enterprise became the principal agent entrusted with the development of the stateowned land resources of the Canadian north.

Returns to the national community from such development took the form of employment opportunities, the incomes earned therefrom, some share of the net proceeds of enterprises via taxes, royalties, and other fees charged for land use. Only a small part of these proceeds remained in the north itself, partly because the labour force was largely transient, and partly because the direct returns went to individuals, firms, and governments based in the south.

In recent years this general pattern of relationships has been somewhat altered. We have noted a marked increase in the state's role as initiator of resource developments and a trend toward direct participation by the state with private enterprise in a number of projects. In part this may be a response to growing public concern over the extent of foreign ownership and control. Canadian public participation in resource development may thus be seen as a substitute for private foreign participation. The recent partnerships of provincial private firms to develop resources in British Columbia and Alberta are another possible substitute.

There is also evidence of more intensive involvement of governments in the sharing of net proceeds from resource developments by establishing not only higher tax rates, but more flexible taxing systems which permit a degree of profit sharing.

These changes represent a marked increase in public relative to private decision-making power in the resource development field. The experience of the 1960s suggests that this has made little difference in the scale, timing and type of development in northern Canada.

A potentially more significant change which may affect resource development in the north is slowly growing interest in the possibility of abandoning growth and development as an unchallengeable social goal. One important reason for the harmony of private and public interests in northern resource development to date has been the acceptance of growth as a costless source of net benefits to society as a whole -a source of employment and income for workers, of profits for entrepreneurs, and of a social dividend in the form of public revenues for the

public at large.

The environmental protection movement has provided one challenge to this harmony by positing the existence of real social costs left out of traditional commercial and even governmental calculations of costs and benefits arising from resource developments. With responsibility for correcting such errors inevitably being assigned to government, the harmony of business and public interests is less automatic than was once the case. As the experience of the earlier, more limited, conservation movement showed, however, in practice these differences can be accommodated more readily than might be expected in theory. The new movement is, however, more broadly based, drawing considerable support from a variety of both scientific authorities and a romantic back-tonature element in contemporary society.

The implications of a zero-growth future for the Canadian north, as for other undeveloped areas, are likely to prove unattractive to their populations. This is not just because zero-growth is popularly misconstrued (if it is a matter of popular interest at all) as involving the cessation of new productive activities and a diminution of living levels. Even with reassurance on these points, less-developed communities may rightly fear that they will bear the brunt of the readjustment costs as the world industrial system converts from production for expansion to production for improvement; that they will be stuck at existing low levels of life in the meantime; and that they will be at a disadvantage in competing for the benefits of the new order.

Whether this is a real prospect or not is a question far beyond the scope of this study. But it must be noted that the seriousness of possible opposition to a no-growth or slow-growth strategy of development from the Canadian hinterland will be in direct proportion to the extent of any real decentralization of decision-making authority to the regional level.

Prospects for a Northern Development Policy in Canada: the Lessons from Abroad

During the 1950s and 1960s the idea of "planning" for economic growth and development was widely discussed in this country and specific reference was often made to western European experience in this regard. One of the lessons of this experience has been that planning can take many different forms. Another has been that it is one thing to have a plan and another to be doing economic planning.

As the "development decade" of the 1960s wore on, the idea of development planning as perceived in this country seems to have evolved into a generally acceptable exercise in goal formulation, with little attention being given to the hard work of plan implementation and goal fulfillment. Indeed, the latter measures appear to have been both technically too formidable and politically too hazardous to be seriously undertaken.

Because of this, even without the jurisdictional divisions which exist in the Canadian north and the differing political philosophies and regional interests of these jurisdictions, it is not surprising to find little expressed concern in this country over the possibility of devising a "national northern development plan." Given these additional considerations, it is unlikely that we could realistically hope to establish even a set of national goals for northern development.

In Norway and Sweden, the north-south problem is much simpler in that those countries do not have seven different regional jurisdictions involved in the matter of north-south relationships. They also have the advantage, for planning purposes, of possessing a set of functional national organizations which cut across regional lines, whereas in Canada functional organizations of business, labour, and other economic groups tend to reflect regional differences.

While the present study does not provide a completely up-to-date survey of current provincial or federal policies toward the north, it has become evident from discussions with provincial policy makers and administrators that the provinces would be distinctly disinclined to subordinate their northern development programs to a national plan. Even the recent initiatives of DREE are seen as merely providing opportunities for utilizing federal assistance in the implementation of projects already envisioned by the provinces. National mineral, energy, and environmental protection policies are similarly regarded more as inputs to or, at most, constraints upon, provincial development programs. A national plan for northern development in Canada could consequently become a practical possibility only if it were conceived of as a synthesis of provincial programs and policies, including those of the federal-territorial jurisdictions north of 60°. At present, however, there is very little "planning" being done at these sub-national levels and what is being done is very unevenly distributed. As we have noted, several jurisdictions, notably the federal-territorial are doing a certain amount of technical modelling and other research work which is essential to development planning, but few if any of the provinces appear to possess the staff and facilities required for this kind of activity. Similarly we find several provinces, and again the federal-territorial jurisdictions, publishing statements of policy loosely referred to as "plans" for the north, but other jurisdictions seem to eschew such devices on the grounds that they do not wish to appear to be participating in "comprehensive planning". The nominally socialist provincial administrations seem particularly anxious to avoid displaying even a pretense of "planning", apparently because of the pejorative connotations of compulsion or centralized control associated with the term, while a conservative government in Ontario appears to lean to the opposite position, if anything tending to err on the side of claiming more for its "planning" activities in the north than is warranted.

Even the mildest form of development planning, the articulation of development objectives, is not well established in this country either at the federal or provincial levels. Those jurisdictions which do not appear to regard planning as a discredited activity, have published a number of policy objectives relating to the north – the federal-territorial jurisdictions' declarations cited on pages 154-55 being a good example. As a careful international study of development planning carried out in the 1960s found, however, both technical and political considerations tend to discourage governments from stating development objectives with any degree of precision. Instead of facing difficult choices, it is often necessary for political authorities to fall back on simply listing objectives, even though they are inconsistent with one another, and to avoid making them explicit enough to permit quantification and specification of targets.¹

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