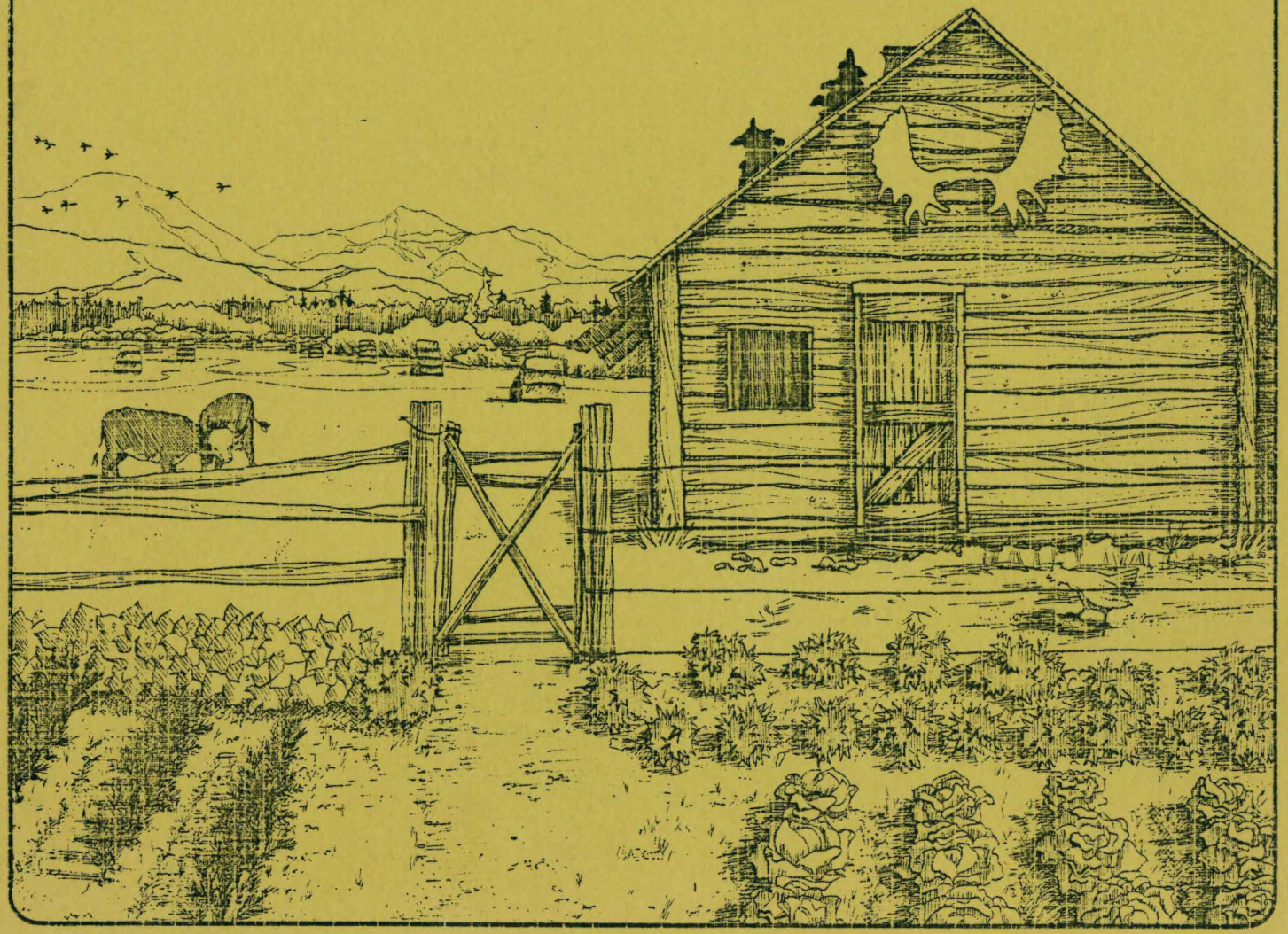
cost of agricultural production in yukon

december 1980



COST OF AGRICULTURAL PRODUCTION IN YUKON

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ACKNOWLEDGEMENTS

This survey, the first of its kind in Yukon, could not have occurred without the help of those Yukoners who took the time and made the effort to respond to our questions. These people are very independent and sometimes don't appreciate 'the government' bothering them. To each of those who responded, many thanks.

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INTRODUCTION

In 1979, the Yukon Territorial Government embarked upon a program designed to develop an agricultural policy for the Territory. Through this program, it soon became apparent that although there was baseline physical data on soils and climate, there was no information on the economics of agriculture. This study resulted from that realization.

The purpose of this study was to determine as accurately as possible the actual costs of different types of agricultural production in Yukon. Just as there is a need for more refined information of a physical nature concerning agriculture, so too should it be recognized that this study is only a first step in developing an economic information base respecting agriculture.

To give the reader an appreciation of agriculture in Yukon, it should be pointed out that 'agriculture' has been carried out since the arrival of fur traders in the 1800's. In fact, at one of the most northerly trading posts, New Rampart House, thirty miles downstream from Old Crow and well within the Arctic Circle, a 360 acre farm was once established. In the late 1800's and early 1900's with the gold rush at Dawson, there developed a significant agricultural industry growing fresh vegetables and meat for the gold seekers and forage crops for their pack horses. In 1945, the Canada Department of Agriculture established an Experimental Farm at Mile 1019 of the Alaska Highway, three miles west of Haines Junction. Although this farm was closed in 1970 removing any Agriculture Canada presence in Yukon, there has remained a strong interest and willingness of Yukoners to farm.

Current Statistics Canada figures suggest that there are seventeen (17) farms in Yukon, of which three (3) are commercial (i.e. sales of over $2,500). However, in determining the respondents to this study, it was found that there are one hundred (100) leasees of agriculture, grazing and/or agricultural-residential leases from both the territorial and federal governments. In addition, there are a number of private agricultural holdings. In summary, this study has estimated that there are thirty-eight (38) farms which are or are close to being considered commercial farms.

There are two agricultural supply firms in the Whitehorse area (Buckerfields and Norland) selling feeds, fertilizers and other supply items. Apart from these two commercial supply firms, there are virtually no agricultural support industries or services. Only since November, 1980 have the provisions of the Feed Freight Assistance Act been extended to Yukon, and it is the only assistance program available to Yukon's agriculturalists. This study helps in the determination of the need for other assistance programs and the broader question of agricultural industry development in Yukon.

STUDY METHOD

The results of this study are based upon personal interviews conducted with Yukon farmers during the summer of 1980. The questionnaire used is attached as an Appendix. The survey was initiated without the benefit of knowledge of who Yukon's producers were, what they were producing or where they were located. Because of this situation, a census approach

was adopted: i.e. any and all farmers identifiable were included in the study.

From lists of leaseholders, a tentative list of farmers was drawn up. This resulted in a series of thirty-nine (39) names of persons located throughout the territory. At the time of interview, other unidentified potential respondents were located and in this way, the total list expanded to forty-seven (47).

Of this number, only thirty (30) questionnaires were completed and useable for data analysis purposes. Of the seventeen (17) not completed, eight (8) were understood to be significant omissions from the survey.

Data was analyzed in aggregate and by type of enterprise, (namely: market garden, mixed farming and hay production). To facilitate analysis it was necessarily assumed that geographic location did not add significantly to costs.

A number of other assumptions were made in the analysis. In terms of land associated improvements and buildings, the following assumptions were made:

1. The percentage of building use, as determined by the respondent, was used to allocate capital cost.
2. The amortization period was established at twenty-five (25) years, based upon a reasonable life span and accounting practices.
3. No salvage value was attributed to buildings at the end of the twenty-five (25) years.
4. Assessed value was the value amortized.

With respect to machinery and equipment, the following assumptions were made:

1. A ten (10) year amortization period was established, based on reasonable life span and standard accounting practices.
2. All depreciable equipment was treated identically.
3. Farmer purchase price of the piece was the initial value that was depreciated.
4. A salvage value of zero was attributed to all machinery and equipment at the end of the amortization period.

The analysis faced conceptual problems concerning the cost of operator labour, land clearing and interest on investment.

1. Operator Labour: Farms were treated as proprietorships, where the proprietor is not paid a wage: i.e. his income comes out of net revenue. Since most respondents indicated that their operation relied upon other non-farm income to sustain and maintain the farming operation, it was believed inappropriate to include the value of operator labour as a cost component, except in those cases where at least fifty (50) per cent of income came from the farm. In those cases where operator labour value was included in the cost evaluations, a figure of $6 per acre per year was used. This amount is comparable to that used in several provinces.

2. Land Clearing and Preparation: Initial land clearing and preparation costs were extremely difficult to determine. This was primarily due to the significant variation in the technique or technology used to create the improvements, the degree of past improvements, the terrain and vegetation at different locations, and the fire history of different sites. Because of this variability, a surrogate to actual dollar expenditure was used that reflected the level of effort in clearing and

preparation. The selected surrogate was the total number of hours, broken down between labour and equipment.

3. Interest on Investment: This was considered a cost item on those enterprises that earned a majority of their income from farming. Those farms that did not, were considered hobby or lifestyle farms for which the opportunity cost on that investment was nil. An interest rate of 10% was used to establish this cost component where applicable. This rate was selected to reflect the social opportunity cost on invested capital to the farmer.

STUDY RESULTS

a) SUMMARY STATISTICS

Table I provides a summary of farms and their characteristics in Yukon in 1979. It will be noted that farm areas have been identified. These should be considered as fairly narrow corridors (10 miles either side) of the roads in the general area of the towns named (see map on page 7).

In terms of the family characteristics of Yukon's farmers, all the respondents either had spouses or lived in a family group. The average number of dependents per household was 1.3, excluding spouses. Of those with dependents, the average number was 2.9 persons.

The average number of years of agricultural experience of the respondents was 21. The range of answers fell between 3 years and 68 years. The average number of years of activity at the respondent's current location was approximately ten (10) years. The range of years was from 2 to 33 years.

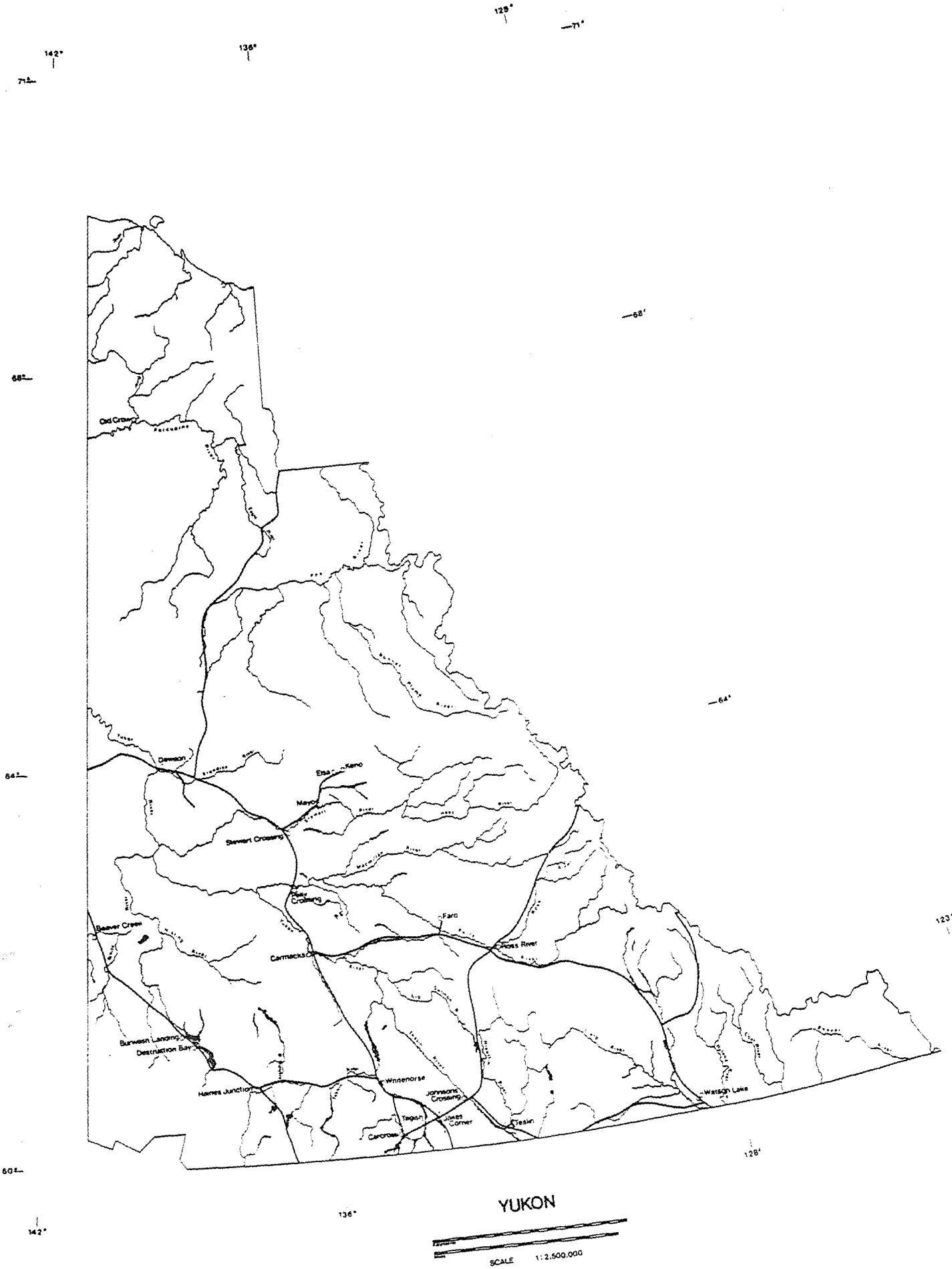
TABLE I

Farm Characteristics by Farm Area

Farming Area	Haines Junction	Whitehorse North and West(1)	Whitehorse South and East(2)	Mayo/ Dawson	Pelly/ Ross River	TOTAL	%
Number of Respondents	2	10	7	8	3	30	
Type of Enterprise (No.)							
Mixed	2	7	4	4	1	18	60
Hay		1		1		2	7
Market Garden			1	3	1	5	17
Other		2	2		1	5	16
Leased Land (Total)							
Grazing (Acres)	(a)	2650	1564	(a)		4214	
Agricultural (Acres)	(a)	425	613	484	(a)	1522	
Agri-Residential		888				888	
						6624	
Titled Land (Total)							
Improved (Acres)	(a)	132	40	303	234	709	
Umimproved (Acres)	(a)	36	10	963	123	1137	
						1846	
Total Land						8470	
Business Organization (No.)							
Proprietorship	2	4	2	4		12	41
Partnership		6	5	4	1	16	55
Cooperative Corporation					1	1	4
Farming Commitment (No.)							
Full-time		7	3	7	1	18	60
Part-time	2	3	4	1	2	12	40
Year-round	2	9	4	5	2	22	73
Seasonal		1	3	3	1	8	27
Occupation	1	8	4	6	2	21	70
Hobby	1	2	3	2	1	9	30

(a) - insufficient data for publication to maintain confidentiality

1. Whitehorse North and West: includes the area approximately 50 miles from Whitehorse along both the Klondike and the Alaska Highway.
2. Whitehorse South and East: includes Carcross, Tagish, Johnsons Crossing and the area between Whitehorse.



YUKON

SCALE 1:2,500,000

The number of hours of farm work per household per week (excluding hired labour) averaged 69.1 hours. If we assume that the average number of persons working per household is 3 (i.e. farmer, spouse and one dependent), the average weekly hours of farm labour per person is approximately 23 hours.

Only seven (7) per cent of those surveyed had no other source of income from that generated by the farming operation. The remaining ninety-three (93) per cent had some source of off-farm income. Twenty-three (23) per cent of respondents had off-farm income which accounted for fifty (50) per cent or less of their total income. In other words, seventy-seven (77) per cent of the respondents gained a majority of their income from non-farming. The range of off-farm income for those reporting such income was beween 10% and 100%. Four respondents indicated that 100% of their income was non-farm. Six respondents (20%) indicated that off-farm income was not required to sustain the farming operation, one didn't know (3%); and the remaining twenty-three (77%) indicated that the non-farm income was required to sustain the farming operation.

b) INVESTMENT IN AGRICULTURE

Investment varied considerably among respondents, as might be expected. The average total investment in 1979 for all types of farms was $33,752. Investment in buildings represented thirty-four (34) per cent of total investment and had an average value of $11,529. The range of investment in buildings was significant - $0 to $42,900. Land associated investments (i.e. cattle guards, fences, corrals, wells, etc.) accounted for seven (7) per cent of total investment at $2,408 as an average value. The range of values was from $98 to $16,160.

Equipment investment represented fifty-nine (59) per cent of the total and had an average value of $19,815. The range of values was extremely large, from $0 to $122,175.

Table II presents a breakdown of investment by type of enterprise. As can be seen, mixed farms have the highest level of investment, while market gardens have the lowest level. Investment in equipment is particularly high for mixed enterprises. The least level of investment is by market gardens in land associated improvements. This is reflective of the small size of these types of enterprises.

TABLE II

Investment by Type and Enterprise Type

	Mixed	Hay	Market Garden	All Types
Buildings	$13,327	$ 8,546	$ 3,565	$11,529
(per cent)	(33)	(23)	(30)	(34)
Land Associated	$ 3,163	$ 1,675	$ 270	$ 2,408
(per cent)	(8)	(8)	(2)	(7)
Equipment	$22,603	$ 9,569	$ 8,134	$19,815
(per cent)	(59)	(69)	(68)	(59)
TOTAL	$39,093	$ 19,790	$ 11,969	$33,752
(per cent)	(100)	(100)	(100)	(100)

When investment is analyzed on a regional basis, fairly significant variations appear. Table III shows these variations. In the cases of Whitehorse south and east and Haines Junction, there is a greater investment in buildings than in equipment. This is the opposite from the analysis on an enterprise type basis and for the other three regions. In absolute dollar investments, it appears that the Whitehorse north and west area has a significantly higher level of investment than

any other area.

TABLE III

Investment by Type and Farm Area

Investment Type	Haines Junction	Whitehorse North & West	Whitehorse South & East	Mayo/ Dawson	Pelly/ Ross Rvr
Buildings	$14,503	$16,349	$15,492	$ 4,948	$1,783
(per cent)	(63)	(30)	(53)	(20)	(39)
Land Associated	$ 1,043	$ 4,312	$ 993	$ 2,457	$ 145
(per cent)	(5)	(8)	(3)	(10)	(3)
Equipment	$ 7,250	$34,547	$12,576	$17,305	$2,666
(per cent)	(32)	(62)	(44)	(70)	(58)
TOTAL	$22,796	$55,208	$29,061	$24,710	$4,594
(per cent)	(100)	(100)	(100)	(100)	(100)

c) PRODUCTION

Production figures were generally difficult to obtain with any strong degree of confidence. Without the advantage of sales receipts from wholesalers, or any other form of official receipts, most production figures are based on estimates by the respondents.

Table IV shows the data on field crop production for 1979. The total acreage reported reflects closely to the total acreage for Yukon for certain crops (especially oats and wheat). It does not reflect the total acreage under production in the territory - particularly for seeded pastures and native pastures.

TABLE IV

Field Crop Production 1979

Crop	Average Rate of Seeding	Total Acreage	Average Yield per Acre	Best Yield per Acre
Wheat	1.5 bu/acre	2.5	.7 ton	29 bu
Oats	100.0 lbs/acre	218.0	1.8 tons	2.5 tons
Rye	1.5 bu/acre	52.0	1.0 tons	1.0 ton
Mixed Hay	15.0 lbs/acre	631.0	.9 ton	2.5 tons
Seeded Pasture	na	45	1.5 tons	2.0 tons
Native Pasture	-	747	.25 ton	.5 ton

na - not applicable

In terms of horticultural or vegetable production, the number of producers per crop is listed in Table V. Although these producers were cultivating crops for more than home consumption, many of them were producing fairly small quantities and production was usually measured by the foot-row rather than acre.

TABLE V

Horticultural Producers by Type of Crop 1979

Crop	Number of Producers
Potatoes	9
Turnips	7
Cabbage	6
Tomatoes	6
Carrots	7
Beets	5
Lettuce	4

Total acreage, although difficult to estimate, is less than twenty-five (25) acres in 1979.

An overview of livestock production is presented in Table VI. Not included in this table are figures on horses, since this was not considered an agricultural production activity. In our study, eighteen (18) respondents had horses and the average value per animal was estimated at $526. The total number of horses held by our respondents was 179.

TABLE VI

Number of Livestock Producers and Animal Values 1979

Livestock	Number of Producers	Total Value of Animals	Average Value per Animal
Beef			
Cows	11	$52,200	$ 949.00
Bulls	6	7,620	1,093.00
Steers	2	2,000	1,000.00
Heifers	6	8,700	483.00
Yearlings	4	(a)	
Calves	8	27,994	406.00
Poultry			
Broilers	12	2,935	4.84
Layers	6	308	4.33
Goats	5	2,740	92.50
Hogs	7	2,730	276.00
Dairy Cattle	2	2,550	850.00
TOTAL		$111,777	

(a) - insufficient data

d) LAND IMPROVEMENTS

The cost and effort involved in improving land to the level required for agricultural production were established on the basis of hours of machinery time and labour. The extent of the improvements, the cover type, the terrain, the technique/technology used, the experience of the labourer and the type of equipment used are all variables in the determination of land improvement efforts. Hours of effort was the unit of measurement instead of dollars. In the interest of consistency, it was believed that hours of machinery time and hours of labour (over and above that associated with the machinery), would be a better indication of human effort than any dollar figure. The value of dollars has changed dramatically during that time period. Effort, in terms of man-hours, has not devalued.

In the study, equipment and labour hours were requested for clearing, breaking, discing and harrowing, picking roots and stones and other improvements. This information was correlated with the number of acres involved. The results are summarized in Table VII.

TABLE VII

Average Hours of Labour and Equipment by Type of Land Improvement

	Clearing	Breaking	Disc & Harrow	Picking	Other	Total
Average Number of Hours	81.7 (16)*	22.7 (6)	17.8 (6)	81.0 (3)	185 (2)	136.8 (18)
Average Hours Per Acre	10.1 (16)	8.4 (6)	2.6 (6)	14.1 (3)	4.4 (2)	11.7 (17)

*number of observations are in brackets

From the data, it is not clear to what level land has been improved. It is known that in several cases the level of improvement has been minimal. Land has been cleared, windrows have been formed and seed has been spread over the cleared area. However, current land regulations do little to induce a greater level of improvements and the result would be that the total level of effort identified in this study may be biased downward and may not reflect the level of effort required to bring land into productive cultivation.

Of the total respondents twenty (20) percent disced and harrowed; only ten (10) percent removed rocks and roots, and fifty-three (53) percent cleared land.

e) MARKET GARDENING

Market gardening and home gardening occur throughout Yukon. In the study, a total of five market gardens were interviewed: one in the Whitehorse South area, three in the Mayo/Dawson area and one in the Pelly/Ross River area. Many, if not most, of the farms visited during the course of the study, had vegetable gardens. For the purpose of this study, the distinction between home garden and market garden is as follows: a garden was considered a 'home garden' where all production was for domestic purposes, (no surplus to domestic needs was anticipated or planned); a market garden was one where there was a conscious effort to produce more vegetables than were required for domestic purposes and for which some monetary returns were expected.

Within the Yukon, there are a total of six farms that fit this definition and which are specialized to the point of market gardening being the primary enterprise. Of the six such enterprises in Yukon, five responded to the survey.

i) Capital Costs

This cost component was divided into two parts:

1) buildings, land associated improvements and structures, and
2) machinery and equipment.

All market gardens had housing costs, four (4) had at least one shed, four (4) had at least one greenhouse, four (4) were fenced and three (3) had irrigation, wells or drainage costs. Average total cost of buildings and land associated improvements was determined to be $3,835. A simple straight line annual depreciation of these costs was used to put these capital costs in an annual perspective. This yearly depreciation cost is estimated to be $153.

Equipment costs* were determined on the basis of the cost to the respondent. No information on replacement costs was available that reflected the equipment replacement market in Yukon. Additionally, it was assumed that no matter when the equipment was puchased, it had ten years of useful life left and was therefore, depreciated at an annual rate of 10%. Average total investment in machinery and equipment was $8,134 and the average annual depreciation cost was $813.

*Equipment and machinery costs included the following: tractor, truck, pick-up truck, tiller, heating units, trailer, tools, generator, fuel tanks, gas/electric motors, irrigation equipment and seed spreader.

ii) Operating Costs

The variable cost of operation provided fairly consistent results. Cash costs included all those variable costs associated with the market gardening enterprise. Average yearly operating costs were determined to be $3,576 in 1979.

iii) Summary of Costs

The following table summarizes the cost of production for market gardens in 1979.

TABLE VIII

Annual Market Garden Costs of Production, 1979

	Average Annual	
	Cost per Farm	Cost per Acre
	$	$
Seed	213	87
Fertilizer	120	60
Hired Labour	146	70
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 COST	4,542	1,899

Average acres under cultivation = 2.4

*Cash overhead includes taxes, utilities, insurance, rent, mortgage, licences and commissions and repairs to buildings.

iv) Production

Horticultural production was particularly difficult to determine. Generally, quantities produced were quite small on a commodity basis, and frequently the respondent did not know exactly how much of a commodity had been produced. Usually, complete lists of crops were obtained but seeded acres and production per acre were impossible to obtain.

More often than not, the garden was so small (average 2 - 4 acres) that seeding was measured in footrows and production was similarly measured in footrows. However, very little reliability can be placed on the results of production estimates. Some commodities (e.g. potatoes, turnips and tomatoes) were measured in terms of their poundage; others (e.g. lettuce, cabbage) were measured by the number of head; and still others (e.g. green peppers, radishes, chard and rhubarb) were not capable of being measured consistently from farm to farm. One respondent gave no information on his production other than descriptions of his crop. Other respondents provided some information but they were generally incomplete.* Because of these reporting problems, no effort was made to determine an average cost per pound of produce.

*A complete list of the crops produced by survey respondents follows: potatoes, peas, radish, lettuce (leaf and head), cabbage, broccoli, brussel sprouts, cauliflower, corn, carrots, swiss chard, kohlrabi, spinach, beets, green peppers, tomatoes, cucumbers, beans (wax and string), turnips, onions and rhubarb.

f) MIXED FARMING

Mixed farming was identified as the farm class for over half of the survey's respondents. This meant that income was derived from a number of different activities, with no one providing a majority of income, requiring more time, or costing significantly more than any other activity. This category (mixed farming) was used because of its reflection of the real farming situation in Yukon and because of the relatively similar types of activities being undertaken by farmers.

i) Capital Costs

Being mixed farming operations, a variety of capital facilities are included in this cost component for these farms. All capital facilities, improvements and equipment, indicated as being part of the farming operation, were included in establishing this cost category. Average investment in total is estimated at $39,093. Of this total, buildings accounted for thirty four (34) per cent at an average value of $13,327; land improvement accounted for eight (8) per cent at an average value of $3,163 and equipment investment represented fifty eight (58) per cent at an average value of $22,603.

Using a straight line depreciation for all capital investments, an annual average capital depreciation cost of $2,920. is determined.

ii) Operating Costs

The average annual cash cost of operating a mixed farm was established at $10,991. Naturally these costs varied widely, depending upon the size and mix of enterprises. The range of cash operating costs was from $3,145 to $41,642.

iii) Summary of Costs

Mixed farming cost of production for 1979 are summarized in Table IX.

TABLE IX

Annual Mixed Farming Production Costs, 1979

	Annual Average		
	Cost per Farm	Cost per Acre	Cost per Animal
	$	$	$
Seed	167	.82	na
Fertilizer	319	1.93	na
Feed	4,478	na	316.09
Vet fees and medicines	124	na	8.68
Hired Labour	515	4.25	99.47
Machinery Operating Cost	2,843	12.95	362.93
Cash Overhead*	2,545	14.80	382.65
Total Cash Costs	10,991	34.75	1,169.82
Depreciation			
Building/Improvements	660	3.17	93.06
Machinery/Equipment	2,260	11.52	330.94
Interest on Investment	2,923	4.93	117.57
Operator Labour Value	3,658	6.00	223.33
Total Non-Cash Costs	9,501	25.62	764.90
TOTAL COSTS	20,492	60.37	1,934.72

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

na - not applicable

The mean number of acres of mixed farms was 469 acres. The average cost per acre was determined to be $60.37. Since this figure is somewhat meaningless when dealing with a mixture of production activities, individual values per farm of cost per acre were plotted. This graph (Figure 1) shows that a fairly clear functional relationship exists between the cost per acre and the number of acres on each farm. (The line drawn in the graph is not a mathematical formulation of the relationship but was drawn in freehand).

All mixed farms had animals. The average annual cost per animal (excluding poultry) was $1,935. Once again the relationship between the production cost per animal and the number of animals was plotted. This relationship is shown in Figure II. As expected, the fewer the number of animals, the greater the cost per animal.

These two figures show that the data provided in the survey appears to be consistent with conventional thought. They also give a different perspective to the data from average and total values.

iv) Production

Production by mixed farms varied according to the type of activities being carried out. Table X shows the frequency of production activities.

FIGURE I

Relationship of Total Annual Cost per Acre to Number of Acres, 1979

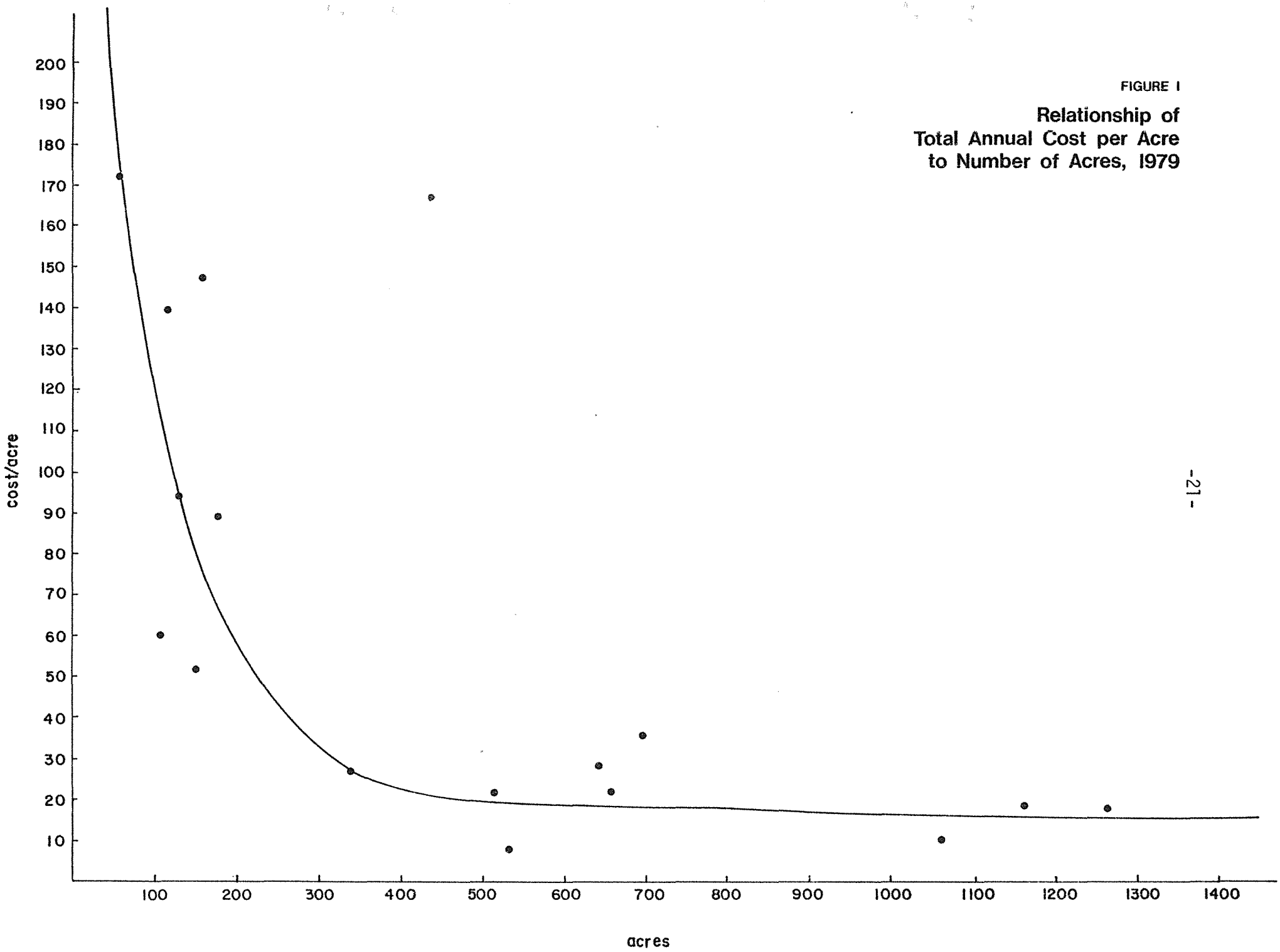


FIGURE II

Relationship of Cost per Animal to Number of Animals for Mixed Farms, 1979

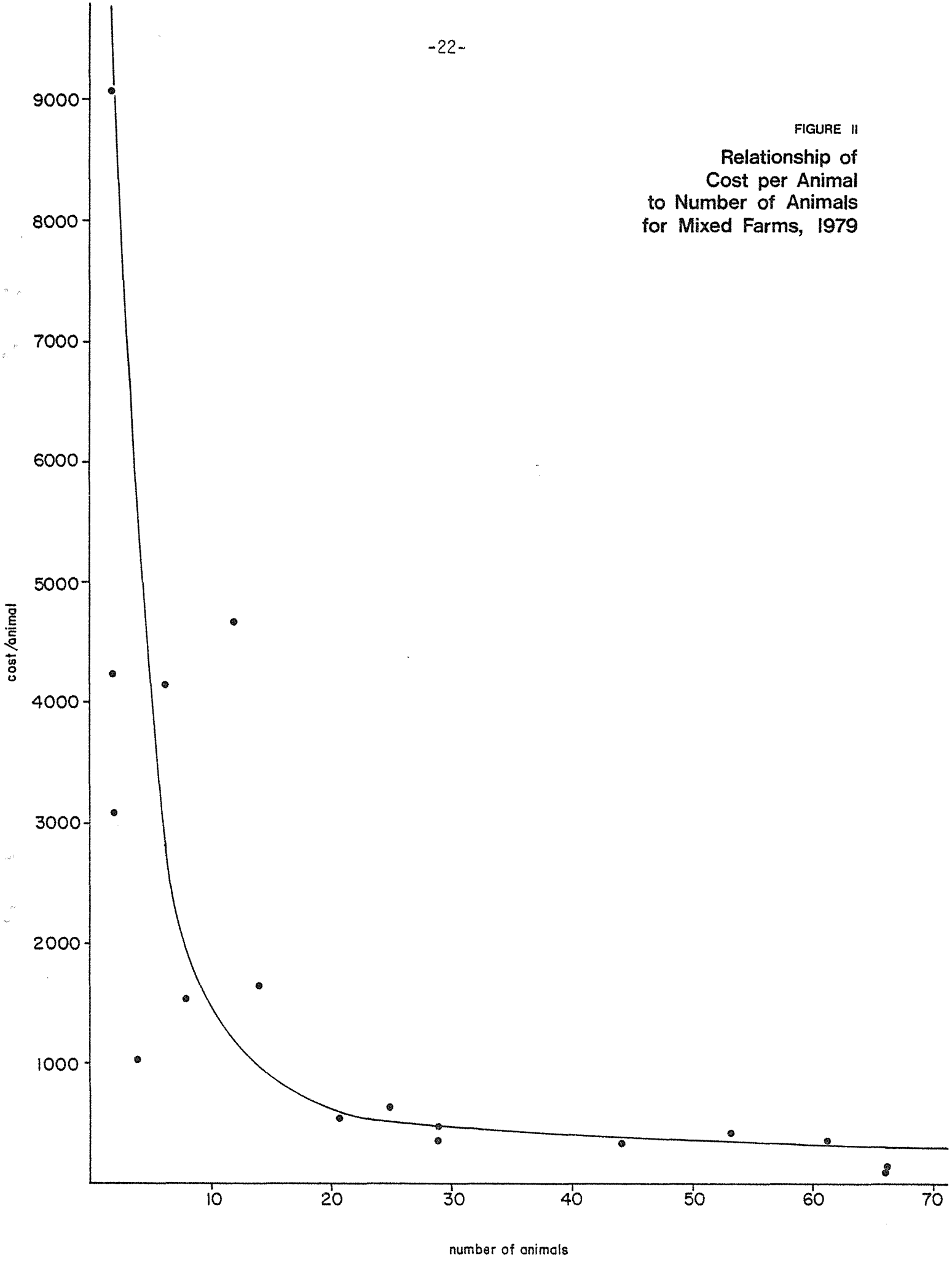


TABLE X

Frequency of Production Activities for Mixed Farms 1979

Production Activity	Number of Farms	Per cent
Grain	2	11
Hay	9	50
Vegetables	6	33
Honey	1	6
Beef	10	56
Dairy	1	6
Hogs	5	28
Goats	3	17
Poultry	12	67
Horses	15	83

Although fifteen (15) mixed farms reported raising horses, it is not known if they were used primarily for pleasure or for work on the farm.

With respect to the most common combination of production activities, clearly poultry, beef and hay production formed the majority of activites being carried out on mixed farms. At the other end of the spectrum is dairy production, with only one farm indicating the production of milk and other dairy products, although the three farms with goats could be included in the dairy section as these animals were being used primarily for milk production.

g) HAY PRODUCTION

Data from ten questionnaires were used to derive the figures presented below on the cost of producing hay. Included in hay production were those who had seeded mixed hay and those who harvested hay (native grasses) from natural meadows.

i) Capital Costs

The average capital investment in buildings, land associated improvements and equipment was established at $19,791. Buildings accounted for forty-three (43) per cent of the total at $8,546. Land associated improvements (primarily fences and irrigation systems) accounted for nine (9) per cent of the total at $1,675. Machinery and equipment costs made up the difference of forty-eight (48) per cent at $9,569. Using straight line depreciation of these investments, the annual capital replacement amounts to $1,366.

ii) Operating Costs

The average annual cash operating cost was $8,387. Values ranged from $1,169 to $14,342. The variable cost of haying operations as a per cent of fixed costs was determined to be approximately fifty-six (56.1) per cent.

iii) Summary of Costs

The cost of producing hay and other relevant figures is presented in Table XI.

TABLE XI

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	

iv) Production

Hay production 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.

In terms of weight this amounts to well over three-quarters of a ton per acre (.85 ton/acre). The range of values in terms of total production was from 63 bales to 5,980 bales. On a per acre basis, the range was from 3 to 60 bales, with 67 per cent of all observations being between 35 and 50 bales per acre. Two farmers had significantly lower production records because of their harvesting native (unseeded) grasses. If only those farms actively cultivating seeded hay are analyzed, the majority (71%) were producing a ton or more per acre.

SUMMARY

In conclusion, the cost of producing agricultural products in Yukon is high. This is generally true on a unit basis and in total. This conclusion does not necessarily mean it is uneconomic to produce agricultural products. Certainly the small size of the industry and its lack of overall development contribute to the high cost situation.

This study, being the first of its kind in Yukon, raises as many questions as it answers. However, the study does provide a new and quantified perspective to Yukon agriculture. It should also be pointed out that the sample population for the study was not large; and that the average costs of production do not reflect the fact that some producers are producing comparatively efficiently. The advantage of the figures presented in this study is that they give an 'order of magnitude' to the cost of producing agricultural commodities in Yukon.

It is appropriate to emphasize that further applied research needs to be carried out on the economics of Yukon agriculture. For example, work needs to be undertaken on the demand for and prices of agricultural

products which are capable of being produced within Yukon, to give a balance to this study on production.

It is hoped that the results of this study will be useful to the development of an agricultural policy for the territory and provide an indication of the costs prospective Yukon farmers can anticipate facing. Likewise it is hoped that this study will provide the basis for further analysis in determining the need for and value of agricultural assistance programs, should they be identified in the agricultural policy. This study is not meant as the justification for such programs.

APPENDIX

CONFIDENTIAL

YUKON AGRICULTURE COST OF PRODUCTION SURVEY

Questionnaire Number: _____ Date: _____

Respondent: At Home _____ Could Not Locate Farm _____
Not at Home _____ Questionnaire Complete _____
Refused _____ Questionnaire Incomplete _____

FARMER CHARACTERISTICS

Name _____ Spouse's Name _____
P.O. Box Address _____
Location _____
Number of Dependents _____ Ages, _____,_____,____,_____,____,_____,_____,__

FARM DESCRIPTION

Farm Class _____ (eg. mixed, beef, grain, etc.)
Major Enterprise _____
Minor Enterprises _____

Acreage	Improved Land		Unimproved Land	
	Acres	Assessed Value	Acres	Assessed Value
Leased (total)				
Grazing				
Agricultural				
Agricultural/Residential				
Titled				

Survey
Is your titled land legally surveyed? Yes ___ No ___
Water Source
Drilled Well ___ Dug Well ___ River ___ Lake ___ Other ___
Who developed the Farm (land)? _____
If previously developed, cost of acquisition $ _____

Business Organization: Partnership _____ Corporation _____
Coop _____
Proprietorship_____

Number of Years at this location _____

Number of years agricultural experience _____
Is Farming full-time _____ Part-time _____
Year-round _____ Seasonal _____
Hobby _____ Occupation _____

Number of hours per week, on average you and family spend on farm work _____

Any other income source Yes ___ No ___
If "yes" what is it? _____
What proportion of your total income does this non-farm occupation contribute?
_____

Is this income required to sustain your agricultural operation. Yes __ No __

Site Description

Include- topography; condition of soil, improved land; distance to road, water, hydro, special features.

INVENTORY OF CAPITAL AND ASSOCIATED COSTS

Assets	Number	Cost to Farmer (within 5 year period)	Replacement Value (assessed)	Year Built	Type of Constr.	Percent Farm Use
BUILDINGS						
House						
Other Housing						
Livestock Housing						
Barn						
Shed						
Tool Shed						
Graineries						
Greenhouses						
Garage						
Other: _____						
_____						
_____						
_____						
LAND ASSOCIATED						
Improvements:						
Fences						
Corrals						
Wells						
Irrigation						
Drainage						
Farm Roads						
Cattle Guards and Shutes						
Other: _____						
_____						
_____						
_____						
_____						
EQUIPMENT						
Tractor						
Cat						
Truck						
Pick-Up Truck						
Auto						
Plow						
Tiller						
Disc/Harrow						
Seeder						
Packer						
Thresher						
Combine						
Harvestor						
Bailer						
Heating Units						
Trailer						
Wagon/Sleigh						
Side Del. Rake						
Workshop Tools						
Generator						
Fuel Tanks						
Fertilizer Spreader						
Mower						
Harness and Saddles						
Power Chain Saws						
Gas Motors						
Electric Motors						
Wind Machine						
Water Pump						
Water Tanks						
Cattle Sprayers						
Weed Sprayers						
Manure Spreader						
Irrigation Equipment						
Post Hole Digger						
Other: _____						
_____						

LAND IMPROVEMENTS (1975 to 1979 inclusive)

Date of Improvements: _____

Description	Clearing	Breaking	Disc & Harrow	Picking Roots Stones	Other(Specify)
Number of Acres					
Cover Description					
Hours farm tractor					
Hours hired tractor/cat					
Hours unpaid Labour					
Hours paid Labour					
Other: _____					
_____					

Estimated Market Value of improved land per acre $ _____

Estimated Market Value of farm land, buildings and equipment $ _____

OPERATIONAL COSTS (Q=Quantity V=Value)

Description	1975		1976		1977		1978		1979		1980	
	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
FEED												
Hay												
Oats												
Barley												
Wheat												
Supplement												
Starter												
Vitamins												
Minerals												
Salt												
Other: _____												
_____												
_____												
OTHER CASH COSTS												
Bedding-Straw												
Vet & Medicine												
Tax												
Utilities												
Insurance												
Rent (Land,Bldgs, Equipment)												
Mortgage(P&I)												
Seed												
Fertilizer												
Chemicals												
Interest on Capital (Op)												
Labour												
Gas,Oil, Grease												
Stove Oil												
Wood												
Licence, Commission												
Repairs to Bldgs												
Repairs to Equip												
Marketing Freight Costs												
Freight Costs												
Other: _____												
_____												
_____												
_____												

CROP YIELDS (January 1st to December 31st, 1979)

CROPS	VARIETY	SEEDED ACRES	YIELD/ACRE	TOTAL PRODUCTION (Ton or BU)	RATE OF SEEDING Lbs/Acre	FETRILIZER APPLICATION Rate/Acre	UTILIZATION OF CROPS
GRAINS							
Wheat							
Barley							
Oats							
Mixed Grain							
Other Grain (specify)							
FORAGES							
Mixed Hay (specify)							
Other Hay (specify)							
PASTURE (expressed in hay equivalents)							
Type (specify)							
Seeded							
Natural							
FRUITS AND VEGETABLES							

CROP YIELDS

CROPS	VARIETY 1975	VARIETY 1976	VARIETY 1977	VARIETY 1978	SEEDED ACRES 1975	SEEDED ACRES 1976	SEEDED ACRES 1977	SEEDED ACRES 1978	YIELD PER ACRE 1975	YIELD PER ACRE 1976	YIELD PER ACRE 1977	YIELD PER ACRE 1978	TOTAL PRODUCTION (tons or bu.) 1975	TOTAL PRODUCTION (tons or bu.) 1976	TOTAL PRODUCTION (tons or bu.) 1977	TOTAL PRODUCTION (tons or bu.) 1978
GRAINS																
Wheat																
Barley																
Oats																
Mixed Grain:																
Other Grain:																
FORAGES																
Mixed Hay																
Other Hay																
PASTURE (Expressed in Hay equivalents)																
Type:																
Seeded																
Natural																
FRUIT AND VEGETABLES																

LIVESTOCK YIELDS (January 1st, to December 31st, 1979)

Livestock	# At Start	# At End	Value At End	# Sold	# Deaths # Injured	Ave. Wt. Of # Sold	Grade (If Applicable)	Breed
Cows								
Bulls								
Steers								
Heifers								
Yearlings								
Calves								
Other Livestock Inventory								
Horses								
Poultry								
Goats								
Hogs								
Dairy Cattle								
Other:_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								

LIVESTOCK YIELDS (January 1st, to December31st, 1978)

Livestock	# At Start	# At End	Value At End	# Sold	# Deaths # Injured	Ave. Wt. Of # Sold	Grade (If Applicable)	Breed
Cows								
Bulls								
Steers								
Heifers								
Yearlings								
Calves								
Other Livestock Inventory								
Horses								
Poultry								
Goats								
Hogs								
Dairy Cattle								
Other:_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								

FARM REVENUES

January 1st, to December 31st, 1979

ITEM/DESCRIPTION	QUANTITY	PRICE/ UNIT	TOTAL	VALUE OF ITEM RECEIVED IN TRADE	TO WHOM WAS ITEM SOLD OR TRADED
GRAIN					
Wheat					
Oats					
Barley					
Mixed Grain					
Other Grain					
Other:					
FORAGE					
Mixed Hay					
Other Hay					
Other:					
FRUITS AND VEGETABLES (specify)					
LIVESTOCK					
Cows					
Bulls					
Hiefers					
Steers					
Yearlings					
Calves					
Horses					
Poultry					
Eggs					
Goats					
Hogs					
Dairy Cattle					
Milk/Cream/Cheese					
Other:					
CONTRACT					
Labour					
Machinery Rentals					
Land Rentals					
Boarding Horses					
Other:					

COMMENTS BY INTERVIEWEE

DRAINAGE:

QUALITY OF LAND:

AGRICULTURAL SUPPLY:

MARKETING:

SERVICES:

Do You have any special problems that you feel the Territorial Government should be attempting to solve?