



***Agroclimatic Capability Of Southern  
Portions Of The Yukon Territory And  
Mackenzie District, N.w.t.***

***Type of Study: Analysis/review***

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## A. Introduction

The Northwest Territories is a large and diverse expanse of Canada providing numerous different habitats for plants and animals. In the south near Fort Smith we have bison - a prairie grazing animal. The land on which these animals graze is suitable for commercial food production as shown by the small gardening business along the Hay River. Throughout the forested regions of the Northwest Territories we have moose and woodland caribou, numerous berries, and lakes that offer a variety of fish. The tundra provides more berries, caribou and muskox, with the lake trout and whitefish in the tundra lakes. Along the Arctic and Hudson Bay coasts the territory is rich in all the major land species plus seals, whales, walrus and char. Compositions of the food harvest (in terms of species) varies considerably from Baffin in the east to Inuvik in the west depending upon availability.

Northern food resources are, therefore, distributed throughout the Northwest Territories in the terrestrial, freshwater and marine environments. The food obtained from these environments is defined as "country food." It encapsulates the adventure of hunting and trapping for consumption and also the act of sharing with others. Such activity, the past, was **solely** a non-commercial activity even though its economic value, in terms of equivalent store bought food, has been favorably demonstrated by tabulation and studies. More recently, however, the downturn of the non-renewable sector of the economy and a similar pattern in the global economic picture, the Government of the Northwest Territories acknowledges the need to promote renewable resources commercial activity on a larger scale than hitherto previously undertaken. In particular, it **focussed** on country foods.

"Such production may be a means to local economic growth by import substitution and export strategies which have been used by Canada and many other countries to achieve economic growth and improve income levels in designated sectors. Although local production of some types of product may not be currently feasible because of economic (eg: low volumes) or technical reasons, local conditions do favour production of meat, fish and seafood from indigenous species such as caribou, muskox, arctic char and whitefish. Such local naturally occurring food sources could become viable "country food" production opportunities. Country foods now amount to approximately \$70 million." The above is an extract from a study Production and Marketing of Country Foods from the Northwest Territories by Deloitte Haskins & Sells.

Another event which focussed attention on country foods was the World Fair in Vancouver - Exposition 86. Muskox burgers although, no match for Big Mac (in terms of popularity) did hit the taste buds and pockets of gourmet diners. This was followed by a first Northern Food Conference held in Yellowknife, February 1987, at which no effort was spared to display what could be done with country foods. Reindeer (although not regarded as **strictly indigenous**) muskox, caribou, arctic char, whitefish, berries, bear meat, whale blubber, seal meat; all were served in some fashion or another and opened new doors to gourmet possibilities. The conference also deliberated on the superior nutrient value of country food as compared to imported food.

It is in this content that we examine the nature of the country food industry in the Northwest Territories - the resources that we have, the production methods, the available markets, the distribution network, the human resources needed, the technology. . . all neatly fitting a jigsaw within prescribed regulatory and policy constraints. Government policies, programs and direct involvement need to be integrated effectively.

## B. Resource Capacity

It has been generally recognized that sound resource management be based on the sustainable harvest of a particular species. Commercial quotas must reflect prudent and safe attitudes.

The greatest opportunities for an expanded country food industry are related to wild populations of indigenous species. The animals that are currently being used (caribou, muskox, seals, whitefish, char and other species) still represent the greatest potential for both improving the efficiency of our country food industry and increasing our domestic food self-sufficiency. Existing commercial quotas provide opportunities for increased use of these resources. A cautious approach based on sustainable harvest level will allow the impacts of commercial use to be assessed. Efforts can be directed to fully meet the needs inside the Northwest Territories allowing time to develop the infrastructure, resource information and business skills necessary for a "country foods" industry to become viable beyond our borders.

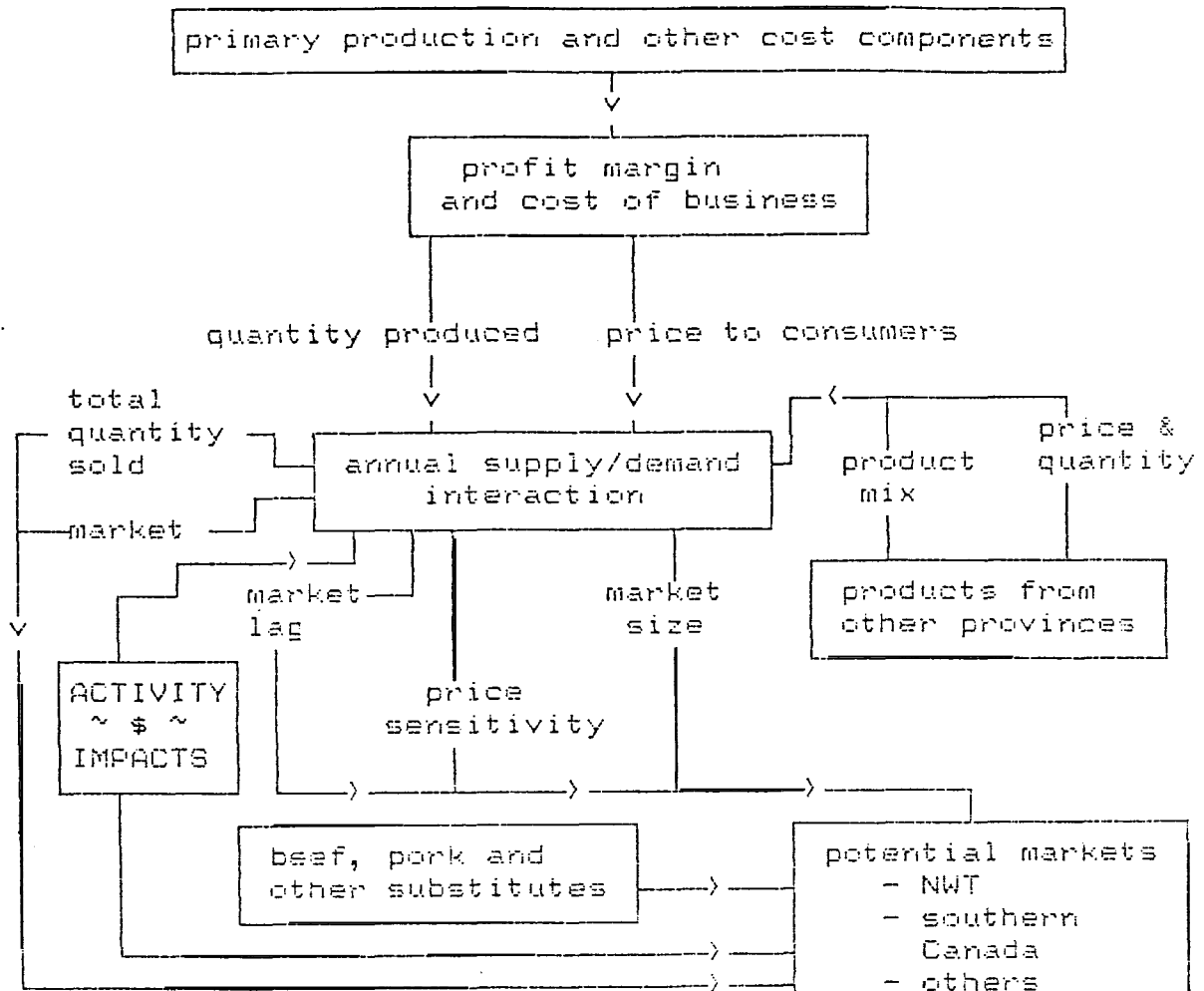
It is worth mentioning here that there have been a number of proposals for 'the introduction of exotic species to the Territories recently. While there may be potential for such uses these proposals must take into account the biological requirements of the animals already using certain habitats, the capability of those habitats to support introduced species and the cultural implications of major changes to existing wildlife populations. These same concerns could be applied to the changes in the way wildlife are used. For example, there is little experience to indicate that the herding of caribou would be successful. In a traditional hunting culture it is also doubtful whether that approach to animal use would be acceptable. Areas in the Territories where the herding of animals has resulted in restricted access to resources or exclusive use of that area have experienced much conflict.

Charts showing existing commercial quotas and present harvesting statistics are attached as appendices.

## c. Market Analysis

The following chart illustrates the dynamics of the NWT Country Food Market.

## Dynamics of the NWT Country Food Market



The ability to sell northern foods in any market, be it northern, southern, or international, is a function of four factors (a) consumer awareness and knowledge of the products; (b) consistent product quality; (c) consistent supply; and (d) the economics of distribution.

The following is an excerpt from a position paper presented at the Northern Food Conference in Yellowknife, February '87;

"The potential market for northern foods can be categorized into three groups: (1) the Native Market; (2) the northern non-native market; and (3) the southern and international markets." The characteristics of each are briefly outlined below.

### 1. Native Market

Commercial production targeted at the Native Market can serve two purposes: (a) to provide a source of food to Natives who may have joined the wage economy and do not have the time to do hunting and fishing and (b) to affect a more equitable distribution of country foods between areas of surplus and those of shortage. The vehicles to accomplish these purposes are inter-settlement trade and country food outlets.

The unique problems associated with the Native market include difficulties in determining the value of products and consumer resistance to paying for goods traditionally available without charge. Nevertheless, the concept does appear viable on a limited scale.

## 2. Northern Non-native Market

In the northern primarily non-native communities, such as Yellowknife or the mining centers, consumer awareness and knowledge of northern products is often limited. The residents may be transplanted southerners who have a distinct preference for southern foods and only a rudimentary understanding of how to prepare northern foods. However, through better educational type promotion a stable market can come into existence.

## 3. Southern and International Markets.

If properly promoted, caribou, muskox, reindeer and char can each be positioned as unique, exotic, and healthy (high in protein, low in fat, no preservatives) alternative to southern foods. The constraints in these markets are the ability of northern channels to provide consistent quality (federal government inspected) and consistent supply at a reasonable price. In the case of reindeer, these constraints were relatively easy to overcome: (a) most of the meat sold in Europe where people are quite familiar with the product; and (b) the product was farmed and processed through a central facility making it much easier to forecast supply, to enforce standardized handling procedures, and to take advantage of potential economics of scale.

In a recent marketing study done by Deloitte, Haskins, & Sells the following paragraph is also relevant in connection with the supply and demand elasticities.

"With regard to N.W.T. Country Food products, use of estimated supply and demand elasticities could be misleading because the products are just being introduced into the markets in question (retail and H.R.I.). This means that there are no historical records of data on prices, available supplies or market demand, thereby not permitting a reliable generation of supply and demand functions. Supply and demand functions of course form the basis for elasticity estimates. Several major assumptions would have to be made regarding market penetration, prices, etc. in order to make the estimates. It is believed that the uncertainty associated with both supplies of the products and the demand in the various markets would make the error in the estimated too great to warrant the use of elasticity estimates. Therefore, elasticities have not been estimated. "

## D. Production

The economics of most small Native communities aside from government transfer payments are based upon the production of subsistence goods for food, clothing and shelter. In some areas this subsistence mode of production is complemented by the production of goods such as arts and crafts, for exchange or by tourism activities which are themselves based upon the consumptive or non-consumptive use of renewable resources.

The imputed value of the N. W.T. subsistence economy is \$40 to \$50 million annually, the arts and crafts industry generates approximately \$6 million in export revenues annually, and tourism activities add an additional \$40 million to the N.W.T. economy. The objective of developing commercial food production is to expand this economic base and hence improve the standard of living. To achieve this purpose, it must be ensured that whatever commercial development takes place does not come at the expense of the base economic activities.

Consequently, commercial production of country foods should be limited to surplus supplies, that is to the proportion of sustainable harvest levels which remain after local consumption has been subtracted. Surplus supplies are subject to annual changes in inventory levels, consumption patterns, hunting efforts, markets for by-products, and migration patterns.

The species available for commercial production of country foods can be categorized into four groups (a) red meat, (b) fish and seafood products, (c) marine mammals and (d) game birds and other products.

The primary red meat products are caribou, muskox, and reindeer. On an annual basis, approximately 40,000 caribou (5 million pounds of meat) and 200 muskox (70,000 pounds) are being harvested for domestic purposes. Caribou has traditionally been the preferred product in the north; however, the success of muskox burgers at the N.W.T. Expo '86 Pavilion suggests a strong southern market might exist. A study on inter-settlement-trade conducted by the Inuit Development Corporation estimated that a surplus of 165,000 pounds of caribou meat and 33,000 lbs of muskox meat could be made available for commercial purposes. The quotas have increased considerably since then and a new stock assessment exercise should be undertaken to determine new levels of sustainable harvest. The leading fish species in the N.W.T. are trout, whitefish and Arctic Char. Substantial surplus volumes of each of these three species exist. Commercial production of trout and whitefish is 2 - 3 million pounds annually. Opportunities to increase production and consequently sales appear limited; trout and whitefish are already abundant in southern markets and there is a distinct market preference for other products, including Arctic Char. Arctic Char is limited by economics of production; the species is found primarily in remote areas resulting in high costs of production. If it were justified economically, commercial production could increase to at least three or four times the current level of 250,000 pounds.

Although seafood products are not a mainstay of the northern economy, development has taken place for products such as shrimp, mussels and sea cucumbers. Time will tell if these become economically viable in the long run.

Of the marine mammals, ringed seal, harp seal, narwhal whale and walrus are harvested primarily for non-meat reasons. At first, this would appear to offer an opportunity to increase utilization without increasing the harvest. However, the toughness of the meat severely limits market potential. The potential may exist to produce and market

specialty products such as seal liver. Other gourmet uses of seal meat have also been demonstrated lately but whether it will appeal to normal taste buds is not clear.

The leading game birds in the N.W.T. are geese and ducks. Approximately 25,000 of each are harvested annually, which at approximately 3 pounds per bird represents over 75,000 pounds of meat.

Such are the "raw materials" for country food production. The costs associated with obtaining these "raw materials" vary from community to community and from region to region. No data has been collected in the past with any degree of scientific accuracy. The following is an excerpt from the study by Deloitte, Haskins & Sells and diagrams gives some idea of capital investment by hunters and operating costs.

"A study issued by the Baffin Regional Inuit Association as reports in the Northern Foods Costs - Draft #1 report surveyed hunting costs for the month of May 1983 in the communities of Hall Beach and Pangnirtung. The report stated:

"Hunters in Hall Beach reported spending a total of \$5 175.15 in May, \$4 371.20 on operating costs and \$803.95 on capital expenditure. . . ."

The following is also an extract from the above report showing muskox hunting cost to Inuvik for meat supplied to Expo 86.

**Table 3.15**

**Muskox Hunting Costs**

Management (Fees and Expenses)	
Project Director	\$ 13,510.00
Field Supervisor	4,500.00
Skinning Foreman	2,200.00
Accommodation	962.60
Meat Inspectors	<u>2,536.50</u>
	<u>23,709.10</u>
Transportation to Inuvik	38,261.67
Purchase of Meat from HTA (27,675 lbs. @ \$1.25/lb.)	34,593.75
Equipment (Purchase and Rental)	9,580.46
Supplies	18,632.36
Aerial Survey	<u>1,026.00</u>
	<u>102,094.24</u>
Total Expenses	<u>\$125,803.34</u>

Total costs of the hunt were therefore \$125,803.34 or \$4.55 per lb. (\$125,803.34 ÷ 27,675 lb.) to Inuvik. It should be noted that \$1.25 per pound paid to the hunters is in the same range as the price paid for caribou.



The following extract P. 153 from the study Production and Marketing of Country Food from the N.W.T. by Deloitte, Haskins & Sells is relevant with regard to scale of production.

**Game Meat:** Most caribou is used in the community of origin either for subsistence use or traded or given away. Meat is sold locally in some communities. Some meat is also transferred intra-regionally as illustrated by the findings of the Country Food Marketing Survey (Iqaluit).<sup>80</sup> Due to difficulties in meeting Federal inspection requirements, no caribou meat is currently exported from the N.W.T. Therefore, there may be limited potential to increase commercial sales of caribou meat beyond the present level, at least outside the native population who are now purchasing much of the meat.

Currently about 34 percent of available commercial muskox quota is being utilized. This is equivalent to 867 animals or about 130,000 lbs. of meat (muskox dress at about 150 lbs.). Sales for 1986 give a good impression of potential product movement although some changes have occurred since then (i.e., ULU Foods no longer sell retail cuts in Inuvik). Approximately 4 percent (3,000 lbs.) of this meat was sold through ULU Foods retail outlet in Inuvik. An additional 14% (12,000 lbs.) was sold wholesale within the N.W.T. Approximately 82 percent (67,500 lbs.) of the muskox harvested was exported outside the N.W.T. for use at Expo '86. It is unlikely that an alternate market for this amount of meat would be readily available within the N.W.T., although production could be maintained if alternative markets were found.

## E. Distribution

It is essential to understand at the outset that a distribution channel cannot exist unless all members (producers, middlemen and retailers) are satisfactorily rewarded for their efforts. There is, of course, a limit to what a consumer is willing to pay for a northern product; if the channel cannot distribute the product to the consumer at or below this level, the market will not exist. Impacting negatively on channel economics are the high costs associated with remote locations, the highly dispersed nature of the industry which prohibits many economies of scale in purchasing, processing or distribution, the high costs of transportation, and the lack of a trading infrastructure in terms of processing and storage facility.

Again the following excerpt from the **Deloitte, Haskins & Sells** report illustrates the need for a distribution chain:

"Movement of country foods is difficult to trace, particularly for inter-regional shipments. Discussions with HTA's and government representatives yielded an impression that much of what is produced generally stays within the region. The main exceptions were found to be the game produced by Ulu Foods and the fish marketed through FFMC."

Needless to say that transportation costs are high. Provided in the appendices is a list of cargo rates from destinations within the producing areas of the N.W.T.

## F. Labour Force

Statistics in this area is extremely difficult to obtain and even more difficult to evaluate. In small communities nearly every adult native person is a General Hunter License holder and has sometime or another harvested game animals whether for domestic use or for sale. However, regular hunters are becoming fewer each day.

There is again very little or no record of incomes since most the hunters have other major sources of income. It is, however, correct to say that the returns are marginal because of the capital investment required for snowmobiles, rifles, etc. and operating costs by way of fuel, repairs, and maintenance.

In the N.W.T. most HTA's sell some country food to meet local needs and there is an increase in inter-settlement trade between communities. Only recently efforts have been directed towards more commercial use and the country food industry is still in its infancy. Inuvik, Kitikmeot, Keewatin, Baffin and Yellowknife all have regular business though they have a long way to do to achieve their optimum capacity.

## G. Legal/Policy Constraints

Country food production and distribution is a well regulated industry in as much that there is strict adherence to quotas established either by the Department of Renewable Resources in respect of wildlife or the quotas established by the Department of Fisheries in respect of fisheries. The crux of legislation is to preserve the wildlife or the fisheries

in a healthy state for use for all times. Conservatism, in the past, has been the guiding factor. Domestic use always has preference over any other use.

**Marketing Board;** the freshwater Fish Marketing Corporation is the body that markets the fish sold outside the territories. There is no such body in respect of meat since non-federally inspected meat cannot be sold out of the territories. Attached is a summary on Meat Inspection and Handling.

## H. Conclusions

### 1. Developing Markets

The Government could assist in market development by encouraging northern food retailers and restaurants to carry northern foods, by serving as an **intermediary** between groups **with surplus** production and potential buyers, and by funding general promotions communicating a "Buy **Northern**" message, food preparation **methods**, or nutritional benefits. The small size of the market does **not justify** establishing a central marketing agency at **this** time.

### 2. Developing Consistent Product Quality

Given the number of different groups involved, developing consistent product quality is a difficult task. The government could assist by providing standardized **training** in product handling, butchering, inspection, and packaging; by developing a standard grading system; and by providing capital assistance to enhance handling and storage facilities.

### 3. Improving Consistency of Supply

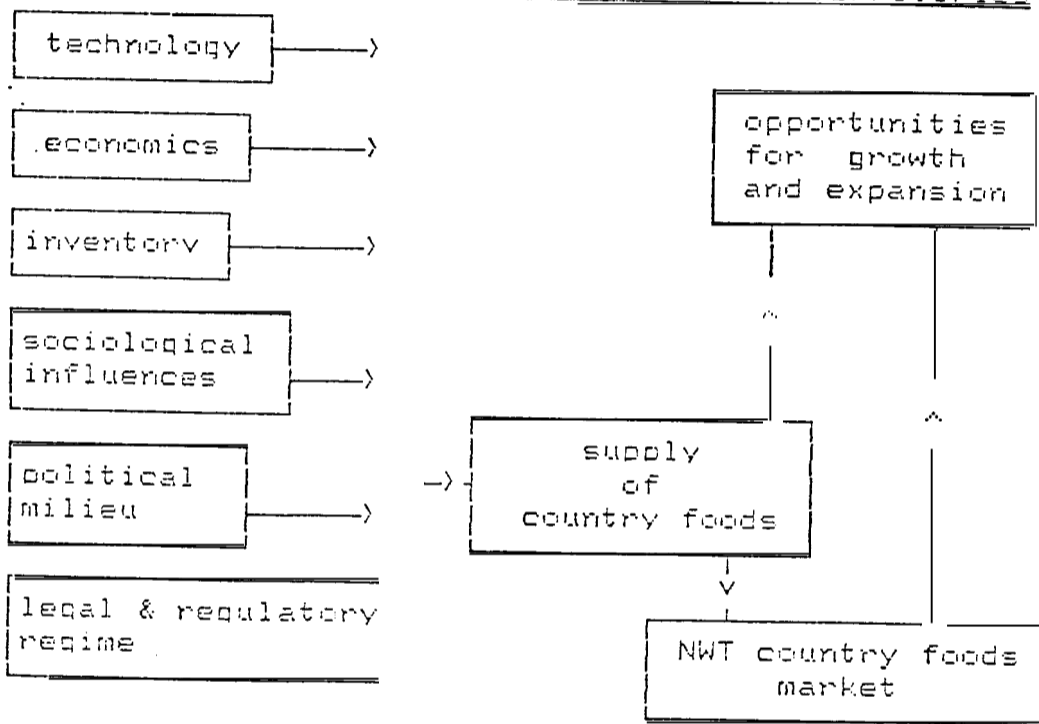
Production assistance and guidance can be provided by the government in the form of determining sustainable yields, monitoring inventory levels, stimulating and facilitating surplus hunting, and improving access to key fishing and hunting areas.

. . Improving Economics of Operation

The government could reduce channel costs by assisting in some of the channel functions itself including communication of market information, product inspection, product marketing and distribution.

## I. Appendices

Factors that influence the availability and use of country food products in the Northwest Territories



NORTHWEST TERRITORIES  
COMMERCIAL QUOTAS  
(SEE ATTACHMENT)

WILDLIFE MANAGEMENT UNIT/ZONE AREA	REGION	CARIBOU	WILDLIFE MANAGEMENT UNIT/ZONE AREA	REGION	MUSKOX
B/4	Baffin	<b>100</b>	A/1/3	Baffin	4
B/5	"	500	H/1-3	Keewatin	6
B/1	Inuvik	95	H/1-4	Keewatin	3
F	Kitikmeot	100	J/1-1	Keewatin	3
F	North Slave	550	F/2-1	Kitikmeot	30
c/1	Kitikmeot	50	B2-4	Kitikmeot	500
c/1	Inuvik	900	H/1-1	Kitikmeot	35
1	Baffin	350	B/2-1	Kitikmeot	5
B/3 H1	Kitikmeot	180	C/1-z	Kitikmeot	50
B/2	Kitikmeot	125	F/2-2	Kitikmeot	20
I	Keewatin	250	H/1-1	Kitikmeot	40
J/1	Keewatin	350	H/1-2	Kitikmeot	10
H/1	Keewatin	50	A/1-1	Baffin	18
H/3	Fort Smith	200	A/1-2	Baffin	2
			A/1-3	Baffin	4
			B/2-2	Kitikmeot	110
			H/1-3	Keewatin	10
			J/1-1	Keewatin	20
			A/1-5	Baffin	12
			c/1-1	Inuvik	50
			H/1-1	Kitikmeot	5
			A/1-3	Baffin	7
			A/1-4	Baffin	12
			B/1-1	Inuvik	2000
			B/3-1	Kitikmeot	5
			H/1-1	Kitikmeot	5
			c/1-3	Inuvik	10
		<u>3,800</u>			<u>2,976</u>

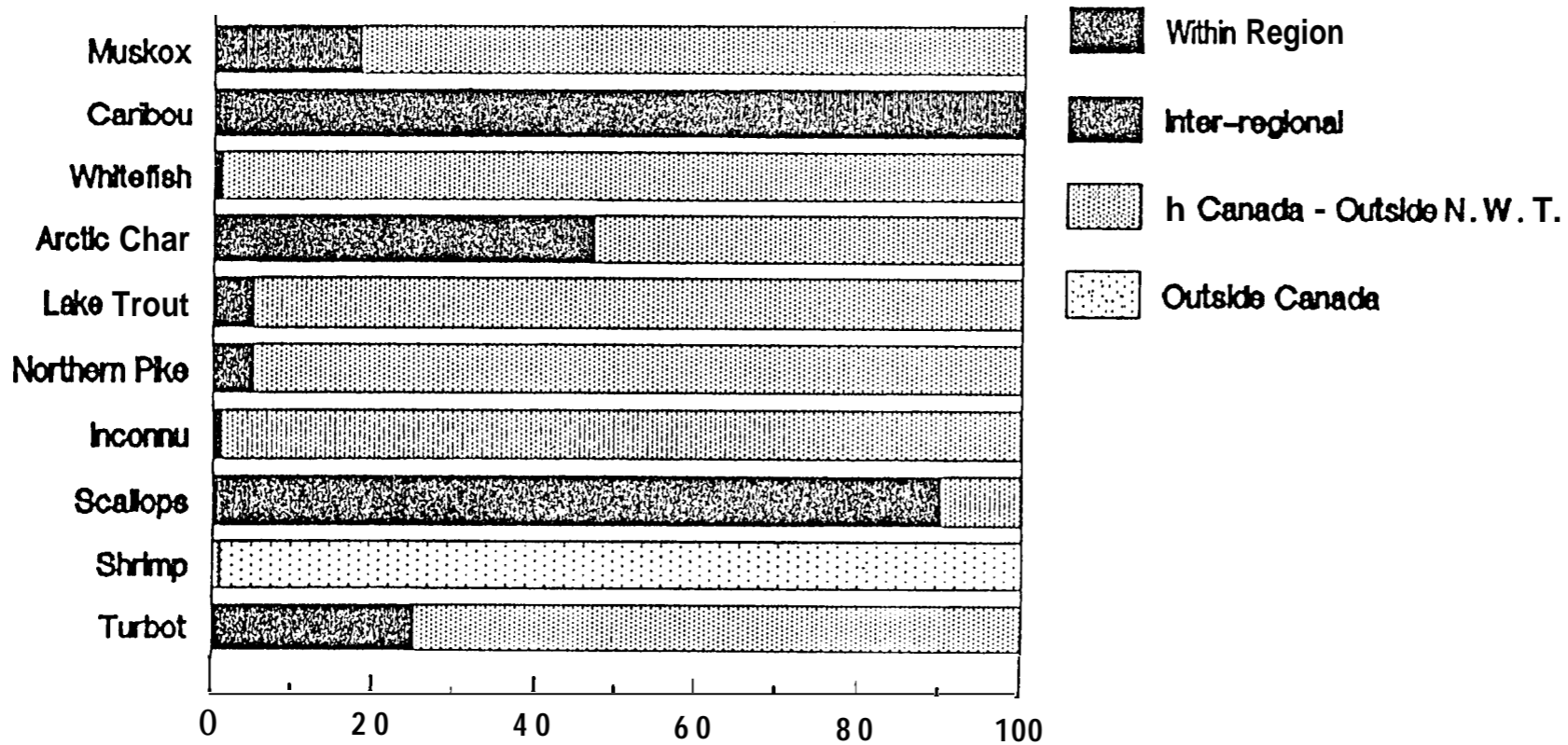
REGION WISE  
ALLOCATION

Baffin	950	59
Inuvik	995	<b>2060</b>
Fort Smith	200	
Keewatin	650	42
Kitikmeot	455	815
North Slave	550	
	<u>3800</u>	<u>2976</u>



## Movement of Country Food

Country Food Item



Percent Sold in Each Market

Potential For Ongoing Commercial Production And Marketing

Product	Opportunities	Constraints
Muskox	<ul style="list-style-type: none"> <li>. demand elastic</li> <li>. unique product identified closely with Northern Canada</li> <li>. strong interest from food service industry</li> <li>. willingness of suppliers to handle product</li> <li>. animals can be slaughtered under Federal supervision</li> <li>. under-utilized supply</li> <li>. Sachs Harbour HTA willingness to participate in slaughter</li> </ul>	<ul style="list-style-type: none"> <li>. greatest demand for prime cuts</li> <li>. long distance to markets</li> <li>. no Federally-approved processing facility in the N.W. T.</li> <li>. seasonal hinds (fall and spring) necessitate storage if year-round supply is attempted</li> <li>. poor infrastructure</li> </ul>
Caribou	<ul style="list-style-type: none"> <li>. surplus quota available for commercial slaughter</li> <li>. demand by food service industry for game meat</li> </ul>	<ul style="list-style-type: none"> <li>. no proven method to slaughter under Federal inspection</li> <li>. export markets require inspection</li> <li>. N.W.T. markets are increasingly concerned about inspection</li> <li>. lack of commitment from GNWT to commercialize caribou</li> <li>. native resistance to selling or exporting caribou</li> <li>. greatest demand for prime cuts</li> <li>. production costs vary with herd migration pattern</li> <li>. small local quotas</li> </ul>
Reindeer	<ul style="list-style-type: none"> <li>. consumer familiarity with product</li> <li>. relatively inexpensive back-haul rates to Edmonton</li> <li>. strong interest from food industry</li> <li>. willingness of suppliers to handle product</li> <li>. animals can be slaughtered under Federal supervision</li> </ul>	<ul style="list-style-type: none"> <li>. no recent harvests; land claims problems</li> <li>. herd currently being sold to outside interests</li> <li>. provinces liberalizing game ranching laws</li> <li>. competition from New Zealand</li> <li>. greatest demand for prime cuts</li> </ul>
Bison	<ul style="list-style-type: none"> <li>. some demand in food service industry, can be slaughtered under Federal supervision if sufficient</li> <li>. kill volume</li> <li>. consumer awareness is high</li> <li>. high drum weight</li> </ul>	<ul style="list-style-type: none"> <li>. no longer considered an exotic or wild game meat</li> <li>. significant quantity of wood bison for commercial harvest</li> <li>. no commercial production (ranching) of plains bison to date</li> <li>. competition from other provinces</li> <li>. distance to markets</li> </ul>
Whitefish	<ul style="list-style-type: none"> <li>. government assistance is available for price support and freight costs</li> <li>. under-utilized quotas</li> <li>. established market infrastructure (FFMC)</li> <li>. fish consumption in North America is steady</li> </ul>	<ul style="list-style-type: none"> <li>. fishing equipment is old, needs to be replaced</li> <li>. heavy competition from other Canadian fisheries (Great Lakes)</li> <li>. over-supply problem in Canada</li> <li>. high costs of production; heavily subsidized</li> <li>. remoteness of some fishing areas from markets</li> </ul>

Table 7.1 Continued

Product	Opportunities	Constraints
Arctic Char	<ul style="list-style-type: none"> <li>• good potential in • uthm gourmet markets</li> <li>• under-utilized quotas</li> <li>• test fisheries in some • roco - leads to more quota</li> <li>• several processing plants al reedy bull t; have excess capacity</li> <li>• local • alwo • re increasing</li> <li>• is a • titituta for salmon; sometimes salmon is scarce or high-priced.</li> <li>• increased interest by communities in char fisheries</li> <li>• government • asistmce available for developing the fisheries</li> <li>• weir technology should be widely adopted soon; will facilitate more timely marketing of fresh char</li> </ul>	<ul style="list-style-type: none"> <li>• populations of fish widely dispersed</li> <li>• potential fishing cites located far from communities</li> <li>• declining productivity in some • reee currently fished</li> <li>• conflicts with other resource usage (i. e., hunting on Baffin 1s1and)</li> <li>• high costs of production and freighting</li> <li>• market prefers fmeh to frozen product.</li> </ul>
Lake Trout	<ul style="list-style-type: none"> <li>• little opportunity • xcept for sportfishing</li> </ul>	<ul style="list-style-type: none"> <li>• no big market demand specifically for lake trout</li> <li>• heavy competition from "farmed" Idaho trout</li> <li>• limited potential for development - herd to maintain • tocke</li> <li>• stocks have been over-fished</li> </ul>
Northern Pike	<ul style="list-style-type: none"> <li>• established marketing infrastructure (FF MC) into France</li> </ul>	<ul style="list-style-type: none"> <li>• harvests tied to whitefish harvesting, which is declining</li> </ul>
InCore-u	<ul style="list-style-type: none"> <li>• fish is suitable for the U.S.A. smoked markets</li> </ul>	<ul style="list-style-type: none"> <li>• harvests tied to whitefish harvesting</li> </ul>
Scallops	<ul style="list-style-type: none"> <li>• • ebfod dead is escalating</li> <li>• consumer awareness is high</li> <li>• local interest and confidence in the fishery</li> <li>• stated interest from Ottawa wholesaler</li> </ul>	<ul style="list-style-type: none"> <li>• relatively high capital investment</li> <li>• industry in Year 2 of test fishery stage - results unknown</li> <li>• long-term production levels unknown</li> <li>• carpeting suppliers have larger products which • o in greeter demand</li> </ul>
Shrimp	<ul style="list-style-type: none"> <li>• stable • xport demand</li> <li>• fishery is being • xploited fully by shrimp fleet</li> <li>• providing training for M.W. T. residents</li> <li>• seafood demand is escalating</li> </ul>	<ul style="list-style-type: none"> <li>• high capital investment cost</li> <li>• shell-on product is produced; generally only demanded by export markets</li> <li>• economics tend to be marginal for many in the Canadian shrimp industry</li> <li>• no new licenses or catch increases expected</li> </ul>
Turbot	<ul style="list-style-type: none"> <li>• demand for saltwater fish is increasing</li> <li>• local interest in the fishery</li> <li>• strong support from Ottawa wholesaler</li> <li>• winter fishing captures higher fish prices</li> </ul>	<ul style="list-style-type: none"> <li>• industry in Year 2 of tes t fi shery stage</li> <li>• total output may remain low</li> <li>• relatively low value fish</li> <li>• product is not well-known to consumers or suppliers</li> <li>• distance from market and competition with west coast halibut</li> </ul>

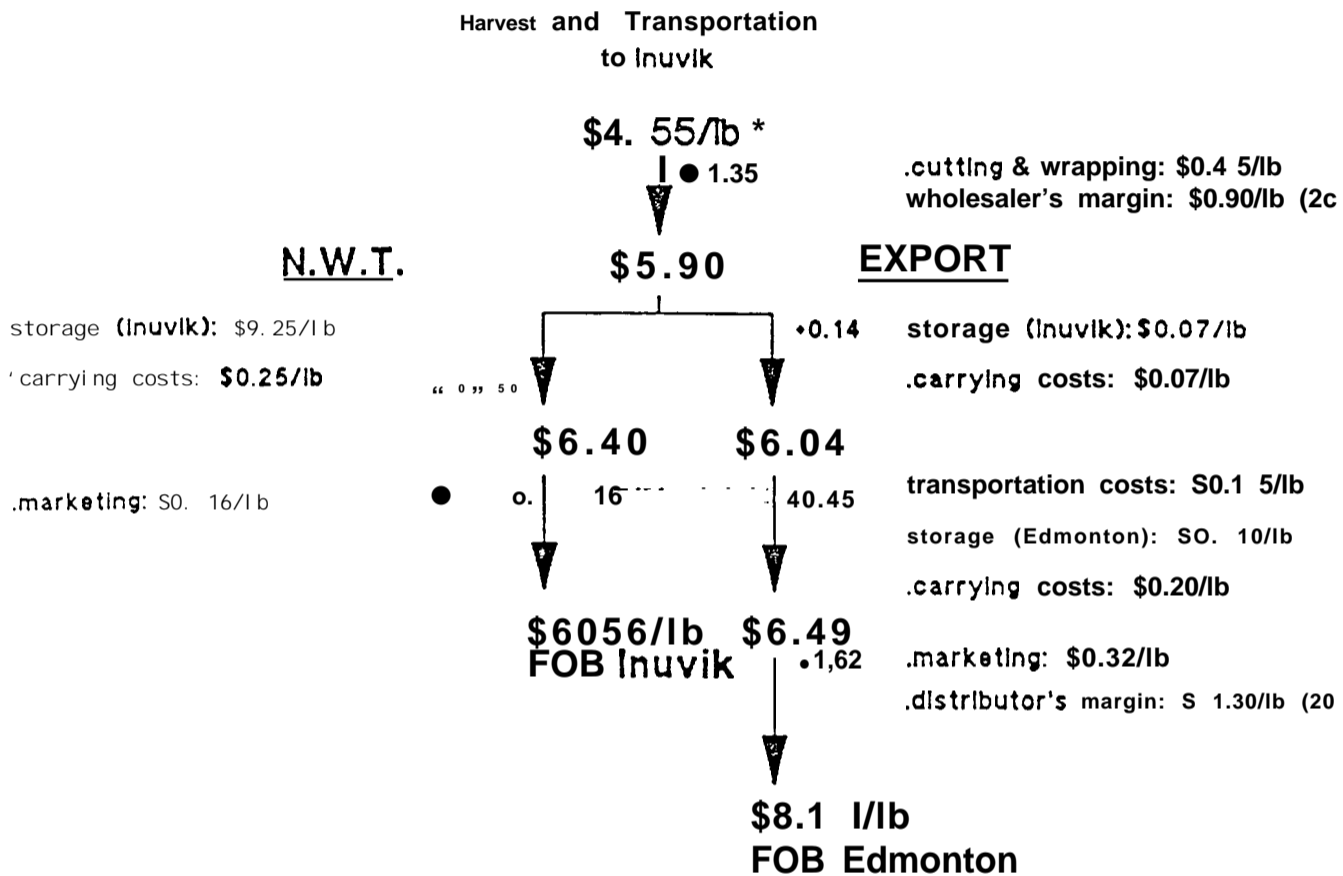
Table 7.2

Anticipated Demand Trend Over Next Five Years

Product	Demand		
	Decreasing	Stagnant	Increasing
Muskox			++
Caribou			++
Reindeer			++
Bison		+	+
Whitefish		+	+
Arctic Char			+
Lake Trout		+	+
Northern Pike		+	+
Inconnu		+	+
Sealops			++
Shrimp			++
Turbot			+

Note: ++ indicates a greater magnitude than +

## Muskox Cost - N.W.T. & Export



\* Includes purchase price of \$1.25/lb paid to HTA  
Source: P.M. Associates Ltd. and DH&S

## Cost of Caribou - N. W. T. Only

Harvest Price\*

\$ 1.25/lb.



•1.25

.cutting & wrapping: \$0.45/lb  
storage: \$0.25/lb  
.carrying charges: \$0.25/lb  
.marketing: \$0.05/lb  
.wholesaler's margin: \$0.25/lb (20%)

\$2.50/lb

FOB Community  
of Origin

\* Current price paid to hunters

Source: P.M. Associates Ltd. and DH&S

Figure 6 . 3

## Cost of Fish - Whitefish Example

Harvest Cost FOB Winnipeg

\$0.62/lb



•0.43

.processing: \$0.22/lb  
.packaging: \$0.03lb  
.carrying costs: \$0.04/lb  
.marketing: \$0.04/lb  
.agent's packing allowance: SO. 10/lb

\$ 1.05/lb

FOB Winnipeg

Source: FFMC and DH&S

**New Zealand Exports Of Venison**

(kg.)

	<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986*</u>	<u>1987**</u>
Australia	89,337	93,354	107,494	116,812		
Canada	.	1,973	13,039	19,404	46,500	75,000
U.S.A.	239,722	393,717	460,802	501,774		
Vest Germany	915,902	519,958	865,991	878,251		
Japan	102,742	116,783	104,435	186,058		
Switzerland	74,676	108,584	116,827	237,784		
Other Countries	<u>169,408</u>	<u>144,238</u>	<u>207,613</u>	<u>298,524</u>		
Total	<u>1,591,787</u>	<u>1,378,607</u>	<u>1,876,201</u>	<u>2,238,607</u>		

Price Per Kg.  
(NZ \$)                      5.39                      7.05                      10.16                      9.39

\* Alberta Agriculture, Statistics Branch.

\*\* DH&S estimate assuming the Toronto market is 40% of Canada.

Source: P. M. Associates Ltd. for data 1982/83 to 1985/86.

Table 6.7

--- -- **Estimated Demand Forecast**  
(pounds)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Muskox Demand:					
Local	15,000	16,200	16,800	18,000	19,000
Canada	15,350	81,000	141,600	170,000	185,000
International		<u>35,400</u>	<u>67,200</u>	<u>82,000</u>	<u>96,000</u>
Total	<u>30,350</u>	<u>132,600</u>	<u>225,600</u>	<u>270,000</u>	<u>300,000</u>
Caribou Demand:					
Local	20,400	24,000	28,800	32,000	36,000
Canada	1,700	5,100	6,700	7,500	8,000
International	—	—	—	—	—
Total	<u>22,100</u>	<u>29,100</u>	<u>35,500</u>	<u>39,500</u>	<u>44,000</u>
Total Sales	<u>52,450</u>	<u>161,700</u>	<u>261,100</u>	<u>309,500</u>	<u>344,000</u>
Number of Head	350	1,078	1,740	2,060	2,300

Source: P. M. Associates Ltd.

**AIR CARGO RATES FOR 1-45 KILOGRAMS  
AS OF MAY 15, 1988**

Departure/ Destination	LOW	HIGH
Iqaluit to Yellowknife	3.19	4.47
Iqaluit to Rankin	1.63	1.63
Iqaluit to Cambridge Bay	3.43	4.51
Iqaluit to Montreal	2.86	2.86
Rankin to Iqaluit	1.63	1.63
Rankin to Winnipeg	2.04	2.04
Rankin to Yellowknife	2.04	2.04
Baker Lake to Rankin	.95	.95
Cambridge Bay to Iqaluit	5.88	5.88
Cambridge Bay to Yellowknife	1.17	2.09
Cambridge Bay to Edmonton	2.14	3.29
Cambridge Bay to Spence Bay	1.75	<b>2.25</b>
Inuvik to Yellowknife	1.38	2.24
Inuvik to Edmonton	2.24	2.24
Inuvik to Norman Wells	.92	.92
Yellowknife to Inuvik	1.63	1.63
Yellowknife to Edmonton	1.20	<b>1.40</b>
Yellowknife to Snowdrift	.95	.95
Hay River to Yellowknife	.78	.78
Hay River to Edmonton	1.26	1.26

Note: Cargo prices depend on the airline being used.

Source: Canadian Air Cargo; NWT Air Cargo