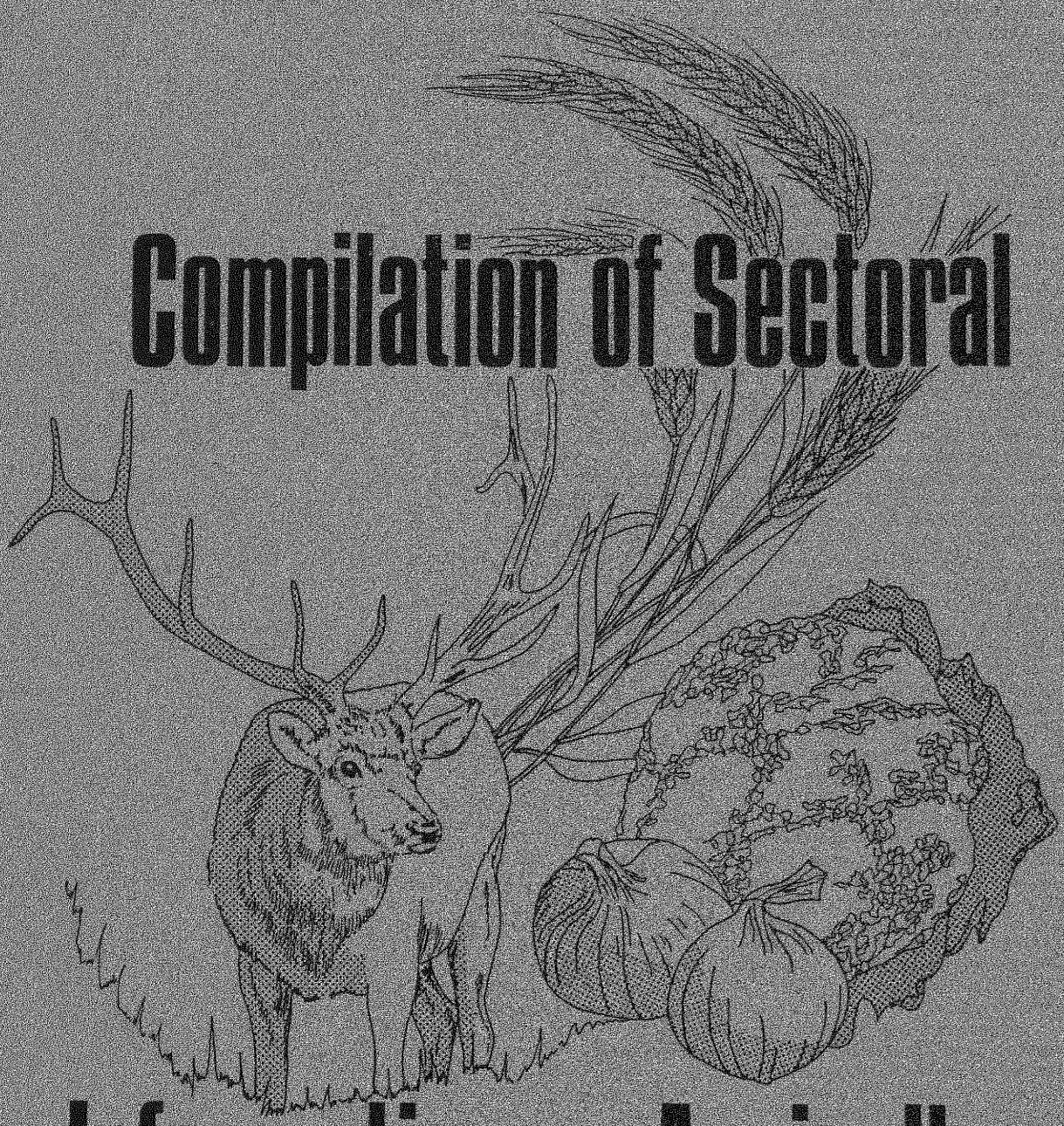
Compilation of Sectoral Information on Agriculture



Yukon
Renewable Resources

COMPILATION OF SECTORAL INFORMATION ON YUKON AGRICULTURE

Prepared For:

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Whitehorse

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I. INTRODUCTION

a) Background

Agriculture is not new to the Yukon. At the time of the gold rush Dawson was producing sufficient quantities of agricultural goods to feed its population. Since then production has decreased, however, the seventies saw a major resurgence in interest in agriculture. Copious papers, studies and reports have since been written which have analyzed most sectors of Yukon's agriculture. These have been written from both the government and private viewpoints, and range from casual comments through detailed feasibility studies.

b) Objectives

The purpose of this report is to provide the Agriculture Branch of the Department of Renewable Resources with a consolidated sectoral review of the existing published and unpublished data relevant to the agricultural industry in Yukon.

To this end material has been reviewed from the files and library of the Agriculture Branch; the Department of Renewable Resources library; and reports relating to agriculture from the Economic Development Agreement. A list of all documents reviewed is provided in Section VIII.

The main thrust of the report is to provide background material and data which would assist an agricultural economist in developing a detailed marketing strategy.

In order to avoid repeating information which is readily available, no attempt has been made to include detailed data on soils, climate or the historical review of Yukon agriculture. Instead the interested reader is referred to the following reports: Peake, R.W. and Walker, P.H.(1975) for a detailed history of agriculture in Yukon; to Rostad, Kozak and Acton (1977) for soils information; and to Ely, F.I. and Findlay, R.F. (1977) for agroclimatic information.

II. GOVERNMENT POLICIES

In the past government policy was basically to discourage, or at best, have a "go slow" approach to the development of agriculture in Yukon. More recently there has been a strong commitment on the part of the Yukon Government for the support of agriculture. The Green Paper (1985 - Discussion Paper "The Future of the Yukon's Renewable Resources") states that:

> "The primary goal of the agriculture unit of Renewable Resources is to support the development of a self-sustaining agricultural industry in Yukon."
>
> "The Yukon Government is committed to preparing a agricultural policy. This policy will determine, to a large extent, how land is released for farming. The policy will emphasize that agricultural activities in Yukon must be based on market demands. In other words we should grow and produce what we can competitively sell to local consumers, and not invest in operations or activities that are non-competitive and that will need government subsidies."

Loeks (1986, Phase III, p.1) states that "..... the Government of Yukon has three goals in implementing an agricultural land disposition program:

a) to encourage the development of a self-sustaining agricultural industry;

b) to select the most suitable land for agriculture from an ecological and economic perspective .... and;

c) to encourage environmentally sound farming practices."

Additional goals and objectives were given in the Department of Renewable Resources, Renewable Resources Commitment to Agriculture (Anonymous, Undated,a)). These included:

"- to encourage the sustainable developent of the Yukon's agricultural industry;

- to ensure the primary role of the private sector in agricultural development;

- to encourage the development of a non-subsidized multi-faceted agricultural industry by

  . promoting food production that replaces imported foods to the greatest extent possible,

- promoting non-food agricultural products of high value, and

- allowing a reasonable diversity of opportunity and life-style for Yukoners interested in agriculture."

The formation of the Agriculture Branch within the Department of Renewable Resources in 1986 is "a clear indication of the serious commitment this government is prepared to give to the farm sector." (Renewable Resources Commitment to Agriculture, p.6). It is important to note that this report also emphasizes the "importance of agriculture as a way of life and as a rural lifestyle that many people wish to pursue ..... the public can expect a continued commitment to this objective."

This continued support is emphasized in the Yukon 2000 - Yukon Economic Strategy goals for agriculture (p. 34) which are:

"Promote the development of economically viable agriculture.

Increase the availability of those lands suitable for agricultural purposes.

Help the industry to develop markets and provide the necessary infrastructure to assist the growth of the industry.

Support research and other innovative development."

The recent development of various agriculture policies and Acts further emphasizes the government commitment to the agricultural sector (eg. Agricultural Policy, Agricultural Products Act, Grazing Policy and Game Ranching/Farming Policy).

Various agricultural statistics indicate that the government support of agriculture is having a positive effect on Yukon agriculture (see Tables I and II). For example, between 1966 and 1987 the value of farm capital has increased dramatically from $47,300 to $24,478,000 (note that the dollar values have not been adjusted to 1987 levels); the number of farms has increased from 9 to 198; and the total area of farms has increased from 3,680 to 30,511.

TABLE I

NUMBER, AREA AND USE OF FARM LAND, YUKON TERRITORY FOR SELECTED YEARS[1]

Item	unit	1931	1941	1956	1961	1966	1987[2]
Number of farms	Number	41	26	16	15	9	198
Number of commercial farms	"	n.a.	n.a.	4	2	2	n.a.
- full time farmers	"	-	-	-	-	-	29
- part time farmers	"	-	-	-	-	-	75
- hobby farmers	"	-	-	-	-	-	94
Total area of farms	acres	5,197	2,781	3,997	8,072	3,680	30,511
Improved land	"	778	511	634	954	463	4,323
Unimproved land	"	4,419	2,270	3,363	7,118	3,217	n.a.
Crops - wheat	"	8	-	23	42	-	-
- oats	"	63	27	52	77	20	1,248
- barley	"	n.a.	n.a.	15	4	-	41
- hay	"	558	392	88	104	108	2,456
- potatoes	"	69	47	17	12	4	30.8[3]
- vegetables	"	5	1	9	5	2	393.2
Livestock - horses	Number	62	90	172	230	17	992
- cattle	"	72	52	104	206	98	206
- milk cows	"	n.a.	n.a.	7	16	9	35
- hens & chickens	"	224	138	296	358	635	9,611
- hogs	"	n.a.	n.a.	n.a.	n.a.	n.a.	144
- sheep	"	n.a.	n.a.	n.a.	n.a.	n.a.	70[3]
- goats	"	n.a.	n.a.	n.a.	n.a.	n.a.	70[3]

[1] from Carr, D.W., 1968, p.150 except for 1987 data

[2] from Yukon Economic Review and Outlook, 1987 - 1988, p.31

3 from Filteau, Agriculture Survey, 1987.

TABLE II

Value of Farm Capital and
Sales of Farm Products

	1961[1]	1966[1]	1987[2]
Land & Buildings	198,600	47,300	24,478,000
Machinery	113,900	56,100	3,967,000
Livestock	59,900	17,900	n.a.
Total Capital	372,400	121,300	28,445,000
Total sales of Farm products	15,610	22,480	364,000[3]

[1] Carr,D.W., 1968, p. 151

[2] Yukon Economic Review and Outlook, 1987 -1988, p. 31

[3] This figure does not include sales of bedding plants, sod or agricultural products consumed on the farm.

III. GENERAL ECONOMIC CONSIDERATIONS

A review of the reports published in the early 1900's indicate that litle has changed since that time. Rowath (1916, p.206) states "farming operations can only be successsful so long as those who are engaged in agriculture produce no more than is required for consumption in the Territory. Careful and systematic farming operations, with due regard to the peculiarities of climate, would abolish the importation into the Yukon of many of the agricultural products required by the people....."

There is little question that the Territory is capable of producing a wide variety of agricultural products as this has been demonstrated many times in the past. Reports (Rowath, 1916; Harris,1969; Carr,1968; YLAA,1986 et al) indicate that vegetables, forages and grains have been successfully grown in diverse locations ranging from Dawson, Mayo, Haines Junction and Whitehorse. Recent experience with demonstration crops confirm these observations.

Although the technical ability to produce agricultural products has been demonstrated, the literature suggests that there may be problems both with producing these products economically and with the marketing of products.

In general the earlier reports were quite negative to the prospects of commercial agriculture succeeding in Yukon. The following quotes illustrtrate this point:

- "Farming may be possible in the Yukon but it is unlikely to be profitable." (Carr, 1968, p.168);

- "There is virtually no potential in Yukon for the new large scale, highly mechanized farming now dominating agriculture in the rest of Canada because the physical environment is not suitable for it." (Carr, 1968,p.169);

- "Heavy capital investment, the high cost of inputs, labor and transportation, the low yields and limited markets make farming financially unsound." (Peake & Walker, 1975 p.44)

In addition, the 1981 Special Committee on Food Prices was told repeatedly that "there are few commodities that could be produced here economcially". However, it was also evident to the Committee that Yukon farmers believe that they can compete with locally grown prduce.

The RMC report (1985, p.46) states that "Many studies have pointed out the poor economics of starting up a farm..... but the demand for any new (agricultural) lands that have become available has always exceeded the supply."

An economic study undertaken in the Northwest Territories revealed that smaller scaled farm operations were viable while larger operations showed negative returns. "Instead of large scale production for the export market, the focus is on small scale production for the local market..... by keeping the scale of production small, there are possibilities for more intensive management; and by focusing on the local market there are reasons to shift away from the major cereals towards more labour intensive, higher priced crops..." (RMC,1985,p.1)

The RMC report went on to state that:

> "One of the ways to circumvent negative returns is by supplementing the family income by off-farm work and building up the farm over a number of years. All enterprises..... gave a positive return to capital, management and labour if it is assumed that the farm is paid for, stocked and equiped by off-farm income.
>
> Part-time farming is a fixed attribute of all agricultural areas in the earliest stages of development, and is a way to gradually increase the level of capitalization to a point where the farm can be viable by itself.
>
> The motivation of part-time frmers is often not of an economic but rather of a life-style nature; the quality of life on the farm and a genuine love for the soil and animals take precedent over the short term economic considerations. However, from a longer term perspective, there is often sound economic reasoning..... in that an established farm has a real value as a retirement investment or inheritance." (RMC, 1985, p.46)

An estimate of the overall economic potential of the agricultural industry in Yukon is provided in an unpublished report "A Discussion Paper on Agricultural Development" (Anonymous, undated b)). According to this paper:-

> "The value of domestic food retail trade in 1984 is estimated at approximately $43 million. By 1990 if the population projections (38,000) are realized the retail food trade could approximate $68 million in 1984 dollars."

"A reasonable expectation for farm gate sales to the domestic market could be in the range of $9 - $12 million (1984 dollars) annually based on a population of 38,000 in 1990 or $6 - $7 million based on a stable population of 24,000 and a tourist influx of 400,000. $6 million represents gross annual farm sales of $50,000 for 120 producers."

"In addition to the retail food trade for human consumption, an important element of the current agriculture industry is the provision of grain and forage for animals. An estimated $838,000 (1984) in these products is currently being produced and the additional import of hay from outside the region has been conservatively estimated at 2,000 tons per year. At current (1984) prices for imported hay this represents a market of an additional $600,000 to $700,000 all of which is lost to the region."

It has been suggested that Yukon's remote location is both an obstacle and the reason that agriculture can exist. The high prices (due to high transportation costs) which can be obtained for locally produced agricultural goods, particularly vegetables and livestock feed, allow these farms to thrive in Yukon while similar ventures elsewhere in Canada may loose money. (Agriculture Canada, 1985,p.43)

"In effect, Yukon producers have a significant disguised subsidy by the amount of the transportation costs of trucking in fresh vegetables." (Resource Planning Branch, 1980, p.42) This report also stated (p. 37) that "Prices in Whitehorse are approximately 35% higher than those in Edmonton, Watson Lake's are 41% and Dawson City's 61%." (Note that this is a 1979 price comparison.)

Finally, Brimacombe (1976) suggests "the extensive personal capital investment and the long term commitment necessary to develop an agricultural production unit makes the small farm operator a fairly stable member of society..... Thus any development of agriculture in the Territory that might encourage small scale farm operations could well add a dimension of stability and social responsibility perhaps need on the Territory at present."

IV. SECTORAL ANALYSIS

This section provides an overview of information which is available for Yukon on four major components of agriculture - cereals, forages, horticulture and livestock.

The potential land base which is available for these activities is as follows:-
(from Prescott-Allen,et al,1987,p.27).

- There is no class 1 or class 2 land in Yukon.

- There is a total of 63,201 ha of class 3 and class 4 land. This land is located mainly in Pelly Crossing-Carmacks (27,730 ha), Dawson-Stewart Crossing-Mayo (24,380 ha), Watson Lake (10, 447 ha) and Faro (644 ha).

  These class 3 and 4 lands are suitable for growing vegetables, oats and barley.

- There is a total of 641,494 ha of class 5 land. The largest single tract of this land is located around Whitehorse.

  This land is suitable for growing frost tolerant vegetables, hay and forage crops.

- The areas with the best climate for crop production are Mayo and Dawson, however most of the farming is located around Whitehorse.

a) Cereals and Greenfeed

. Land currently in production:

Filteau (1987) reports that there were 141 acres of barley, 1087 acres of oats, 139 acres of fall rye, 2 acres of hard spring wheat and 161 acres of greenfeed (oats) in production in 1987.

. Land applied for:

No applications were recorded which indicated the growing of cereals as agricultural activity. Green feed was presumably included in annual forage production. However, annual forage was usually combined with perennial forage production on the applications. This made it impossible to obtain an acreage specific to green feed or annual forage. A total of 19,582 acres was identified for perennial/annual forage/livestock combinations on the application forms.

. Current production:

No production information was found in the literature for Yukon farms for the growing of cereals or greenfeed.

. Current market and price:

YLAA estimated that 10,625 acres of barley would be required to meet Yukon's needs.

There has been no information found on oats.

. Cost of production:

Specific production costs would vary from farm to farm depending on a number of variables. The following examples only provide an indication of production costs.

Deloitt, Haskins & Sells (1987, p.37) give a $83.01/acre cost for a dryland hay/greenfeed operation and $144.29/ acre cost for an irrigated hay/greenfeed operation in Yukon.

Resource Management Consultants (1985, p.39) report that the estimated cost for production of grain for a 250 acre farm in the NWT is $176.68/acre. They estimate the cost of production for a 250 acre hay operation as $137.39/ acre. Note these costs do not include the investment costs for land, equipment and repair shed which totaled 1,037.50/acre for the grain farm and $733.00/acre for a hay farm.

. Imported product:

An estimated $4.5 million was spent on cereals and grains in 1985 in Yukon according to the report on Assessment of Import Substitution Opportunities (p.14).

The 1984 estimated cost of feed barley in Whitehorse was $195/tonne (DPA Group, 1984, p.4)

b) Forages

i) pasture

. Land currently in production:

Filteau (1987) reports that there were 1,108 acres of improved pasture and 9,446 acres of unimproved pasture. Grazing leases totaled 14,750 hectares (Prescott-Allen, 1987 p. 29).

. Land applied for:

There were 76,434 acres of grazing land identified in the computerized record of land application as of Feb/1989.

. Current production:

No information was found in the literature reviewed regarding the current production on improved or unimproved pasture.

. Current market and price:

No information is available on the current price of grazing land. Market (demand) appears to be high as indicated by the amount of grazing land which has been applied for under the agricultural land program.

ii) hay

. Land currently in production

The Yukon agricultural census (Filteau,1987) reports a total of 2,456 acres of land in hay. Most of this land is sown to Bromus inermis var. carleton.

. Land applied for:

A total of 8,815 acres has been applied for as forage and an additional 10,767 acres of land as a combination of forage and livestock. Both of these categories includes option lands and could also include land which will be used for greenfeed production.

. Current production:

Estimated yields for brome production range from 2-3 tons on unfertilized fields and up to 6 tons for fertilized land (per acre).

Whiting (1980, p.25) states that in 1979 "hay varied considerably. The average level of production was 2,651 bales (50 lb. bales) on an average 89.9 acres, or 34 bales per acre."

Filteau stated that "an increase in production can be expected in 1988 and further increases should be evident in each succeeding year. A saturation point will likely come in 1988 or 1989. Some horseman feel that Yukon hay is inferior to hay from the outside."

. Current market and price:

Most of the hay produced in the Yukon is consumed by the local livestock (horses and cattle). Hay sells for up to $7.00 per 60 lb bale (Yukon Agriculture - A Unique Resource).

. Cost of production

The cost of producing hay was identified as a constraint in the Assessment of Import Substitution Opportunities report, (Session 2, p.13).

The average annual operating cost for a farm producing hay in 1979 was $8,387 (Whiting,1980 p.27). See Table III for the annual cost of hay production in 1979.

. Imported product:

The Assessment of Import Substitution Opportunities report also gives the figure of 2,000 tonnes of hay being imported into Yukon (Session 1, p.8).

The estimated cost of imported hay was $185/tonne in 1984 (DPA, 1984, p.4-6).

Approximately $1 million of the total value of agricultural production is accounted for by forage production, which is primarily destined for horses maintained by outfitters. (Yukon Economic Review, 1986-1988, p.50)

Table III. Annual Cost of Hay Production, 1979*

	Average Annual Cost per Farm ($)	Cost per acre ($)
Seed	382	15.80
Fertilizer	2,725	27.10
Machinery Operation	3,296	87.94
Hired Labour	865	9.62
Cash Overhead**	1,119	17.45
Total Cash Costs	8,387	157.91
Depreciation	1,366	36.70
Interest on Investment	2,410	23.84
Operator Labour Value	839	6.00
Total non-cash costs	4,615	66.54
TOTAL COSTS	13,002	224.45

Average acres under cultivation	89.9 acres
Average bales per acre	34
Average cost per bale	$6.60

* From Whiting, 1980, p.25
** Cash overhead includes: taxes, utilities, insurance, rent, mortgages, bedding, stove oil/wood, licences, repairs to buildings and freight.

c) Horticulture

1) vegetables

. Land currently in production:

There is some confusion on exactly how much land is under vegetable production. HLA (1988, p.6) reports 32 acres of potatoes and 14.5 acres of vegetables as the total Yukon area in production. This information was apparently derived from the agricultural census (Filteau,1987), however an examination of this data gives a total of 30.8 acres of potatoes and 358 acres of mixed vegetables in 1987. Filteau also states that there are seveal greenhouse operations. Since the census survey there have been at least two commercial hydroponic greenhouse operations start - one growing lettuce and the other tomatoes and cucumbers.

In addition, the Yukon Economic Review for 1987-88 states that there were 424 acres of land under vegetable production for the same period.

. Land applied for:

The computerized listing of agricultural land applications indicates that a total of 885 acres of land was under application as of February, 1989.

. Current production:

"The Yukon fresh vegetable industry is chacterized by uncoordinated market garden production. Yukon commercial production of vegetables has been held back by:-

- prior establishment of produce supplies from Alberta, B.C. and U.S.A. suppliers;
- absence of grading and storing facilities;
- the small size of commercial growers;
- the practice of selling in the harvest season when there is an abundance of fresh product;and
- lack of developed land for vegetable growing." (HLA, 1988, p.6)

. Current market and price:

"Growers utilize the following methods in selling their products:

1. Gate sales - produce sold on the farm.
2. Farmers market - produce sold at a central urban market along with other producers.
3. Pick-Your-Own or U-Pick - the consumer comes to the farm and picks his/her own produce.
4. Direct sales - to stores and restaurants." (HLA, 1988, p.6)

The main wholesale distributors operating in Yukon and the percentage of the market of each distributor is presented in Table IV.

Prices for locally grown produce are characteristically higher than those of suppliers from southern markets. HLA (1988, p. 10) points out " if wholesalers can purchase the same products from distant markets at lower prices than they can from local markets, they will do so. Wholesalers do not quarantee loyalty to one or two suppliers. Wholesalers are characterized by purchasing products from suppliers who can provide competitive prices and quality products."

See Table V. for wholesale prices of representative produce between 1983 - 1987.

. Cost of production:

Peake & Walker (1975, p.40) stated that the cost of developing a 25 acre vegetable farm in Alaska was between $1200 and $1500 per acre.

RMC (1985, p.33) give the total fixed and variable costs for a three acre market garden in the NWT as $1,484.67/acre. In addition to this there is also a cost of $4,506.67/acre for the investment in land, root cellar, green house and equipment.

See Table VI for Market Garden Costs of Production in 1979. According to Whiting (1980, p.16) a market garden had average annual operating costs of $3,576 in 1979.

. Imported product:

Prices paid for imported vegetables are the same as those indicated in Table V for the wholesale price of vegetables.

Table IV. Wholesale Grocers and Market Shares*
(from HLA, 1988, p. 5)

Wholesaler	Location	Estimated Market Share %	Supplier
Kelly Douglas & Co. Ltd.**	Whitehorse	60	California Mexico, B.C.
Horne & Pitfield Limited	Grande Prairie	30	California Mexico, B.C. Alberta
MacDonalds Consolidated	Dawson Creek	5	California, Mexico, B.C. Alberta
Whitehorse Distributors	Whitehorse	2	Alberta
Simon & Reimann Food Dist. Ltd.	Edmonton	1	California, Mexico, B.C. Alberta
Local Growers	Whitehorse Area	1	
Other (ie. Grocery People)	B.C.	1	California, Mexico, B.C. Alberta

* Market share information was obtained by surveying the wholesalers and retailers who are dominant in the Yukon.

** Includes Sunspan Food Services, which is a division of Kelly Douglas & Co. Ltd.

Table V. Wholesale Prices of Vegetables and Potatoes (1983 - 1987)*

Date	Potatoes (50 Lb.)	Carrots (24x2 lb.)	Rutabaga (50 lb.)	Green Cabbage (50 lb.)
Jan/83	$6.50-8.10	$12.50-15.60	$ 9.25-12.95	$10.00-22.00
April/83	7.50-10.00	15.90	9.95-19.50	N/A
July/83	N/A	12.50-16.70	10.95-14.75	8.95-11.50
Oct/83	6.00-7.75	10.95-15.60	10.75-12.50	8.25-12.95
Jan/84	6.05-12.85	10.50-15.75	10.25-11.25	9.50-12.20
April/84	8.50-12.80	13.50-14.90	7.95-10.90	N/A
July/84	N/A	11.25-15.50	10.25-11.25	9.25-10.00
Oct/84	6.25-7.00	9.25-15.50	10.15-11.95	6.75-11.00
Jan/85	7.00-8.50	11.25-20.95	8.00-12.50	8.25-12.25
April/85	6.00-7.50	N/A	9.00-21.80	N/A
July/85	N/A	9.95-15.00	9.95-14.50	6.90-11.00
Oct/85	5.25-7.00	9.50-14.75	8.00-14.50	6.90-12.50
Jan/86	6.75-8.50	13.25-15.99	8.75-12.95	7.50-12.61
April/86	6.50-11.00	N/A	8.75-15.69	N/A
July/86	N/A	13.50-16.50	11.70-16.95	8.00-11.00
Oct/86	7.25-8.00	13.50-15.00	9.75-12.85	7.95-11.00
Jan/87	12.40	14.20	10.50	14.20
April/87	11.85	16.40	9.10	16.40
July/87	9.50	15.00	8.75	15.00
Oct/87	9.40	13.40	11.10	13.40

* From HLA, 1988. P.8

Table VI. Market Garden Costs of Production in 1979.*

	Average Annual Cost per Farm ($)	Cost per Acre ($)
Seed	231	87
Fertilizer	120	60
Hired Labour	146	60
Stove Oil/Wood	422	189
Machinery Operating Costs	1,366	571
Cash Overhead**	1,309	536
Total Cash Costs	3,576	1,513
Depreciation	966	386
TOTAL COSTS	4,542	1,899

Average size of farm 2 - 4 acres.

* from Whiting, 1980, p.16
** Cash overhead includes: taxes, utilities, insurance, rent, mortgages, licences and commissions, and repairs to buildings

2) berries

. Land currently in production:

The Yukon Gardens has some berries in its operation.

. Land applied for:

Only one application listed berries as a crop. This was in combination with an operation which included livestock. The total land which was applied for is 161 acres plus 642 acres of option land.

. Current production:

No information was found in the literature reviewed on the current Yukon berry production.

. Current market:

There has been a feasibility study on berries completed with funding from EDA. This study had not been released to the public at the time of writing of this report.

. Cost of production:

No information was found in the literature reviewed on the cost of berry production in Yukon.

. Imported product:

No information was found in the literature reviewed on the importing of berries to Yukon.

3) Honey

There is an active beekeeping society in Yukon and it is a developing enterprise. There were no statistics found on land utilization, production or cost of production, or on the imported product. The 1987 YLAA census survey indicated that there were 38 beekeepers with 110 colonies.

The Beekeepers Society constructed an overwintering facility which during its first winter (1988-89) is storing 70 hives (EDA Beekeepers progress report, 1988.

The beekeepers are receiving assistance from Fairview College, Alberta on a regular basis.

4) Specialty crops

Three specialty crops, mushrooms, bean sprouts, a sod operation and a possible tree seedling nursery are included under this section.

There has been a feasiblity study completed on the growing of mushrooms in Faro (Northern Resources and Associates, 1987). The information on mushrooms in this section is taken from that report.

The Yukon consumption of commecially grown mushrooms is nearly 5 lbs per person per year, which gives a total market of between 120,000 and 125,000 lbs of mushrooms per year. On average, wholesalers purchase fresh bulk mushrooms for $1.86/lb, although prices range from $1.45 to $2.00/lb.

The average price which mushrooms are sold to Yukon retailers and restaurants is $2.06/lb, with a range from $1.55 to $2.20/lb.

In addition, there exists the possibility of exporting mushrooms to Alaska, the Northwest Territories and northern British Columbia. No firm estimates of the volume required to supply these markets were available.

Depending on the degree of mechanization cost could range from $14.00 - $45.00 per square foot for the construction of a mushroom operation.

There is limited published information on the other two specialty crops. The one sod farm operation in Yukon is listed as being 22 acres in size by Filteau (YLAA census, 1987). There is also one bean sprout operation. No other published or unpublished data was found on these operations.

A study on the feasibility of establishing a Yukon tree seedling nursery was conducted by Reid, Collins and Associates Limited. This study concluded (p.21) that "a private sector nursery located in Watson Lake could be viable at a 5 million/year seedling production level, assuming competitive seedling prices."

"However, in the consultants opinion, this study although useful from the viewpoint of developing relative capital and operating costs for various production levels, may be a "cart-before-the-horse" situation, in that tree seedling nurseries should be designed for production of a specific number and type of seedlings. These questions must be resolved first; then a nursey can be developed."

d) Livestock

1) Dairy

"To support the dairy herd, a land base is required to produce the required forage and, ideally, the grain as well. Linked directly to forage and grain operations are the required input suppliers for repairs, chemicals, fertilizers and other production necessities. These are often expensive and difficult to source in the Yukon. Similarly , other inputs to the dairy are required, including minerals and supplements, repairs and parts, veterinary services and milk testing. The plant processing the milk also requires support services including maintenance and service, quality testing and promotional expertise. The final link in the system is the slaughter plant. The livestock culled from the herd require disposal..

Many of these basic requirements still require development in the Yukon." (Deloitte, Haskins & Sells, 1987,p.128)

. Land applied for:

No land was identified as being for dairy operations, however this may have been included in the livestock section.

. Current production:

Filteau reports that there are 35 dairy animals in Yukon, and that the milk is sold from the farm gate with demand far exceeding supply. No other production information was found in the literature.

. Current market and price:

The potential market for fluid milk in Yukon is approximately 2,500,000 liters. However Deloitte, Haskins & Sells (1987) point out that "NADP (Northern Alberta Dairy Producers) and Palm Dairies have indicated that both will retaliate possibly in the form of price undercutting, should a third supplier of milk and/or dairy products enter the market place. In this event it is unlikely that a local dairy could survive..."

See Tables VII, VIII and IX for detailed consumption, prices and market projection figures of dairy products.

Note that Whitehorse fluid milk sales are estimated to represent 85% of all milk sales in the Yukon.

. Cost of production:

Peake (1975) stated that development costs in Alaska for a 100 head dairy herd would be between $900 and $1500 per head.

Deloitte, Haskins & Sells (p.98) have calculated that costs for a dairy operation to produce and process milk range from $0.99 to $0.82 over a five year period. Costs were not allocated for interest on debt, principal payments and returns for growth and expansion. They considered the costs to produce milk high in light of the retail and wholesale prices.

They state (p.1) "the high degree of management required, as well as high start up costs, production costs and transportation, have been the constraints that curtailled growth of dairy farming in Yukon to date."

. Imported product:

Deloitte, Haskins & Sells (p.43) state that fluid milk products are currently imported into Yukon from the following Alberta and B.C. dairies:
- Palm Dairies Ltd.
- Northern Alberta Dairy Pool (NADP).
- Foremost Dairies (B.C.).

Milk and dairy products are distributed by four major wholesaler/ distributors in Whitehorse:
- Burns Food Ltd.
- Kelly Douglas.
- Whitehorse Distributors.
- Nu-Maid Distributors.

Burns Food is the largest distributor of fluid milk products in the Yukon (p.43).

Distribution within Whitehorse is 3-5 times per week while the smaller communities may only receive dairy shipment once or twice per week (p.44).

Deloitte et al estimate that freight charges add $0.50 per 2 litre carton of milk.

Table VII. Yukon Dairy Consumption*

Product	Daily	Yearly
Standard (Homogenized Milk)	2,281 l	832,859 l
Partly Skimmed 2% Milk	4,364 l	1,593,068 l
Skim Milk	309 l	112,633 l
10% Cereal Cream	200 l	73,172 l
18% Table Cream	26 l	9,408 l
33% Whipping Cream	61 l	22,213 l
Sour Cream	51 l	18,815 l
Yogurt	172 l	62,815 l
Ice Cream	875 l	319,345 l
Butter	279 kg	101,675 kg
Cheddar Cheese	175 kg	64,026 kg
Processed Cheese	195 kg	71,082 kg
Variety Cheese	266 kg	96,953 kg
Cottage Cheese	96 kg	35,018 kg
Skim Milk Cheese	9 kg	3,136 kg
Whey	6 kg	2,091 kg

Note: Based on Yukon population of 26,133 and national per capita dairy consumption figures.

*From Deloitt, Haskin and Sells, 1987. p.50

Table VIII. Prices of Dairy Products

Product	Suggested Wholesale Price Averages	Retail Price Averages
Homogenized	0.86 - 0.98/1	1.16/1
2% Partly Skimmed Milk	0.87 - 0.97/1	1.12/1
Skim Milk	0.93/1	1.10/1
Yogurt (flavored)	0.67/200 g	1.02/200 g
Yogurt (plain)	1.20/500 g	1.83/500 g
Ice Cream	2.44/2-1	3.69/2-1
Ice Cream	5.65/4-1	6.45/4-1
2% Cottage Cheese	1.23/500 g	1.97/500 g
Butter	2.67/454 g	2.87/454 g
Cheddar cheese	7.56/kg	10.97/kg

Note: Suggested wholesale price averages were obtained through discussions with major retailers and distributors. Retail prices obtained from store surveys.

*From Deloitt, Haskin and Sells, 1987, p. 52

Table IX. Projected Milk Market*

Year	Estimated Population	Fluid Milk Requirements Per Week (litres)	Fluid Milk Requirements Per Year (litres)
1986	26,133	36,687	1,907,709
1987	26,394	37,053	1,926,762
1988	26,658	37,424	1,946,034
1989	26,925	37,799	1,965,525
1990	27,195	38,178	1,985,235
1991	27,467	38,559	2,005,091
1992	27,742	38,956	2,025,166

Note: Based on a 1% rate of population growth per year and 73 litres per capita consumption.

* From Deloitt, Haskin & Sells, 1987, p.51

2) Beef

. Land currently in production:

As reported in pasture section.

. Land applied for:

According to the land application records a total of 96,694 acres of land has been applied for forage, livestock and grazing.

. Current production:

Filteau (1987) reports that there are 85 beef cows, 26 beef heifers and 19 steers out of a total of 206 cattle in the Yukon in 1987.

. Current market and price:

NO information was found in the literature reviewed regarding the current market or prices of Yukon beef.

. Cost of production:

No information was found in the literature reviewed on the cost of beef production in th Yukon.

. Imported product:

No information was found in the literature reviewed on imported beef.

3) Sheep

No information was found in the literature reviewed on sheep in Yukon.

4) Poultry

. Land currently in production:

Three applications indicated the production of eggs and poultry as the main activities. These totaled 82 acres. In addition several indicated poultry as one of a mix of activities listed on the computer printout.

. Current production:

Filteau (1987) reports a total of 9,611 hens and chickens, 561 turkeys, 3,750 ducks, geese quail and pheasant; and a total production of 48,534 dozen eggs.

. Current market and price:

According to Deloitte et al (1987) consumers will pay approximately 25% more for farm fresh eggs. Imported eggs retail for $1.69/doz by Kelly Douglas and Burns, while farm fresh eggs sold for between $2.00 - $2.50/ doz.

The current market for meat birds is very competitive because of the mass produced birds in the rest of Canada. Unless grain can be produced locally, production would not be competitive with current suppliers. (Deloitte et al, p. 65)

. Cost of production:

No information was found in the literaure reviewed on the cost of poultry production in the Yukon.

. Imported product:

No information was found in the literature reviewed on imported poultry products.

5) Hogs

. Land currently in production: Not applicable.

. Land applied for:

No land applications were identified for hog production as an activity on the computerized land application data.

. Current production:

Filteau (1987) reports 144 hogs in Yukon. Of these 2 were boars, 12 sows and 130 were classed as "other pigs".

There is one larger scale hog operation in the process of being developed. The 1988 progress report indicated a projected production level in 1989 of between 300 and 375 wieners.

. Cost of production:

No information was found in the literature reviewed on the cost of pork production in the Yukon.

. Imported product:

No information was found in the literature reviewed on importing pork to the Yukon.

6) Game Animals

. Land currently in production:

The report "A Compilation of Existing Data for Agriculture, Grazing and Other Land Alienations in the Greater Whitehorse Area" lists 3 game farming operations in the Hootalinqua area. These operations have a total area of 168 ha or 370 acres.

. Land applied for:

A total of 3,999 acres are indicated on land use applications where game farming was given as an activity on the computer listings.

. Current production:

No published information was found on the production levels from any of the game farm operations.

. Current market and price:

A feasibility study on the Northern Splendor Reindeer Farm (Hunt,1988) gives several economic models which could be followed for a successful reindeer operation The models initially utilized farm gate sales for the sale of red meat, but after this initial period (of three years) the operation would require meat inspection/slaughter facilities. Hunt (p.11) used the figure of $4.00/lb for reindeer meat in the feasibility study. Hunt further states that "prices of $4,000 to $5,000 a breeding pair are realistic", but "....within a 10 year time frame the breeding sales price should approach the meat sale price."

Both Hunt (1988) and Paish (1987b, p.12) indicated that "the market for antler velvet is highly volatile, while it provides income when the price is high, it cannot be relied on as a basis for a stable industry." This applies to both reindeer and elk velvet.

Paish (1987b, p.15.) suggests that it would take an initial investment of between $400,000 to $450,000 to start an elk farming operation. In addition there would be $17,000 to $20,000 annual operating costs (including labour). Paish further states that no income could be expected for the first two years and only an income of $20,000 could be expected afterwards.

Paish (1987b), p.53) provides an estimate of the capital investment cost necessary to start a buffalo farm. The total investment for land development, fencing, machinery and stock (20 females, 3 males) would be approximately $251,000. Annual operating costs are estimated to be $10,000 - $20,000 and annual revenues of between $12,000 - $15,000.

Similarly for muskoxen (p. 55) the initial investment for land development, fencing, facilities, machinery and stock (20 breeding pairs) is estimated at $516,000. Annual operating costs would be in the order of $20,000. Annual revenues would be approximately $20,000.

In summary "high start-up costs incorporating land preparation, acquisition of stock, fencing and facility preparation make the projects uneconomic, assuming a start-from-scratch operation, and would provide limited return on investment or labour..." (Paish, 1987b, p.18). However, Paish does suggest that "these projections would be scaled down considerably by the more typical part-time farmer who is prepared to follow life-style and rural residential objectives rather than strict economic efficiency".

e) Summary of Agricultural Land Disposition Data

Many reports reports have suggested that one of the main deterrents to agricultural development in Yukon is the lack of farm land, either in private ownership or lease tenure (YLAA, 1986; Filteau, 1987). A cursory analysis of the information which is available on land provides the following statistics:-

- the Filteau agricultural census lists the total area of Yukon farms as 30,511.

- a review of the data on agricultural land applications in Table X suggests that a total of 110,636 acres of land is under application as of February, 1989.

- if all the land which is under application is granted, then Yukon would have a total of approximately 160,540 acres of land in farms. This figure includes the 32,450 acres (14,750 ha) of land under grazing lease (Prescott-Allen, p. 27).

- a comparison of this figure with the estimated area required to support Yukon's population from Tables XI and XII, which totals 77,425 acres. This suggests that there is, or will be, approximately 83,115 acres of land in excess of that required to support the population of Yukon.

See also table XIII which provides a summary of this land data.

If all the land is developed for agriculture which is being requested under the agricultural land application process, there is the potential for over production of most agricultural commodities. This trend has already be noted by Filteau when he suggested that there would be a saturation point reached in Yukon's hay production by 1988 or 1989.

This over production may not occur since several of the reports (eg. A Discussion Paper on Agricultural Development(draft), 1985) have stated that part of the demand for land is generated due to the agricultural land application process. This is (or was) the main route through which land can (or could) be obtained. A percentage of the land applicants desire only to obtain rural residential property and may not necessarily develop the land for agriculture. However, these figures suggest that caution is required in the continued release of

agricultural land.

This point was emphasized in "A Discussion Paper on Agricultural Development" p. 23-24 where it is stated-

> "Given the non-competitive nature of Yukon agricultural products in markets outside Yukon great care must be taken not to overstimulate Yukon agricultural production beyond that which the domestic Yukon market can absorb. To do so would result in an oversupply which would depress prices to the extent that producers could not continue to operate. Other jurisdictions with a more advanced sector have to some extent resolved this problem through marketing boards and quotas or stabilization programs that quarantee a return at least equal to cost of production. This kind of government intervention can be expensive. In Yukon where the majority of the land belongs to the Crown the planned release of land can have the same effect."

Table X. Acreage of Various Types of Agriculture as Indicated on Agricultural Land Applications up to February, 1989*

		Acres Option Land	Total
Forage	3,843	4,972	8,815
Forage/Livestock	3,169	7,598	10,767
Grazing	76,434	-	76,434
Livestock	604	74	678
Market Gardens/ Greenhousing	558	327	885
Berries/Livestock	161	642	803
Eggs/Poultry	82	-	82
Mixed Farming**	3,279	4,894	8,173
Game Farming	1,201	2,798	3,999
TOTALS	89,331	21,305	110,636

* From the Department of Renewable Resources computerized record of agricultural applications.

** Includes a mix of the following categories as indicated on the agriculture land applications: market gardening, dairy, forage production and livestock.

Table XI. Acreage of Land Required for the Production of Meat in the Yukon.*

	No. Head	Yukon Share	Acres Required Grain	Hay	Pasture
Pork	10,000	6,700	3,500	-	-
Turkeys	35,000	24,000	360	-	500
Chicken	250,000	160,000	800	-	-
Laying Hens	30,000	20,000	625	-	-
Beef	7,500 Cows & Heifers	5,000	-	20,000	20,000
	4,800 Slaughter Animals	2,500	3,500	10,000	10,000
Dairy	600 Cows	400	800	1,500	1,500

Total Acres Required - Grain 9,000 (Barley)

Hay 31,500

Pasture 32,000

72,000

* From YLAA, 1986. Appendix 'D'

Table XII. Acreage Requirements for Land Excluding Red Meat Production*

Vegetables	300 acres	
Dairy	800 acres	- barley
	1,500 acres	- pasture
	1,500 acres	- hay
Laying Hens	625 acres	- barley
Horses	1,500 acres	- hay
Poultry Meat	200 acres	- barley
Total	6,425 acres	

* From YLAA, 1986. Appendix 'E'

Table XIII. Summary of Agricultural Land Disposition Data

Land Class	A Land in Production (Filteau)	B Land Applied For	Sector Total A+B	Land Required To Support Yukon Pop.*	Short-fall(-) Surplus (+)
1. Cereals	-	-			
.barley	141	-			
.other cereals	1,228	-	1,530	10,625	(-)9,095
.greenfeed	161	-			
2. Forages	-	20,260**			
.hay	2,456	-			
.unimprvd pasture	9,446	-	142,154	66,500	(+)75,654
.improved pasture	1,108	-			
.grazing leases	32,450***	76,434			
3. Horti-culture	389	885	1,274	300	(+) 974
Subtotals	47,379	97,579	144,958	77,425	(+)67,533
4. Undevel-oped farm land****	15,582	-	15,582	-	(+)15,582
TOTALS	62,961	97,579	160,540	77,425	(+)83,115

Total Farm Land If All Agricultural Land Disposition Applications Are Approved.....160,540 acres.

Total Farm Land In Excess Of That Which Is Required To Support Yukons' Population.....83,115 acres.

*From YLAA - See Tables XI and XII.

**This figure may possibly include some proposed greenfeed production and/or pasture.

***From Prescott-Allen (1987)

****Undeveloped farm land acreage was arrived at by adding all the land under production except grazing leases (14,929) and subtracting this from figure for total farmland (Filteau) of 30,511 acres.

V. Marketing

> "the overall objective of marketing is to combine production with the supply of goods and services to consumers in the most efficient manner in line with the desires of society". (Theodor Dams, 1980).
>
> "Very few producers have considered markets for their products which they intend to produce. They mainly expect that a market for their produce will be available when required." (Filteau, 1987).

a) Farmers' Market

The special Committee on Food Prices (1981) received many comments from people about the need for a farmers' market in the Whitehorse area. The Committee was referred to the Alberta Governments program of assistance to establishing farmers' markets. It was recommended by the Committee that the Government of Yukon make a one time grant available to encourage the start-up of farmers' markets in Yukon; and that farmers' markets should be run cooperatively.

The report on the Assessment of Import Substition Opportunities also recommended the formation of farmers' markets as part of the "action needed" in agriculture.

b) Local Distribution Companies

The 1987 Northwestel telephone directory for northern B.C. and Yukon lists five feed dealers which are located in Whitehorse. These are Circle D Ranch, Coop Feeds, Master Feeds, Northwest Feed and Tack, and United Feeds.

The directory also lists six companies which are involved with nursery stock and/or landscaping: Adorna Flowers and Landscaping, Birknel Enterprises, Decora Landscaping Ltd., Sourdough Sodbusters, Golden Construction Ltd. and Iditerod Landscaping.

According to the directory there are a number of companies involved in meat distribution within Yukon. Those with Yukon addresses include Burns Foods Ltd., The Sausage Factory, Whitehorse Distributors Inc. and Yukon Meat and Sausage. Distribution companies in Whitehorse dealing with dairy products are Burns Foods Ltd., Kelly Douglas, Whitehorse Distributors and Numaid Distributors. Companies dealing with vegetable produce are given in Table IV.

c) Export Potential

There appears to be little information available on the subject of exporting agricultural products from the Yukon. What information there is suggests that this activity would not be economic. For example, the Discussion paper on Agricultural Development (1985) states "Cost of production together with cost of transportation limits the possibility of export to the south except for specialty items such as elk or moose meat or processed products from game meat and specialty crops such as blueberries. Limited potential for sales in N.W. Territories or eastern Alaska may exist....".

The Draft Agricultural Policy of the Yukon Territory (1980) stated in its conclusions "There are no agricultural products for which Yukon can claim a natural competitive advantage". This coupled with the high costs of transportation for goods coming into the territory, which are required for the production of agricultural products, reinforce the conclusion that there would be little likelihood of export opportunity to southern markets.

However, the Yukon 2000 report suggests that the encouragement of the local market would enable Yukon farmers to compete more successfully in markets outside Yukon. The report also suggests that the "Yukon and Alaskan governments could, in agreement with the Federal Government, consider the development of an agricultural exchange network". (2)

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(1) Authors note: No reference was made in any of the reports reviewed to the possibility of utilizing the "backhaul" of the transportation trucks bringing goods into Yukon. Generally these trucks return to southern destinations empty.

(2) Note also that the subject of the impact of the Free Trade Agreement between Canada and the United Stated was not discussed in the reports which were reviewed. This agreement potentially could have a large impact, either negatively or positively, on Yukon agricultural production.

Game animals:

Both Hunt(1988) and Howard Paish (1987) agree that, while there is a market for antler velvet in the orient, this market is "highly volatile, and while it provides income when the price is high, it cannot be relied on as a basis for a stable industry. Reindeer produce a lower quality velvet than elk." (Howard paish, 1987, p.12).

Paish (p.12) also observes that "the high prices paid for live animals for breeding stock has attracted considerable attention in Canada as a result of the demand for Canadian elk in New Zealand. The general consensus is that this is a short-term market as breeding herds reach capacity, and eventually animal prices will stabilize to reflect the earnings which can be realized from the sale of meat."

d) Processing Possibilities

Little information on the possibilities of processing of Yukon agricultural products was found in the literature review. The information on processing was generally part of feasibility studies done for evaluating dairy operations and for the vegetable growers cooperative. A feasibility study on berry production may also provide some information on processing when that report is released to the public.

Deloit, Haskins and Sells (1987,p.89) in the dairy feasibility study for the Champagne Aishihik band explored the feasibility of producing fluid milk and cheddar cheese as part of a Yukon Dairy operation. This report provided detailed costing for equipment, production and annual operating costs (p. 90-98) for a plant with a production volume of 700,000 liters of milk. Their conclusion was that the costs for this operation were "high in light of retail and wholesale prices."

The operation of a dairy would require that an abattoir be available for the handling of culled cows and calves from the dairy. One study suggested that "a small abattoir could be self-sufficient with a kill of 30 animals weekly or 1,500 annually (based on a 50 week slaughter year). This kill could consist of beef animals, elk, reindeer, sheep and lambs. "(p. 120, xeroxed chapter on Abattoir Feasibility (undated, untitled) in Agriculture Branch files). However it went on to conclude that animal numbers were not sufficient to make this type of operation feasible.

The above report also suggested (p.125) that "another option would be the construction of a small abattoir (although not completely self supporting) that would facilitate slaughter of

current livestock production. Such a facility may provide the impetus needed to encourage more livestock production in the Yukon". Such a facility would require the services of a veterinarian . (p.121). Note: The author is aware of a more detailed study on the establishment of an abattoir facility in Yukon has been completed. This study, however, has not yet been released to the public.

The report on the feasibility of establishing a growers cooperative and associated vegetable storage facility (HLA, 1988) included the washing, grading and packaging of certain vegetables. This report concluded (p. v & vi) that such a cooperative would produce surplus earnings for distribution to the cooperative members. However, no attempt was made to relate these surplus earnings to the actual growers cost of production. Hence the question of viability of such an operation was not really answered.

VI. Pertinent Recommendations and Conclusions from Reports Reviewed.

The following are a selection of the conclusions and/or recommendations from the various documents reviewed which still seem to have applicability to the agricultural situation in 1989. For ease of reference they are presented by author in chronological order.

1. Peake, R.W. and Walker, P.H., 1975.

- p. 59. "Attention has been drawn to the lack of equipment for clearing and breaking and the need for knowledge and care in these operations. A properly equiped and trained unit under the Agriculture Development Council will be able to clear and break at considerable saving, than individuals with minimum equipment and funds."
Note: This was written prior to the formation of the Agriculture Branch which would now be the logical agency to administer such a program.

- p. 60. "Because of the importance of horses and dogs in the Yukon in addition to the growing cattle population a subsidized service of veterinary medicine is warranted. The service could be provided by one veterinarian assisted by one or more technicians."

2. Agricultural Policy of the Yukon Territory(draft), 1980.

- p. 17. "The Territorial Government identify agricultural research priorities and initiate the most economical means to meet its research priorities."

- p. 18. "Only where specific needs or opportunities are identified, should the territorial government initiate financial incentive programs."

--- "A high priority be given to efforts to generate useful statistics and information on agricultural matters."

-p. 43. "There are no agricultural products for which Yukon can claim a natural competitive advantage."

--- "The agricultural opportunities and requirements of the territory are limited by its population."

--- "There is virtually no infrastructure to assist in the orderly provision of institutional services to agriculturalists (eg. soils lab, research facility, extension

services, inspection services, storage, abattoir, marketing boards, etc.)." Note: Extension services are now an integral part of the Agriculture Branch.

--- "Large scale agriculture is not considered commercially feasible in Yukon and should not be encouraged at this time."

--- " Hobby farms, small rural acreages and home gardens are all an integral part of the food production system in Yukon."

3. Resource Planning Branch, 1981. (Draft Agricultural Policy of the Yukon Territory.

- P.16. "Seek the re-establishment of a federal research presence in Yukon."

--- "Provide limited assistance to educational institutions to undertake research and/or provide courses in agriculture."

4. Kutchin Consultants, 1983.

- p. 46. "Assist with the establishment of farmers markets."

--- "Provide storage facilities for root vegetables."

--- "Assist with land clearing, fencing and irrigation projects."

5. Unauthored, Undated(1985?). A Discussion Paper On Agricultural Development. Xeroxed copy on file with Agriculture Branch.

- p. 26. "Distinguish between agricultural land and rural residential land and make rural residential land available under an equitable pricing system."

--- "Release agriculture land on a timetable such that overproduction of various commodities is not encouraged."

- p. 27. " Require a five year farm management plan for all agricultural land released."

--- "Provide assistance to educational institutions to provide courses in agriculture and seek to have Canada Manpower establish short term agriculture training courses."

--- "Establish a market advisory service to producers

respecting prices, demand, marketing techniques etc."

- p. 30. "Recognize the importance of part-time producers and provide the same level of extension services and advice to them as to full-time producers."

6. Howard Paish and Associates, 1987.
Phase Three, Final Conclusions and Recommendations

- p. 4. "the Yukon Government ensure that the objective of economic self-sufficiency as implied in the 1985 Green Paper as a rationale for agricultural development, allow for the special circumstances of the part-time farmer."

VII. Conclusions

1. The analysis of information which is available on land currently held by farmers and land which is under application to be released for agriculture suggests that there will shortly be more land than is required to support the population in Yukon. This situation will likely result in an overproduction situation of most, if not all, agricultural products which can be grown in Yukon.

2. The literature suggests that only small scale farm operations are likely to be viable enterprises, and that part-time farming is a characteristic of an area where agriculture is just starting to develop. This is in accord with stated government policy which is to support agriculture as a life-style option where possible. These facts should be acknowledged in government agricultural policies.

3. The type of support that is required by the agricultural community is the provision of infrastructures such as research and development, extension services on farm planning and management, marketing, laboratory facilities, meat inspection and veterinary services. Consideration should also be given to assistance for developing farm water supplies and electricity, land clearing, general farm insurance and the provision of low interest loans for financing capital development and working capital requirements of farm operations. Several reports suggested that any assistance which is provided should not be in the form of non-repayable grants to individual farmers.

4. The provision of educational courses, possibly in conjunction with the Yukon College in affiliation with a southern university, is recommended as one way of providing information on farm management as well as providing a vehicle for the undertaking of agricultural research and development in Yukon. Several of the reports reviewed supported the idea of re-establishing a Federal government agricultural rsearch station in Yukon. This could possibly be developed in conjunction with the Yukon College in association with the proposed agricultural course curriculum.

5. Improvements are required in the agricultural information base. Generally the Yukon agricultural statistics were found to be poor and incomplete, and in some instances misleading. The Agriculture Branch should explore the possibility of developing a census program in cooperation with Statistics Canada.

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