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ABSTRACT

This report covers a study carried out to examine and catalogue the agriculture industry in terms of size, structure, and future growth patterns in the Fraser Valley College District, and, to some extent, the rest of British Columbia; to provide methodology to facilitate the updating of this information; to examine the agricultural vocational education requirements of the district; and to prepare recommendations on the role of the college in regard to agricultural vocational education. The detailed statistics developed on the agricultural industry are tabulated, and pictorial overlays and maps are used to present overviews of this information. A method of updating and testing program requirements in agricultural vocational educational programs is outlined. recommendations include: that Fraser become the center for agricultural vocational education programs in the province; that courses be modular and primarily designed to train persons for farm labor positions; that "on the farm training" be an important part of the courses, using local farmers' facilities; that the college employ a full-time agricultural vocational education coordinator; that an advisory committee be established to provide community input; and that programs for Native Indians be part of the college's overall program. (Author/NHM)

Investigation of the Agricultural Vocational Education Requirements of the Fraser Valley College District

Prepared for: Fraser Valley College
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October 1975

Abstract

This report covers a study carried out: to examine and catalogue the agriculture industry in terms of size, structure and future growth patterns in the Fraser Valley College District, and to some extent, the rest of the province; to provide methodology to facilitate the updating of this information; to examine the agricultural vocational education requirements of the Fraser Valley College District; and to prepare recommendations on the role of the College in regards to agricultural vocational education.

The detailed statistics developed on the agriculture industry are included in the report and pictorial overlays and maps are used to present overviews of this information. This information package will provide a basis for future decisions on the type of agricultural vocational education programs required in the Fraser Valley College District with some reference to the province. A method of updating and testing program requirements in agricultural vocational education programs is outlined.

The recommendations are detailed in the report and include: that Fraser Valley College become the centre for agricultural vocational education with specific regional needs met through courses taught at regional centres in other areas of the province, with the College retaining responsibility for coordination; that courses be modular and be primarily designed to train persons for farm labour positions; that "on farm training" be an important part of the courses using local farmers' facilities, rather than an institutional farm; that the College employ a full time agricultural vocational education coordinator; that an advisory committee be established to provide community input to agricultural vocational education programs; and, that programs for Native Indian People be part of the College's overall program.

Summary Recommendations

Recommendation 1

That Fraser Valley College become the centre for agricultural vocational education in British Columbia, and that:

a) where feasible, specific courses be taught at other locations under the auspices of the local regional college to meet regional needs and that these regional courses be coordinated through the Fraser Valley Regional College.

Recommendation 2

That the agricultural vocational education offered by this centre be primarily designed to train personnel for the farm labourer or farm foreman type of position. Recommended features of this education program are:

a) that courses on farm management be made available as needs arise, but that these be limited to In-Service courses,

b) that courses be modular and self-contained to provide levels of training that are not dependent upon completion of an entire program,

c) that these modular courses be structured so that they can develop into a full pre-service program,

d) that a system of credits be developed and assigned to the various courses that would allow accreditation and the awarding of a certificate to a person completing a number of the courses.

Recommendation 3

That the Fraser Valley College does not establish an "institutional type farm" to assist in the agricultural vocational education program, but that arrangements be made with existing farms to provide "on farm training".

Recommendation 4

That the Fraser Valley College employ a full time agricultural vocational coordinator whose responsibilities will include:

a) production of agricultural vocational education courses and programs in response to the needs within the area,

PAGE ~~(S)~~ iv WAS ~~(WERE)~~ MISSING ~~(REMOVED)~~ FROM THIS DOCUMENT PRIOR TO ITS BEING SUBMITTED TO THE ERIC DOCUMENT REPRODUCTION SERVICE.

SEE PAGES 85-88 FOR RECOMMENDATIONS 5 THROUGH 9.

Summary Recommendations (cont.)

Recommendation 10

That Fraser Valley College carry out procedures to test the validity of agricultural vocational education courses that are planned or requested.

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Acknowledgements

The writers of this report wish to acknowledge and thank members of the agricultural community throughout British Columbia, without whose assistance it would not have been possible to prepare this report. In addition they wish to acknowledge, with thanks, the members of the advisory committee who provided freely of their time and energies to assist with this report. The members of the advisory committee were as follows:

Mr. Ian Carne	Director of General Services, Department of Agriculture
Mr. R. Hyde	Department Head, Biological Sciences, British Columbia Institute of Technology
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Dr. A. Renney	Professor, Department of Plant Science, Faculty of Agriculture, University of British Columbia
Mr. R. Stocks	Manager, British Columbia Federation of Agriculture
Dr. L. J. Blake	Principal, Fraser Valley College

I Introduction

The agricultural industry being diverse and complex requires education of all types: apprenticeship, vocational, technical and university. This report is concerned with the investigation of the vocational educational needs of the agricultural industry within the Fraser Valley College District boundaries specifically and throughout the Province of British Columbia in general.

A few background comments pertaining to definitions of the major segments of the agricultural industry and to the relative size of this industry compared to other industries within the province would seem in order. In 1966[1], 2.3 percent of the total land acreage in British Columbia was under cultivation and agriculture ranked fourth (13.8 percent) out of five primary industry categories with respect to the relative value added. On the other hand, consumers' direct approximately 20 percent of their expenditures towards food purchases (164 Vancouver consumers spent 24% towards food purchases)[1]. One view suggests agriculture is a small factor in the province while the other view suggests agriculture is the largest factor. Primary agriculture is the farm production stage with no processing; secondary agriculture or agribusiness and trade is the processing or servicing of product (processing, servicing, marketing); and tertiary agriculture is the work or product created in servicing primary and secondary agriculture, when the goods in process cannot be identified as agricultural (smelting, oil, etc.). For our purposes we will be dealing with primary agriculture and the processing and service industry segments of secondary agriculture (excluding the marketing segment).

About 50 percent of the total agriculture in the Province of British Columbia is located in the Fraser Valley and a substantial portion of this agriculture is found within the boundaries of the Fraser Valley College region. The bound-

[1]Winter, G. R. 1971, The Significance of Agriculture to the Economy of B. C.

aries of the region served by this regional college are defined as the sum of five school districts and are illustrated in the map of the Upper Fraser Valley (Figure 5, Page 34). The western boundary is the Matsqui-Langley border, and the eastern boundary is Boston Bar.

The Fraser Valley is locked in by physical features: mountains to the north and east, the international border to the south and the coastline to the west. As the demand for non agricultural use of land increases, agriculture as we know it today in the Fraser Valley will change. The land area is expected to diminish a certain amount and the intensity of the production units should increase. The population projection for the sum of the five shool districts making up the college area is presented in Table 1. The results shown indicate a population growth of 45% from 1971 to 1996.

The objective of this study was to conduct a preliminary assessment of the vocational agricultural needs of the agricultural industry - specifically within the Fraser Valley College region and in general throughout the Province of British Columbia. A further objective was to supply sufficient base data information and methodology to allow future updating assessments to be made. Following is an outline of the methodology and procedure used in conducting this study.

1. Define and map boundaries to be served intensively by Fraser Valley College,
2. Catalogue present situation within the Fraser Valley College District giving qualitative description and quantitative analysis,
   a) primary agriculture (production farms)
   b) secondary agriculture
      i) processing plants
      ii) service industries to agriculture (i.e. equipment suppliers, fertilizer suppliers, etc.)

Table 1

Population Projections[1]- Fraser Valley College District[2]

Age Range	Historical Years			Forecast Years				
	1961	1966	1971	1976	1978	1980	1986	1996
0-24	33236	35882	42862	43399	41008	44742	45925	49978
25-49	20468	20597	26261	28913	58548	45783	42784	59885
50 +	15374	17086	32138	25822	29754	29610	31978	36863
Total	69078	73565	101261	98134	129310	120135	120687	146726

[1]Population Projections are from the reference: British Columbia Population Projections 1974-1996, prepared by British Columbia Research Council, 1974.

[2]The Fraser Valley College District comprises of five school districts: #32 Hope, #33 Chilliwack, #34 Abbotsford, #75 Mission, and #76 Agassiz-Harrison.

c) special interest agriculture - special interests of population in terms of hobby farms, backyard gardens, pleasure horses, agricultural recreation (i.e. fish farming), etc.

3. Draft brief discussion of the pressures that may develop from areas outside the Fraser Valley College boundaries for services provided by college.
   i) general population close to college (i.e. Lower Fraser Valley)
   ii) specialized agricultural segments throughout province (outside the Lower Fraser Valley).
4. Assemble comments from the various agricultural segments (section 2a) and 2b) above) with respect to vocational educational needs of that segment both in-service and pre-service.
5. Prepare a brief scenario of future growth patterns for the agricultural segments that are outlined in section 2a) and 2b) above.
6. Catalogue existing educational programs or educational resources that are applicable to Fraser Valley College. Included in this will be:
   a) Formal programs, i.e. B.C.I.T., U.B.C., Public School, Vocational School, Regional Colleges
   b) Extension programs, i.e. B. C. Department of Agriculture, Canada Agriculture, B. C. Hydro, U. B. C., etc.
   c) other applicable programs, potential educational resources and vocational programs in existence in other areas, i.e. United States.
7. Catalogue native populations within Fraser Valley College boundaries and discuss proposed agricultural developments.
8. Analyze the vocational educational needs and resources for the agricultural industry; taking into account individual industry segment needs

and the existing agricultural vocational education efforts and resources available at present.

9. Draft general recommendations -
   a) reflections on concepts of agricultural vocational education (phase programs).
   b) general description of types of courses and programs necessary, locations for implementation of programs, etc.,
   c) determine need for a continuing part or full-time field specialist in Agricultural education for Native Indian people. Suggest duties and responsibilities of this position.
   d) suggest permanent advisory committee representation by group represented.
   e) outline plan which is to be used to reassess the situation at any specific time in the future including contacts in regards to inventory and resources.

II Inventory of Agricultural Sectors

A. Specialized Agricultural Segments Throughout the Province

This section of the report provides a cursory overview of primary agriculture throughout the Province of British Columbia. A base mapping and a set of overlays are presented to illustrate this overview. The base map shown in Figure 1 has the province divided into seven areas that are each made up of several census districts. The use of such boundaries has enabled us to assemble overview statistics on various segments of primary agriculture. It should be noted that the division of Group Area II is the Lower Mainland and this area encompasses the Fraser Valley College District along with the remainder of the Lower Fraser Valley. As much as possible the major grouping areas were arrived at with a view to concentrating on the specialized agricultural segments throughout the province. For example, the major cow-calf beef industry is located in the central interior, tree fruits are concentrated in the Okanagan area, and the major grain producing area of the province is the Peace River.

The ALR's (Agricultural Land Reserves) that have been established throughout the province provide a basis for showing the extent of agriculture production and potential in the various regions of the province. The ALR's are shown in green on Figure 1.

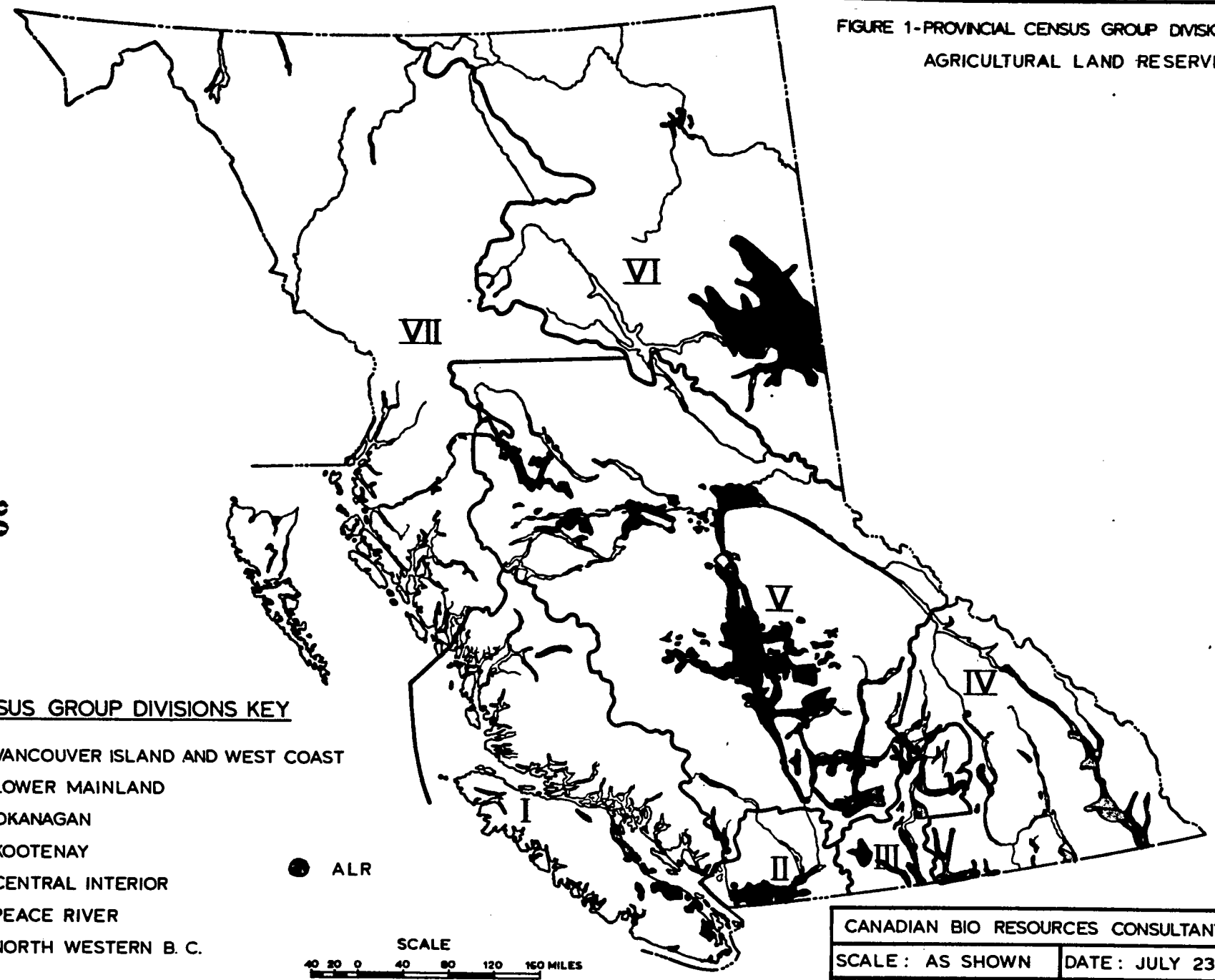
The livestock industry of the province is illustrated in overlay Figure 3, where dairy, beef cattle, pigs and poultry are delineated. The statistics are presented in terms of animal numbers and are set out in a bar graph form. It can be seen that dairy cattle are predominantly found in the Lower Mainland, numbering 70,000 head. Other areas supporting a significant dairy cattle population are Vancouver Island and West Coast, 11,000 head; the Okanagan, 7,000; the Kootenay area, 7,000; and the Central Interior, 6,000.

There are large numbers of beef animals located through-

out the province, the primary area being the Central Interior with 252,000 head followed by the Lower Mainland at 64,000 head. It should be noted that the Lower Mainland supports much of the beef finishing industry which is located west of the Fraser Valley College District. Relative to beef numbers, the Kootenay area is next with 60,000 followed by the Okanagan with 50,000; and the Peace River and the Vancouver Island areas having 27,000 and 16,000 head respectively. A review of the graphs for poultry reveals that the bulk of the poultry industry is located in the Lower Mainland with 7,200,000 birds. Second place is about 10% of this amount located on Vancouver Island and West Coast division with 706,000 birds. In summary, relative to livestock numbers, it seems worthwhile to compare the percentage of livestock found in the Lower Mainland as compared to the total province. Table No. 2 sets out in tabular form the same information presented on these overlays. The data was extracted from the 1971 Canada census. Working with the numbers from this table for the Lower Mainland area it is seen that for poultry 83% of the province's poultry is found in the Lower Mainland, 68% of the dairy of the province is found in the Lower Mainland and 14% of the beef population is found in the Lower Mainland.

Crop acreages for the province are illustrated in Figure 4. The crop types considered here are vegetables, fruit, grain and forage. The bulk of the vegetable acreage is found in the Lower Mainland, (18,800 acres). The fruit is concentrated in the Okanagan census group division where there are 32,000 acres under cultivation. This area is followed in size by the Lower Mainland with 7,300 acres. The grain acreage concentration is found in the Peace River, and the forage acreage concentration is found in the Central Interior. It is also noted that the secondary forage area is the Peace River. Relative sizes of these acreages is given in Table 2, and an analysis of this Table shows the Lower Mainland with 69% of the province's vegetable production, the Okanagan with 75% of the fruit acreage, the Peace River supporting 87% of the province's

FIGURE 1-PROVINCIAL CENSUS GROUP DIVISIONS
AGRICULTURAL LAND RESERVES



CENSUS GROUP DIVISIONS KEY

I – VANCOUVER ISLAND AND WEST COAST
II – LOWER MAINLAND
III – OKANAGAN
IV – KOOTENAY
V – CENTRAL INTERIOR
VI – PEACE RIVER
VII – NORTH WESTERN B. C.

ALR

SCALE
40 20 0 40 80 120 160 MILES

CANADIAN BIO RESOURCES CONSULTANTS LTD.		
SCALE : AS SHOWN	DATE : JULY 23, 1975	
DRAWN : K. H. HUI	CHKD : H.T.K.	DWG. No. A-168

FIGURE 1-PROVINCIAL CENSUS GROUP DIVISIONS
AGRICULTURAL LAND RESERVES

FIGURE 3-FARM ANIMAL POPULATIONS

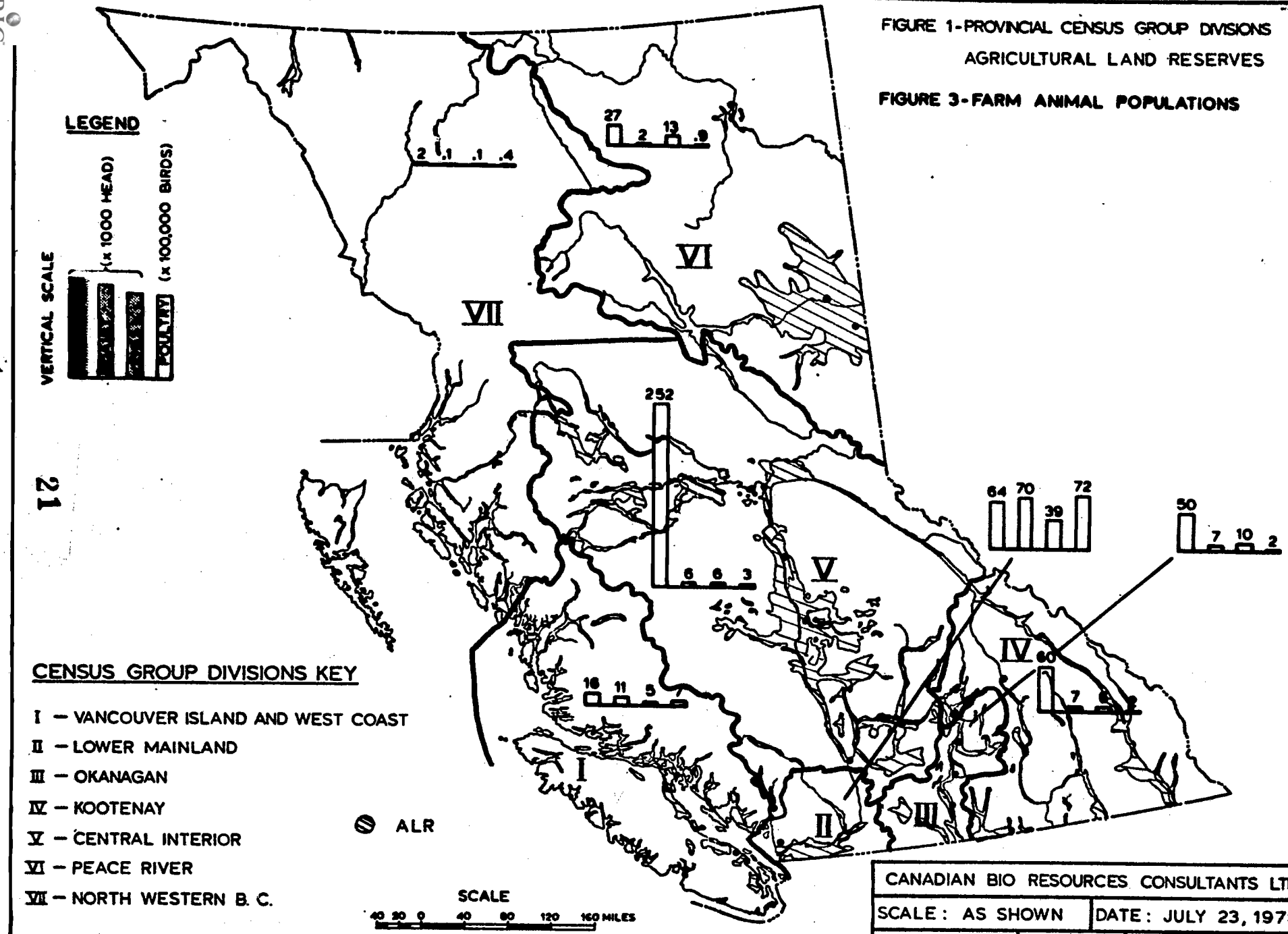


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FIGURE 1-PROVINCIAL CENSUS GROUP DIVISIONS
AGRICULTURAL LAND RESERVES

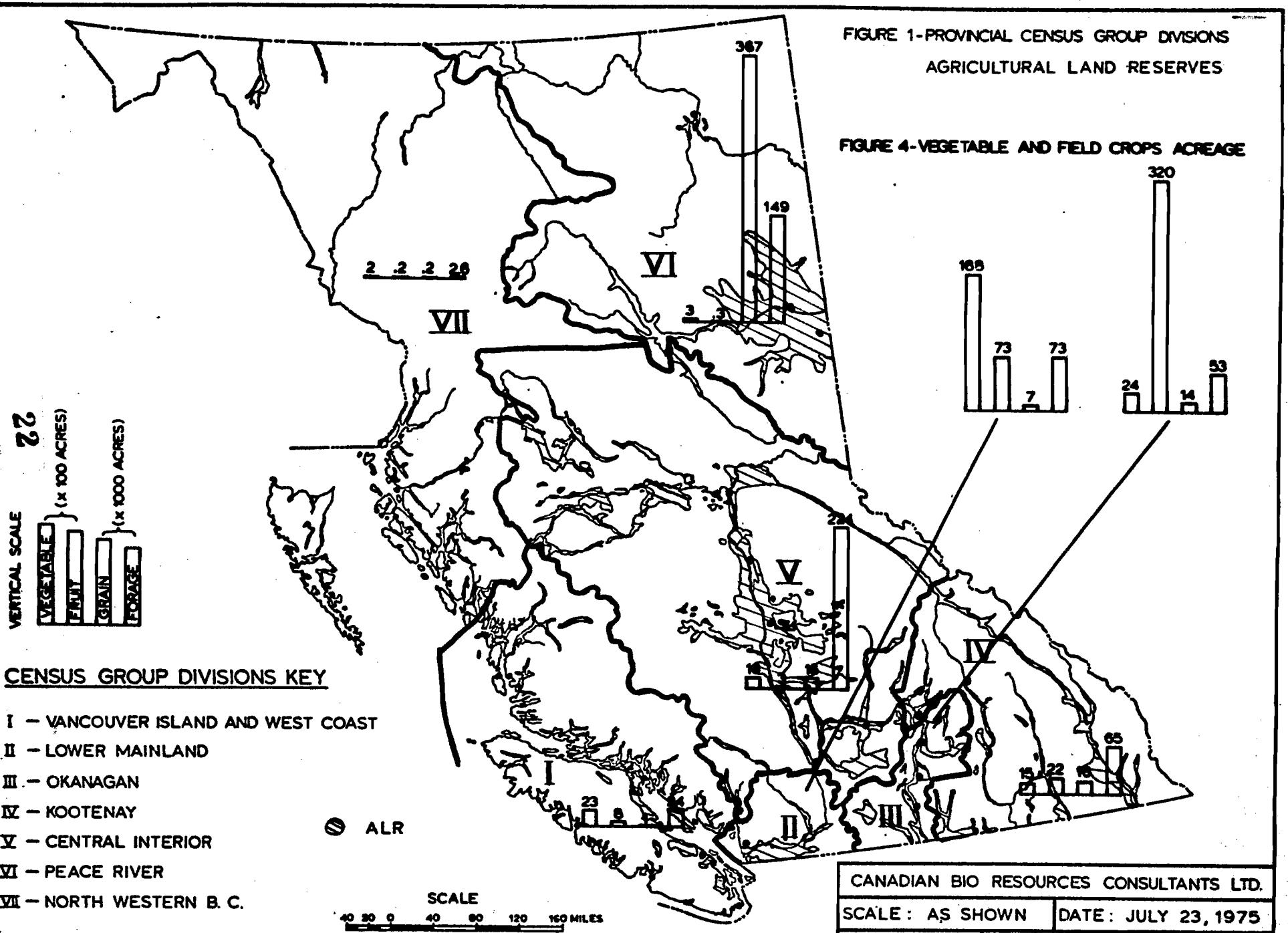

FIGURE 4-VEGETABLE AND FIELD CROPS ACREAGE

CANADIAN BIO RESOURCES CONSULTANTS LTD.		
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Table 2

Farm Animal Populations and Crop Acreages

Province of British Columbia

Area	Livestock and Poultry Population			
	Beef Cattle	Dairy Cattle	Pigs	Hens, Chickens & Turkeys
Vancouver Island & West Coast	15,722	11,085	5,047	705,815
Lower Mainland	63,724	70,460	38,957	7,161,914
Okanagan	49,897	6,650	9,765	202,430
Kootenays	59,661	6,864	5,635	199,648
Central Interior	251,654	5,941	6,351	260,029
Peace River	27,014	2,060	12,759	93,422
North Western B. C.	2,344	95	107	43,388
Province Total	470,016	103,155	78,621	8,666,646
	Crop Acreage			
	Vegetables (including potatoes)	Fruit	Grain	Forage
Vancouver Island & West Coast	2,307	811	1,062	23,666
Lower Mainland	18,752	7,258	6,617	72,748
Okanagan	2,443	32,099	13,641	52,881
Kootenays	1,454	2,171	18,033	65,157
Central Interior	1,597	320	15,689	224,072
Peace River	291	31	367,370	149,109
Northwestern B. C.	154	15	166	2,619
Province Total	26,998	42,705	422,578	590,252

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

grain acreage, and the Central Interior supporting 38% of the province's forage acreage.

B. Agricultural Segments within the Fraser Valley College District.

For purposes of this inventory the agriculture industry of the Fraser Valley College District has been divided into three groupings: (1) Primary Agriculture, (2) Secondary Agriculture (excluding marketing), and (3) Special Interest Agriculture.

1. Primary Agriculture

a) General Overview Statistics

Various statistical breakdowns of production agriculture are provided in the Statistics Canada 1971 Census of Canada. The boundaries of the census districts however, do not correspond exactly with the Fraser Valley College District boundaries. The census districts which have been combined into a district that is comparable to the Fraser Valley College District are the Central Fraser Valley, Fraser Cheam and Dewdney-Alouette districts. This "comparison" census district is slightly larger than the Fraser Valley College District with the main enlargement which affects the agricultural inventory being on the western boundary. In the census district, Langley municipality and Pitt Meadows municipality are included, whereas they are not in the Fraser Valley College District.

A series of statistics has been compiled for this "comparison" census district and these statistics are set out in Tables 3a to 3f. Table 3a shows the number of farms by size and it is evident that, for the smaller farms ranging in size from 3 acres to 129 acres, the census district total makes up about one third of the farms of this size in the total province. On the other hand, it is seen that very few of the larger farm sizes are found in this area. This would suggest that one of two things may be taking place: firstly, farms are more intensified, or there is

a higher degree of intensified farming in the Fraser Valley; and secondly, hobby farms are developing. Differentiation between the two classes becomes more evident when studying later statistics dealing with the economics of these primary units.

The number of farms are shown by product type in Table 3b, and only those farms with sales over $2,500.00 are considered. This shows that approximately 65% of the province's dairy farms are found in this census district area, as are 61% of the province's poultry farms. Fruit and vegetable farms in this area make up only 15% of the province's total, field crop farms 5% and mixed crop farms about 4%. The latter figures are understandable when considering that they are associated with larger acreages which are not prevalent in this census district.

Statistics on the field crops grown in this area that make up this 5% are shown in Table 3c. This table takes into account the acreage planted to the various grains. It is seen that a very minimal percentage of the provincial total for conventional grain crops (e.g. wheat, oats and barley) is grown in this census district whereas a larger percentage for crops such as rye, field peas or field beans is found in this area. For these latter crops the acreage per farm is low compared to other parts of the province: for example, with rye 14% of the farms in the province are found in this area, whereas only 6% of the acreage is found here.

Statistical details regarding livestock are presented in Table 3d. The number of dairy cows found in this census district is 59% of the provincial total and corresponds very closely to the number of dairy farms in the area. Hens and chickens in this area account for 71% of the provincial total, and hogs for 37% with lesser amounts of beef cattle, sheep, horses and goats found here. Half the province's turkeys originate in this area and 57% of the mink

Table 3a

Number of Farms by Size

Fraser Valley College District

Size of Farms Acres	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison"[1] District Total	Province Total	District/Province %
Under 3	101	89	31	221	1,030	21.5
3 - 9	620	311	234	1,165	3,470	33.6
10 - 69	1,542	600	360	2,502	6,765	37.0
70 - 129	241	176	94	511	1,551	32.9
130 - 179	69	38	25	132	1,206	10.9
180 - 239	25	14	9	48	429	1.12
240 - 399	12	12	15	39	1,100	3.5
400 - 559	3	2	2	7	685	1.0
560 - 759	2	2	-	4	573	0.7
760 - 1119	1	1	1	3	607	0.5
1120 - 1599	-	2	-	2	390	0.5
Over 1600	1	1	2	4	594	0.7
Total	2,617	1,248	773	4,638	18,400	25.2

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

[1]"Comparison" District is made up of the Central Fraser Valley, Fraser-Cheam, and Dewdney-Alouette Census Districts, and is somewhat larger than the Fraser Valley College District (see text for details).

Table 3b

Number of Farms with Sales over $2,500 by Product Type

Fraser Valley College District

Product Type	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison" District Total	Province Total	District / Province %
Dairy	485	420	150	1,055	1,633	64.6
Other Livestock	244	97	66	407	2,501	16.3
Poultry	312	54	28	394	644	61.2
Field Crops	10	8	3	21	387	5.4
Fruits and Vegetables	200	88	17	305	1,948	15.7
Mixed	5	3	-	8	223	3.6
Other	118	22	54	194	1,289	15.1
Total	1,374	692	318	2,384	8,625	27.6

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Table 3c

Number of Farms and Total Acreage By Field Crop Type
Fraser Valley College District

Crop Type		Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison" District Total	Province Total	District / Province %
Wheat	Farms	3	10	2	15	1,045	1.4
	Acres	242	271	30	543	109,312	0.5
Oats	Farms	30	25	9	64	1,617	4.0
	Acres	531	268	68	867	89,553	1.0
Barley	Farms	3	2	1	6	1,596	0.4
	Acres	164	103	3	270	195,701	0.1
Mixed Grains	Farms	7	5	1	13	199	6.5
	Acres	231	22	2	255	7,002	3.6
Rye	Farms	5	6	-	11	77	14.3
	Acres	22	61	-	83	1,419	5.8
Field Peas	Farms	2	1	1	4	55	7.3
	Acres	25	26	1	52	2,435	2.1
Field Beans	Farms	-	-	1	1	12	8.3
	Acres	-	-	1	1	180	0.6

Source: 1971 Census of Canada, Agriculture, British Columbia, Statistics Canada

Table 3d

Numbers of Livestock and Poultry

Fraser Valley College District

Animal Type	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison" District Total	Province Total	District / Province %
Beef Cattle	25,154	11,288	8,565	43,007	470,016	9.2
Dairy Cattle	29,359	21,542	9,513	60,414	103,155	58.6
Pigs	20,684	5,080	3,448	29,212	78,621	37.2
Sheep	4,098	1,026	771	5,895	53,112	11.1
Horses	2,808	877	899	4,584	32,461	14.1
Goats	225	37	87	349	2,068	16.9
Hens & Chickens	4,948,905	481,296	152,477	5,582,678	7,861,488	71.0
Turkeys	361,411	2	70,402	431,815	805,158	53.6
Geese	954	476	632	2,062	9,017	22.9
Ducks	1,977	492	1,850	4,319	19,209	22.5
Mink	92,295	19,731	28,077	140,103	245,669	57.0
Rabbits	4,040	1,453	3,703	9,196	35,381	26.0

Source: 1971 Census of Canada, Agriculture, British Columbia, Statistics Canada

Table 3e

Number of Farm Operators[1] by Age & Farm Population

Fraser Valley College District

	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison" District Total	Province Total	District / Province %
Under 25 Years	27	12	9	48	209	23.0
25 - 34 Years	350	156	87	593	2,041	29.1
35 - 44 Years	726	334	189	1,249	4,705	26.5
45 - 54 Years	703	360	233	1,296	5,317	24.4
55 - 59 Years	313	140	87	540	2,225	24.3
60 - 64 Years	238	127	66	431	1,716	25.1
65 - 69 Years	138	69	57	264	1,176	22.4
70 Years	122	50	45	217	1,011	21.5
Totals	2,617	1,248	773	4,638	18,400	25.2
Total Farm Population	11,249	5,458	3,336	20,043	79,353	25.6
Total Population	58,085	46,097	40,096	144,278	2,184,621	6.6

[1] One operator per census-farm

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Table 3f

Number of Farms by Value of Product Sold
Fraser Valley College District

Value	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	"Comparison" District Total	Province Total	District / Province %
Over $10,000	946	507	216	1,669	4,443	37.6
$5,000-$9,999	199	64	48	311	2,015	15.4
$2,500-$4,999	229	121	54	404	2,167	18.6
Under $2,500	1,241	555	452	2,248	9,739	23.1
Total	2,615	1,247	770	4,632	18,364	25.2

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

are raised here. One item to note is that 26% of the rabbits raised in the province originate in this district and this may be one area of the livestock industry which may grow in the future and is readily adaptable to the smaller intensified farm units.

The information presented in Tables 3e and3f provides a different viewing point to primary agriculture namely, statistics on the age of farm operators, farm population, and value of product sold. Table 3e shows that approximately one quarter of the province's operators for all ages are found in the Fraser Valley census district, and of the 18,400 operators in the province 38% are under 45 years of age and the remainder are over 45 years of age; this ration being similar for the local census district. The biggest concentration of operators is between 35 and 54 years of age. For value of product sold the province has 18,364 farms on record with 47% of these farms having a value of product sold in excess of $2,500.00; while the remainder is under $2,500.00. Of the highest category, which is over $10,000.00, 37.5% of the province's total is found in the local census district. It is further seen that the number of farms in this census district, which has value of product sold under $2,500.00 approximates the number of farms aboye $2,500.00, mainly 2,248 versus 2,384. This points out that in this census area we have both a large percentage of hobby oriented farms or non-intensive farms and a large number of highly intensive farms as shown by the figure of 1,669 farms with value of product sold over the $10,000.00 value.

In addition to the information shown in Tables 3a - 3f, a similar set of tables has been prepared showing statistics for the Fraser Valley College District, the Lower Mainland Region and the Province. These tables are presented in the Appendix (Appendix A1 tp A6).

Statistics on the acreages located within ALR (Agricultural Land Reserve), as provided by the British Columbia Land Commission, are shown in Table 4. These acreages are

broken down on the same census boundary basis as was used for the previous primary agriculture statistics. From Table 4 , it is seen that in excess of 75% of the total acreage within the Central Fraser Valley district is retained in the ALR as compared to 8.2% in the Dewdney-Alouette district and 3.3% for the Fraser Cheam district. The total ALR land in this "comparison" census district is 286,200 acres which amounts to 2.5% of the total ALR for the province or .12% of the total acreage of the province. From the previous discussion of primary agriculture statistics and these ALR acreages, it is evident that the agricultural industry in the local census district is highly intensified.

b) Detailed Statistics for Primary Agriculture

For this study an attempt was made to obtain, from various sources, listings of the different farms in the Fraser Valley College District by product type and size. Much of this type of information is compiled and updated from time to time by the various primary agriculture commodity associations. This information is included in both tabular form and mapping overlay form. The Tables containing this information are numbers 5a to 5h inclusive, and are located at the end of this section. They include information on the number of producers and production for the following commodities: Dairy, Eggs, Hogs, Small Fruits, Beekeeping, Broilers, Roaster and Cornish Hens, and Vegetables. This information is presented in as much detail as practical and was then used to produce map overlays that display this information using bar graphs. The Fraser Valley College District is shown on a base map, Figure 5, at the end of this section. District is divided into four areas as shown on overlay Figure 7: Area I is Abbotsford, including Sumas and Matsqui; Area II includes Mission, Dewdney, and Nicomen Island; Area III is Chilliwack, Yarrow, Sardis, and Cultus Lake; and Area IV is Agassiz, including all lands east to Boston Bar.

The first overlay, Figure 6, outlines the school

Table 4

Agricultural Land Reserve (ALR) Acreage
Fraser Valley College District

Area	ALR Acreage	Total Acreage	ALR Acreage / Total Acreage %
Central Fraser Valley	136,700	180,672	75.6
Fraser - Cheam	90,800	2,716,096	3.3
Dewdney - Alouette	58,700	713,280	8.2
Total "Comparison" District	286,200	3,610,048	7.9
Total Province	11,557,300	225,473,920	5.1

Source: British Columbia Land Commission

Table 5a

Number of Dairy Farms[1] (1974)

Fraser Valley College District

Area	Size of Dairy Farm - No. of Cows							Total
	Under 25	25-50	51-75	76-100	101-125	126-150	Over 150	
Dewdney, Mission, Nicomen Is.	10	5	18	3	1	1	1	39
Matsqui	19	62	27	6	1	1	-	116
Sumas	7	39	29	17	11	-	1	104
Yarrow	9	29	5	1	-	-	1	45
Chilliwack	32	180	51	12	1	5	1	282
Agassiz	2	44	15	2	2	-	-	65
Total FVC District	79	359	145	41	16	7	4	651
Total Province[2]	142	619	275	79	29	11	10	1165

[1]Source: Dairy Education Committee

[2]not including Vancouver Island

Table 5b

Number of Egg Producers

Fraser Valley College District

Area	Size of Production Unit - No. of Birds		Total
	Under 500	Over 500	
Dewdney, Mission, Nicomen Island	1	3	4
Abbotsford, Matsqui, Sumas	5	110	115
Yarrow	1	4	5
Chilliwack and Sardis	1	14	15
Agassiz, Rosedale, Hope, Boston Bar	1	4	5
F.V.C. District Total	9	135	144

Source: Material provided by Farm Labour Pool

Table 5c

Number of Hog Farms

Fraser Valley College District

Area	Size of Farm - Hogs produced Annually				Total
	0-500	501-1000	1001-2000	Over 2000	
Mission	1	1	2	-	4
Matsqui	-	1	-	-	1
Yarrow	-	1	1	-	2
Chilliwack	2	3	1	1	7
Agassiz	1	-	-	-	1
F.V.C. District Total	4	6	4	1	15

Source: B. C. Swine Breeders' Association

Table 5d

Number of Growers - Small Fruits

Fraser Valley College District

Area	Size of Orchard - No. of Acres				Total
	5 and less	6 - 10	11 - 20	20 and over	
Dewdney, Mission Nicomen Island	2	-	-	-	2
Matsqui	65	44	23	20	152
Sumas	13	9	3	1	26
Chilliwack	35	7	2	6	50
Yarrow	37	4	2	-	43
Sardis	16	3	1	-	20
Agassiz and Upper Fraser Valley	8	1	-	-	9
F.V.C. District Total	176	68	31	27	302

Source: Material provided by Farm Labour Pool

Table 5e

Number of Beekeepers

Fraser Valley College District

Area	Size of Production Unit - No. of Hives				Total
	1 - 2	3 - 10	11 - 50	Over 50	
Dewdney, Mission Nicomen Island	26	10	3	-	39
Matsqui, Sumas	27	19	4	1	51
Yarrow	6	4	1	1	12
Chilliwack	16	16	9	1	42
Agassiz	12	2	2	-	16
Total F.V.C. District	87	51	19	3	160

Source: Material provided by B. C. Department of Agriculture

Table 5f

Number of Broiler Producers
Fraser Valley College District

Area	Size of Operation - Birds per Quota			Total
	under 15,000	15,001-40,000	Over 40,000	
Dewdney, Mission Nicomen Island	-	1	-	1
Abbotsford, Matsqui, Sumas	14	22	5	41
Chilliwack, Sardis and Yarrow	3	7	-	10
Agassiz	-	-	-	-
Fraser Valley College District Total	17	30	5	52

Source: B. C. Broiler Marketing Board.

Table 5g

Number of Roaster and Cornish Hen Producers
Fraser Valley College District

Area	Size of Operation - Birds per Quota and Permit		Total
	4,000	8,000	
Abbotsford	9	11	20
Mission	1	1	2
Chilliwack	2	6	8
Agassiz	-	-	-
F.V.C. District Total	12	18	30

Source: B. C. Broiler Marketing Board

Table 5h

Number of Vegetable Growers
Fraser Valley College District

Area	Size of Farm - No. of Acres					Total
	5 or less	6-20	21-50	51-100	over 100	
Abbotsford-Sumas-Matsqui	6	5	13	5	4	33
Chwk-Yarrow-Sardis	2	3	8	3	7	23
Agassiz - Hope	-	-	-	-	1	1
Mission - Hatzic	2	1	-	-	-	3
FVC District Total	10	9	21	8	12	60

Source: B. C. Coast Vegetable Marketing Board.

LEGEND FOR FIGURE 7

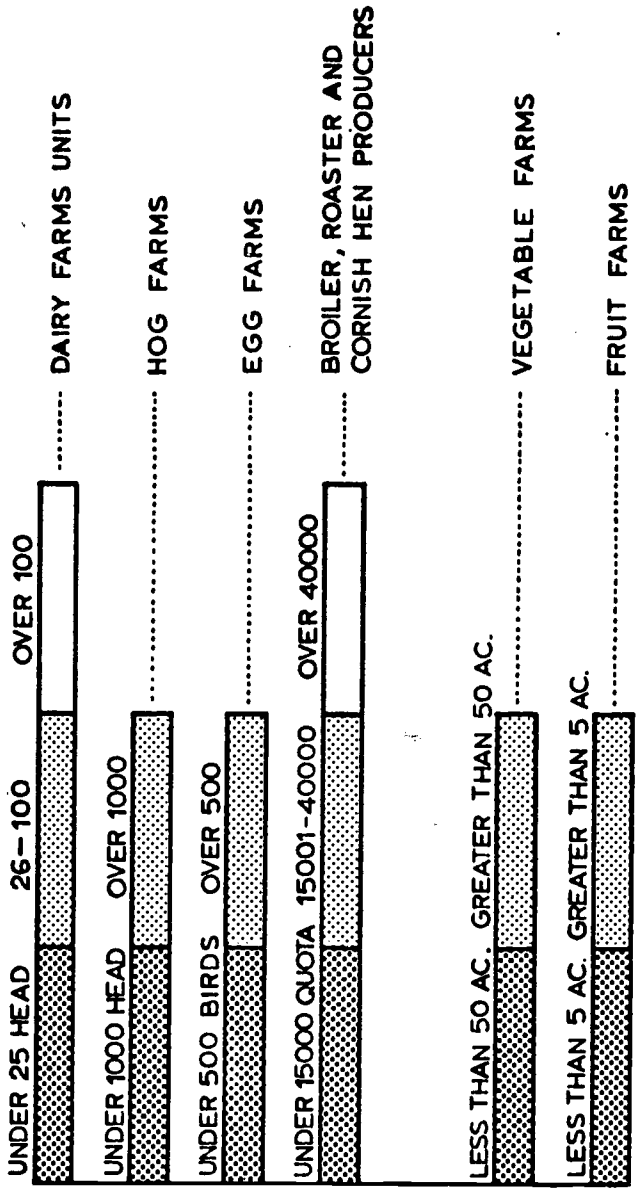
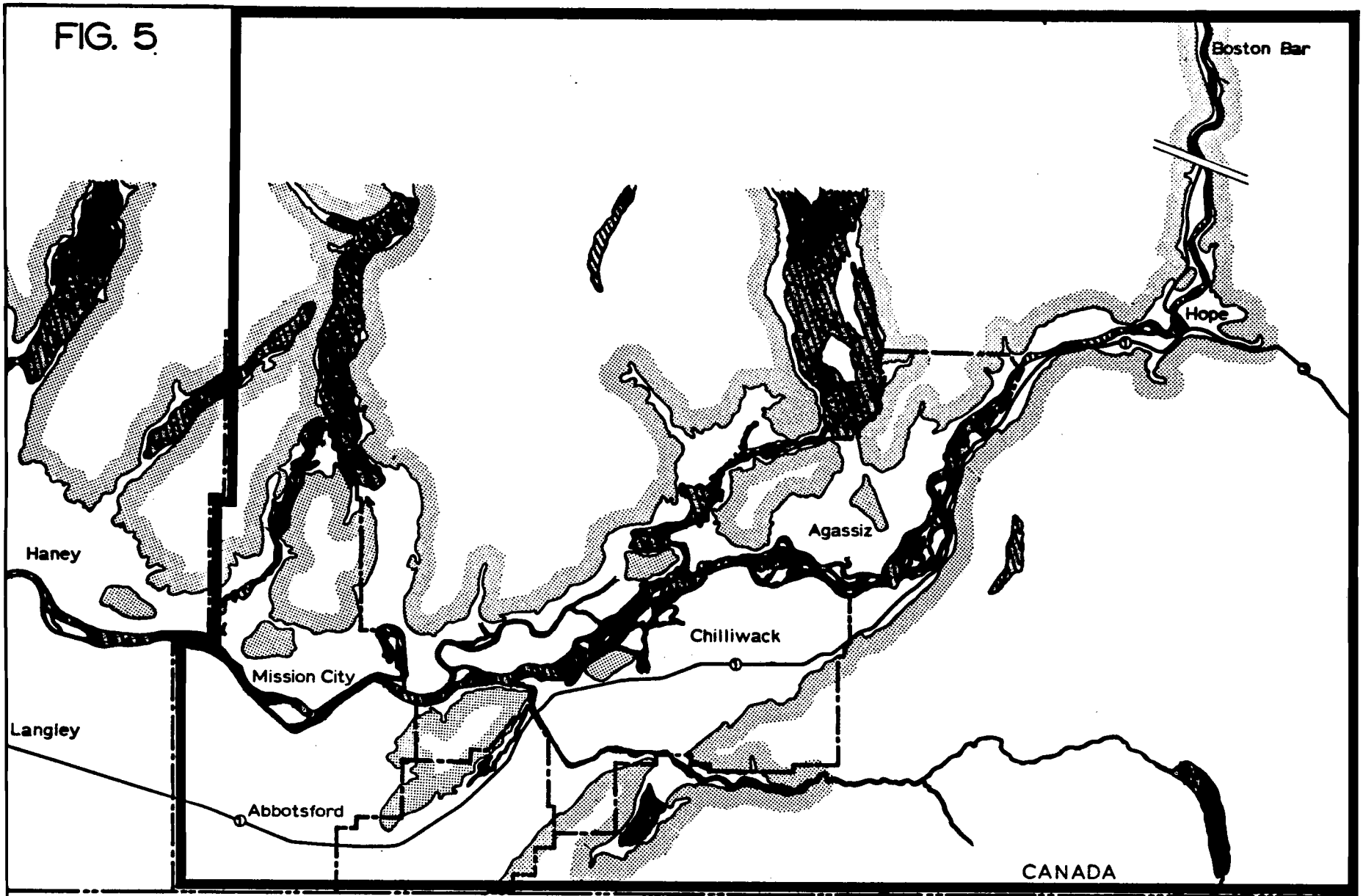


FIG. 5



LEGEND :

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- INTERNATIONAL BOUNDARY
- NON ARABLE
- LAKES AND RIVERS

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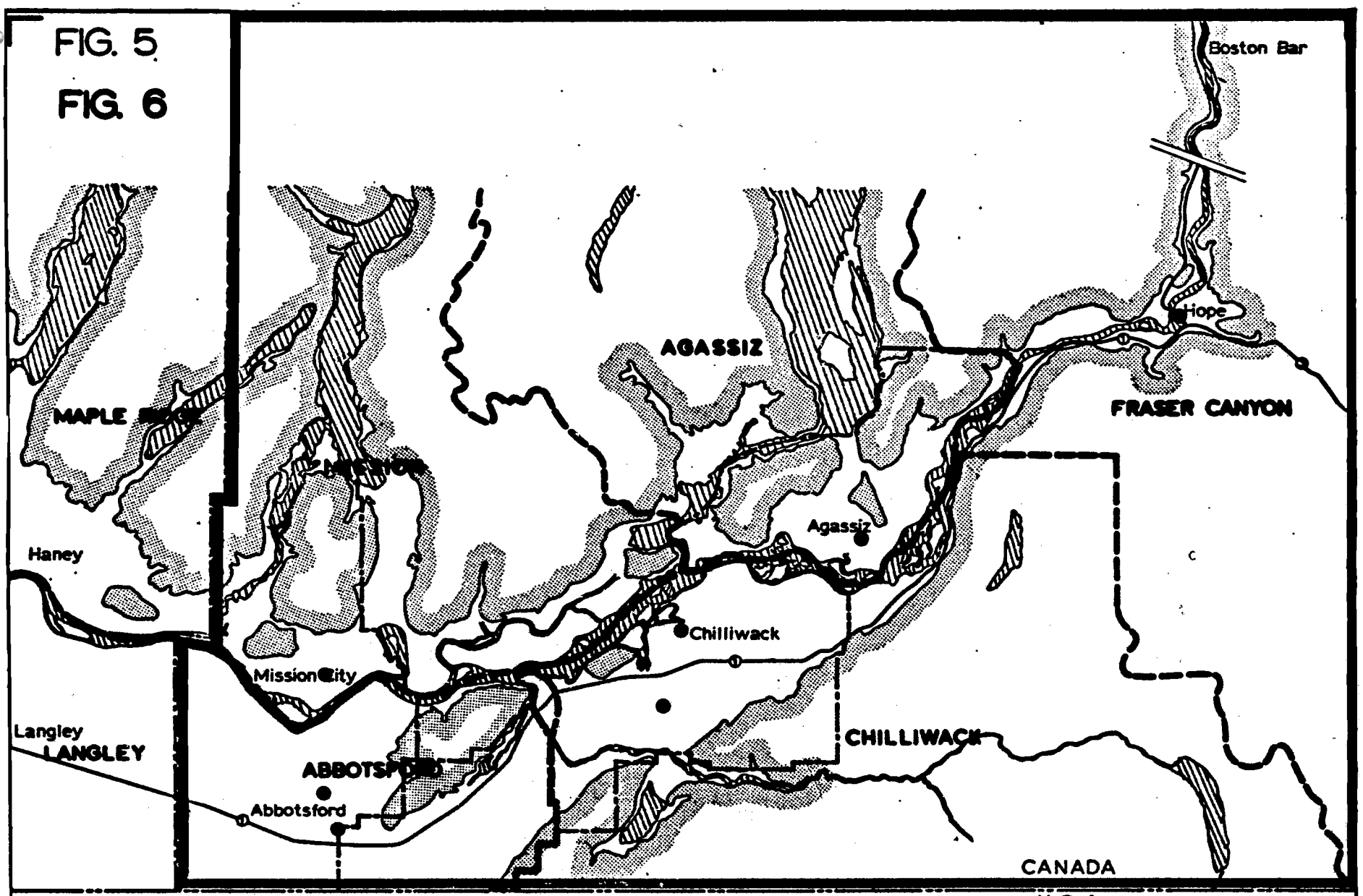
FIG. 5

FIG. 6



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- LAKES AND RIVERS
- SCHOOL DISTRICT BOUNDARY
- SENIOR HIGH SCHOOLS

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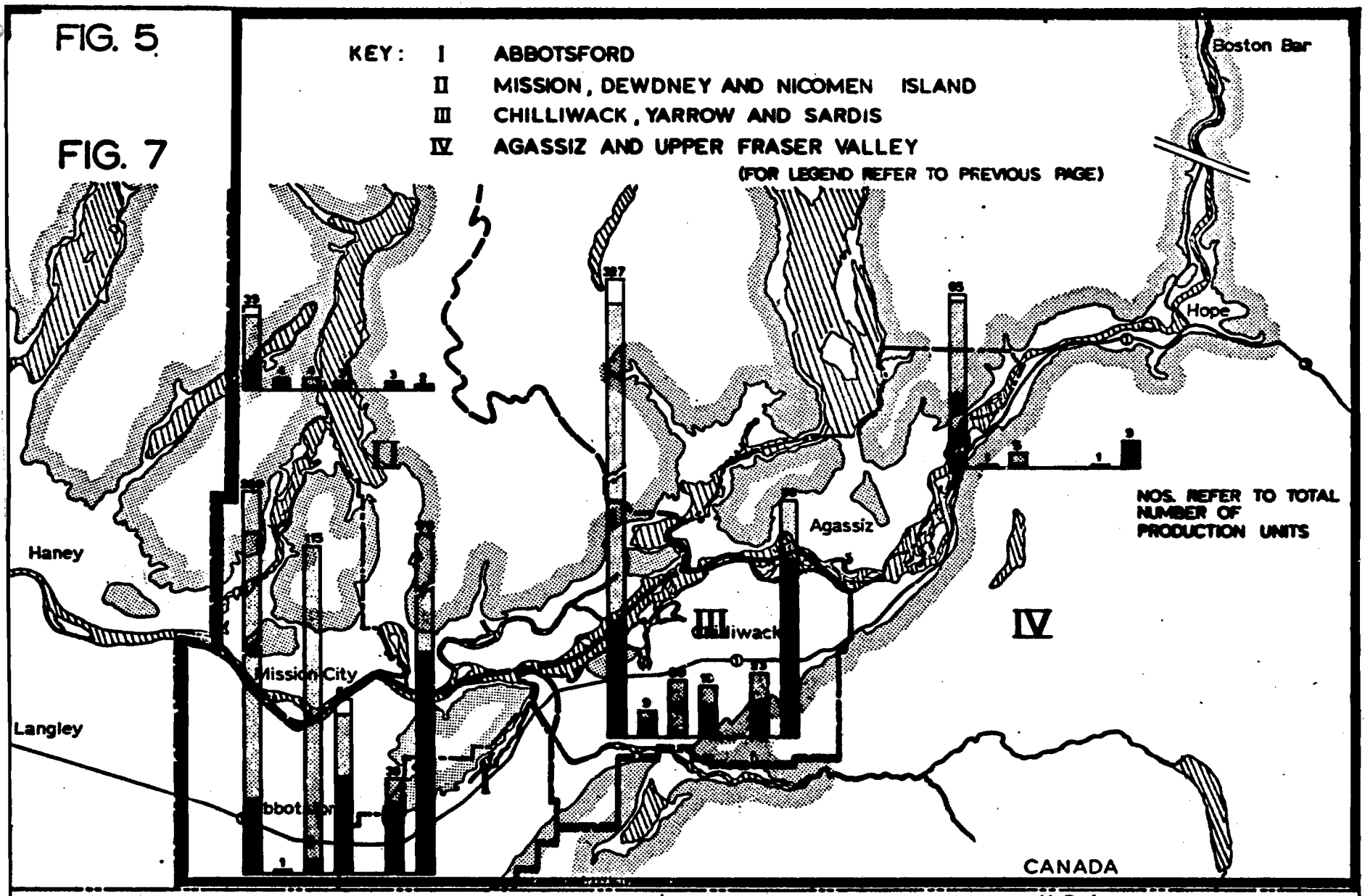
FIG. 5

FIG. 7



LEGEND :

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district boundaries and the location of the Senior High Schools. This overlay should be helpful in relating production activities to potential meeting centres.

The second overlay, Figure 7 , displays the information on dairy farm units in regards to number of producing head; hog farms in regards to annual production; egg producers in regards to number of birds; broiler roaster and cornish hen producers in regards to quota size; and vegetable and fruit farms in regards to acres of production.

c) Primary Agriculture Organizations

The major farming organization in the province of B.C. is the B. C. Federation of Agriculture and it is made up of various primary agriculture member organizations from throughout the province. The primary agriculture associations currently in the Fraser Valley College District are listed in Appendix B1. These number sixteen in total.

2. Secondary Agriculture

The secondary agriculture sector located in the Fraser Valley College District have been defined as those industries that supply a service to the primary agriculture industry. These include fruit and vegetable processing plants, feed mills and fertilizer depots, major farm equipment dealers, hatcheries and veterinary practitioners. A listing of individual secondary agriculture industries is provided in Appendix C. The distribution of these industries is shown in Table 6 and on a map overlay, Figure 8, at the end of Section C.

3. Special Interest Agriculture

Much, if not all, of the special interest agriculture can be related to leisure time or hobby agriculture. The magnitude of the activities which are listed below is not known for the Fraser Valley College District. However, it is known that the major concentration of a large portion of these activities in the Lower Mainland is in the Lower Fraser Valley,

Table 6

Number of Secondary Agriculture Industries

Fraser Valley College District

Area	Food Processing	Feed & Fertilizer	Farm Equipment	Poultry Hatcheries	Veterinarian
Mission	1	-	-	-	1
Abbotsford	2	6	9	6	5
Chilliwack	2	1	7	1	5
Agassiz	-	1	-	-	-
FVC District Total	5	8	16	7	11

west of the Fraser Valley College District.

i) Activities engaged in on smaller acreages or lots include: backyard gardening, backyard tree fruits, home storage of vegetables, small greenhouses, and landscaping.

ii) Activities practiced on larger hobby farms and acreages include: livestock and poultry production, beekeeping, larger version of gardening, organic farming and greenhouses.

iii) A third area is the domestic horse hobby interest. Another special interest which is not predominant at the moment is small sized fresh water fish farming. This may or may not be a factor in the near future.

C. Native Populations within the Fraser Valley College District and the Present or Proposed Agricultural Development of Native Lands.

In discussions with Native Indian Bands, Native Indian Organizations and government officials it became very evident that the Native Indians of the Fraser Valley have shown very little interest in farming throughout their history. The only band that is presently involved in extensive agriculture is the Seabird Island band located near Agassiz, B.C. Here a private corporation has been formed by the band (Seabird Developments Corporation Ltd.), and has developed in excess of 500 acres and is using this as a forage base for a cattle feeding operation. The number of Indian Bands located within the Fraser Valley College District, the number of reserves within these bands, and the population of the bands is shown in Table 7. A map overlay, Figure 9, is included at the end of this section and portrays the distribution of Native Indian Reserves within the Fraser Valley College District.

Under the Department of Indian Affairs the Province of British Columbia is broken down into a number of districts for administration purposes. The majority of the Fraser Valley

Table 7

Indian Bands, Number of Reserves and Reserve Population
Fraser Valley College Region

Band	No. of Reserves	Population
Aitchelitz	3	9
Boston Bar	12	86
Chean	2	136
Chehalis	2	425
Hope	5	131
Kwaw-kwaw-a-pilt	3	8
Lakahahmen	10	95
Matsqui	4	54
Peters	3	33
Popkum	1	10
Scowlitz	3	152
Seabird Island	1	312
Skawanlook	2	43
Skulkayn	3	58
Skwah	6	214
Skway	3	238
Sliammon	6	453
Soowahlie	2	137
Squiala	3	52
Sumas	1	97
Tzeachton	1	110
Union Bar	7	43
Yakweakwioose	2	33
Yale	16	64
Total	101[1]	2,993

[1]NOTE: Some reserves held in common with other Bands therefore, total higher than actual.

Source: Department of Indian Affairs, Government of Canada

region lies within the Fraser District and this district includes all of the Lower Mainland, the Pemberton Valley through to Lillooet, and a portion of the coast extending up beyond Bute Inlet. A small portion of the region is also included in the Thompson River District: this includes mainly the area running from Yale through to North Bend and Boston Bar. Within the Fraser District there are approximately 80,000 acres and, it is estimated by the Indian Affairs Department of the Federal Government, that approximately 20% of this land could be put to agricultural use. Of this, approximately 6,000 acres is located in the Fraser Valley, which indicates that there is a fair potential for agricultural production by Native People in the Fraser Valley. As was mentioned earlier, the Seabird Island Reserve has initiated a program to create an agricultural unit and a similar operation is also being considered for the Cheam Indian Reserve. Most of the agricultural land on the Indian Reserves has had little in the way of farm improvements made to them other than some basic land clearing with the majority of the land still uncleared. Any land that has been developed is, for the most part, held in long term leases to non-Indian leaseholders who may employ Indians from time to time in seasonal labouring positions.

D. Brief Scenario of Future Growth Patterns for the Agricultural Segments

1. Agricultural Segments within the Fraser Valley College District.

a) Primary Agriculture

- Dairy - It is expected that there will be a consolidation of dairy production into larger units resulting in a higher demand for hired labour.
- Poultry - The move to heavier industry controls through the Canadian Egg Marketing Agency and the resulting programmed economic performance of the industry coupled with the continuing trend towards absentee management will mean that training will be

very important to ensure that efficiency is maintained at a maximum.

- Hogs - An increase in total production and number of production units is expected in response to the B. C. Government Income Assurance Program and a change in the federal feed grain policy which now makes B. C. grain users more competitive with their prairie counterparts.

- Beef - There is some growth expected in the feedlot industry but no major expansion. However, there is a continued expansion expected at the hobby farm level, or in pasturing activities, as secondary enterprises to other agricultural operations.

- Field Crops and Horticulture - Pressures on land presently being used to produce these crops in the Lower Fraser Valley is creating a shift in production to the eastern end of the valley. This should result in increased production in the Fraser Valley College District. However, high processing costs coupled with the pressures from outside production, i.e. Washington State, Columbia Basin and Alberta, appear to reduce the possibilities of maintaining or expanding the present food processing industry.

- Small Fruit

  Strawberries - Continual decline in acreage is expected with the exception of U-Pick operations.

  Raspberries - Due to the unique climatic features of the growing area an expansion of raspberry production could occur if mechanical harvesting becomes a reality.

  Blueberries and Cranberries - At the present time production is exceeding demand and both crops are subject to out of province production pres-

sures which curtails expansion in the near future.

- Nurseries - An increase in activity in the Fraser Valley College District is anticipated due to land pressures transferring production from the Lower Fraser Valley coupled with the general increase in demand. Increased competition from U. S. (Oregon) sources will increase need for efficiency operations.
- Greenhouses - Little expansion is expected in the area, but expansion is expected in the Lower Fraser Valley area which could create a demand for Fraser Valley College services.

b) Secondary Agriculture

- Machinery Suppliers - No major expansion is expected in this industry with enough suppliers presently in place to meet the demand. However, new equipment that is coming on the market, or equipment that will be required in the future, will require better training of staff, both for sales and service.
- Food Processing - No expansion due to economic considerations and outside of province competition with the exception possibly being jam production, utilizing mechanically harvested raspberries.
- Feed Mills, Fertilizer Mixing Plants and Feed Stores - No expansion is anticipated for feed mills and fertilizer plants as present capacity appears sufficient to meet demand. However, with the anticipated increase in hobby farms and small farm production there will no doubt be an expansion in feed stores to supply the needs of these operations.
- Veterinarian - No major expansion anticipated

in the large animal industry, however, there will be expansion in the pet field area.

- Hatcheries - No expansion is anticipated with present capacity sufficient to meet the demand.

c) Special Interests - Expansion of hobby type - small farm operations with interest in:
   - livestock and poultry production
   - beekeeping
   - small gardening and organic farming
   - home preserving, meat cutting
   - home storage - vegetables
   - small greenhouses
   - landscaping

2. Specialized Agricultural Segments Throughout the Province

a) Lower Fraser Valley - There is expected to be a continued expansion in the greenhouse industry with both horticulture and floriculture enterprises and a continued expansion of hobby type or small farm operators carrying out a variety of agricultural operations.

b) Beef Industry - Concentration of cow-calf operations to remain in the Central Interior Region with more emphasis on backgrounding and grass and grain finishing.

c) Tree Fruits - Industry to remain centered in the Okanagan Region due to climatic considerations with a greater stability due to income assurance programs and Agricultural Land Reserves.

d) Dairy - Shift in production to North Okanagan and Creston areas to continue, but at a lower rate than during the past 10 years.

e) Poultry - Shift from present location only if industry cannot solve environmental problems.

f) Vegetable - Potential available in other regions of province but exploitation dependent upon economics as a result of outside of province pressures.

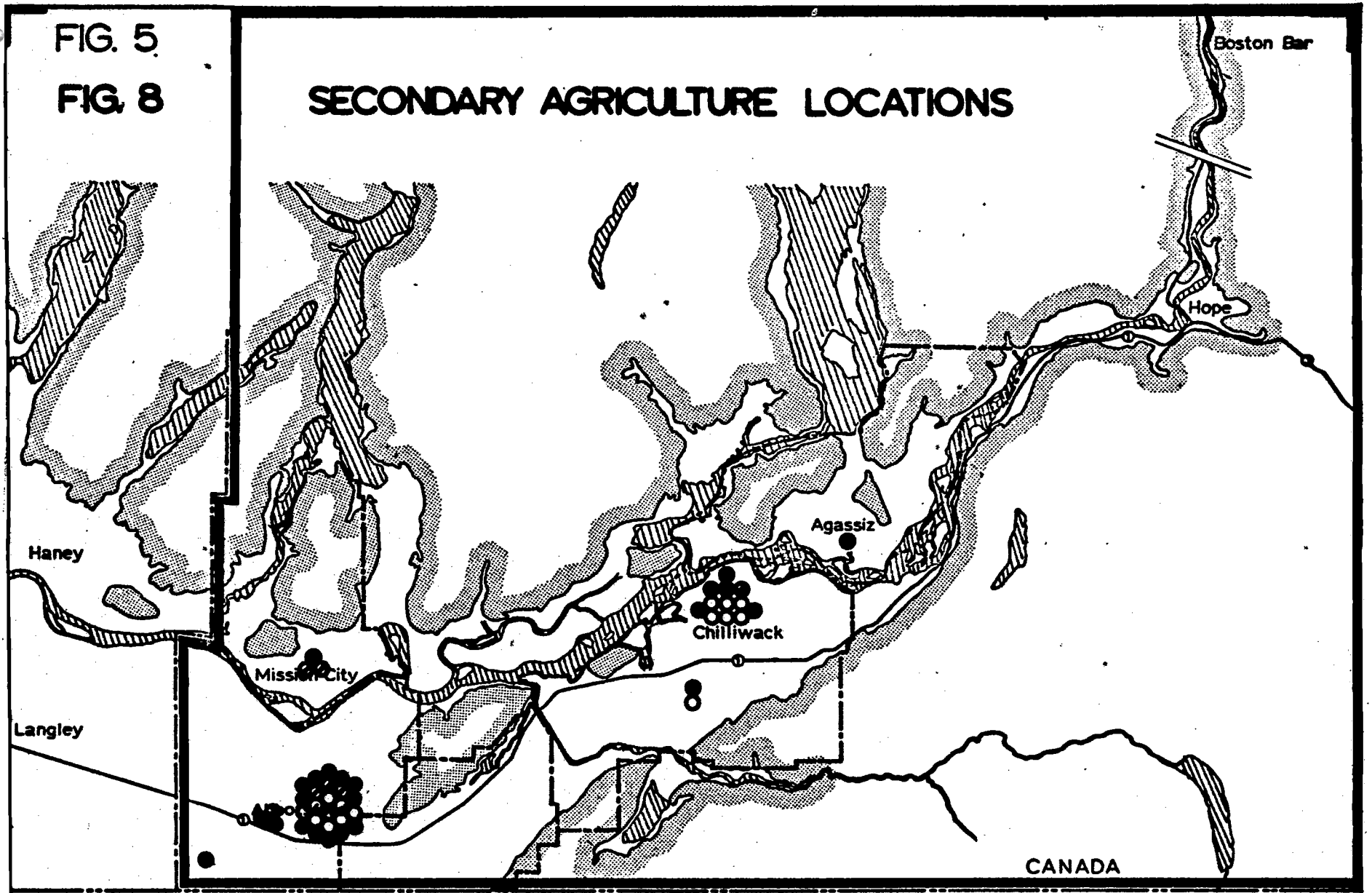
g) Forage - Continued upgrading to increase forage production in response to high grain prices. More emphasis on corn production and artificial drying of alfalfa.

h) Peace River - Government policy favouring greater emphasis on livestock-forage-grain as opposed to present heavy dependence on grain. Success of program in short term dependent on livestock economics and grain prices.

FIG. 5

FIG. 8

SECONDARY AGRICULTURE LOCATIONS



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- INTERNATIONAL BOUNDARY
- NON ARABLE
- LAKES AND RIVERS

- FEED MILLS AND FERTILIZER DEPOTS
- MAJOR FARM EQUIPMENT DEALERS
- VETERINARY PRACTITIONERS
- PROCESSING PLANTS
- HATCHERIES

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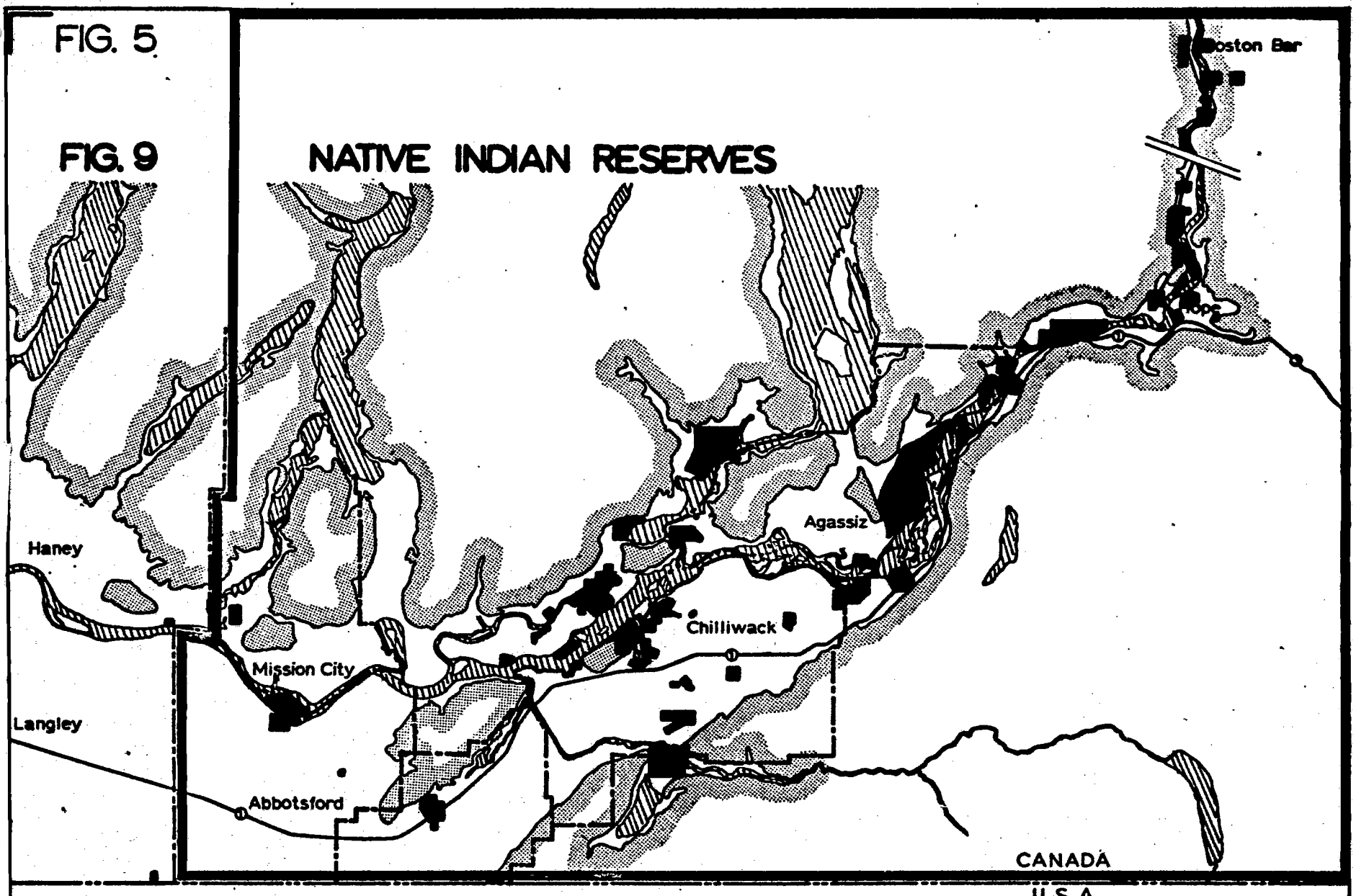
FIG. 5

FIG. 9

NATIVE INDIAN RESERVES



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III Agriculture Vocational Education

A. Introduction - 1970 Ad hoc Committee on Non-degree Agriculture Education in British Columbia

Agricultural vocational education has been a topic of concern and interest within the agricultural community for many years. There have been various attempts to remedy the situation at both the public school and secondary education level. Agricultural vocational education appears in some high schools, and at one time was offered at the University of British Columbia. At the present time it is offered at a limited number of high schools with a varied approach and value, and at the Northern Lights Regional College, Dawson Creek, B. C. It is still felt, by many in the agricultural industry, that the present programs do not fill the demand for agricultural vocational education.

The recent report on this subject prepared by the ad hoc committee on agricultural education examined this question in great detail. This report and recommendations, because of its depth and thoroughness, must be considered very carefully by persons involved in agricultural vocational education.

Early in 1970 an ad hoc committee was formed to examine the whole question of non-degree agriculture education in British Columbia at the post-secondary level. This committee was formed as a result of a variety of interested parties to ensure a broad input of information. In January, 1974 a report was prepared by the committee and submitted to the Ministers of Education and Agriculture. The following is a summary of their conclusions and recommendations contained in the report and a list of the committee members.

Conclusions:

1. The present Post-Secondary Agricultural Programs in British Columbia are successfully catering to the number of students wishing such training.
2. The number of students attending is not sufficient to

supply the needs of the industry due to two factors:

a) Agriculture as an occupational goal is held in low esteem by our young people.

b) The primary "Practical Agriculture" program at the Post-Secondary level in British Columbia is operated in a remote location in the province.

3. The economics of the industry do not warrant more than one centre for each of the three identifiable levels of agriculture education in British Columbia; i.e. Degree
   Technical
   Vocational (practical agriculture)

4. The location of degree courses at U.B.C., and technical courses at B.C.I.T. is quite suitable and should not be repeated elsewhere in the province at this time.

5. Pre-employment Practical Agriculture Education should be general in nature, and not directed to any specific segment of the industry.

6. In any Practical Agriculture training program there must be a combination of theoretical and on-the-job training.

7. The upgrading of practicing farmers and graduates of a basic program can, and is being accomplished by short specific programs of a few weeks' duration.

8. The problem of training Farm Labour should not be included in an ongoing Agriculture Program, but should be accomplished by "Training-on the-job", or short specific programs to meet the need as it develops.

Recommendations:

1. Encourage B.C.I.T. to investigate offering "Agri-Business Management" option as a two year technical

program; the institute already has a Food Production Program, and a Business Management Program. Combination of these into an "Agribusiness Management" program is a logical development.

2. Discontinue the Agriculture Vocational program at Dawson Creek in favour of the program at Fairview College as recommended in the Downey report.

3. Establish a provincial "Practical Agriculture" program in the Fraser Valley as recommended in the Valley College Task Force report. Such a course should be general in nature, utilize existing farms, and be a combination of theoretical and on-the-job training. It should be a minimum of two years duration as presently exists at the B. C. Vocational School in Dawson Creek. Capital involvement should be kept to a minimum, and such equipment, as can be moved readily from B. C. Vocational School - Dawson Creek, should be transferred to the new location. The Committee has no firm recommendations as to location in the Valley.

4. Discontinue "Beef Production" at Cariboo College, and include this facet of agriculture in the general program recommended above.

5. Encourage the Public School System to increase student participation in Agriculture Education at the Secondary School level.

6. Establish a permanent joint committee made up of representatives from U.B.C., B.C.I.T., and staff of the Practical Agriculture program to ensure compatibility between the different programs.

7. Continue the practice of offering short upgrading courses throughout the province.

8. Encourage all Post-Secondary Institutions in the offering of evening or part-time courses for back-

yard farmers and hobbyists.

Committee Members

Mr. D. G. Anstey (Chairman)	Co-ordinator, Adult Technical & Vocational Training, Department of Education
Mr. I. Carne	Director of General Services, Department of Agriculture
Mr. A. C. Carter	Provincial Horticulturist, Department of Agriculture
Mr. G. Drew	President, British Columbia Institute of Agrologists
Mr. R. Hyde	Department Head, Biological Sciences, British Columbia Institute of Technology
Mr. R. Holland	Consultant, Employment Development Section, Department of Manpower and Immigration
Mr. D. R. MacRae	Principal, B. C. Vocational School Dawson Creek
Mr. J. D. Meredith	Program Consultant, Department of Manpower and Immigration
Dr. M. Shaw	Dean of Agriculture, University of British Columbia
Mr. R. Stocks	Manager, British Columbia Federation of Agriculture

This report was reviewed by the Ministers and Deputy Ministers of the Departments of Education and Agriculture, and it was agreed by the two departments to co-operate in developing an agricultural vocational training centre in the Fraser Valley. Representation was also made to the B. C. Institute of Technology in regards to having B.C.I.T. offer an agribusiness management option to the two year technical program. This program is to be offered this fall, (1975), and is dealt with in greater detail in the section under B.C.I.T.

Contrary to the recommendations of the committee it was decided to continue the agriculture vocational program at Dawson Creek and the beef production program at Cariboo College.

B. Performance of Vocational Facilities in Neighbouring Areas Outside of British Columbia

1. Alberta - Olds College

Olds College is located at Olds, Alberta, which is a rural community located approximately 55 miles north of Calgary. The campus is situated on a large farm and has operated since 1913 providing courses in Agriculture and Home Economics. Facilities include modern, well equipped instruction facilities, as well as residence, athletic and social facilities.

The college offers programs at the following three levels: (1) Technologist level - this course normally requires three years, (6 semesters or approximately 2400 contact hours), which is normally 2 semesters or one year beyond the technician diploma; (2) Technician level - normally requires two years, (four semesters or approximately 1800 contact hours), beyond entrance. Some programs within the technician level may require on-the-job training before graduation; (3) Continuing Education - this includes programs on upgrading, updating, interest, hobby, recreation, etc., and are offered at various lengths and levels as required. These courses are offered as either night school, short term daytime seminars, or as correspondence courses. The enrollment for these various courses is shown in Table 8.

The Olds College enjoys an excellent reputation within the agriculture industry of Western Canada and particularly that of Alberta. The largest proportion of each year's graduates return to farms and the influence of the Olds College has been attributed as a factor in the growth of the strong agricultural industry that exists in the province. In addition, the college has supplied a number of graduates to the agribusiness field and the success of these graduates has been a credit to the school.

The college is operated under the Alberta Department of Advanced Education and Manpower and there is growing evidence of a strengthening conflict between Olds College

Table 8

Enrollment Statistics, April 1, 1974 to March 31, 1975
Olds College, Olds, Alberta

	No. of Students	
Long Term Programs:	Fall	Winter
Agricultural Technologies	149	182
Agricultural Mechanics	102	83
Academics - Liberal Arts	17	20
Environmental Technologies	37	34
Fashion Merchandising	77	70
High School Agricultural	12	25
Horticultural Technology	47	45
Commercial Floriculture	9	15
Secretarial Arts	38	31
Horse Husbandry	8	6
Total	496	511
Short Term Programs:		
Artificial Insemination Short Course	67	
Spring Survey School	17	
Farmland Appraisal and Assessment	18	
Artificial Insemination Refresher Course	18	
Artificial Insemination Evening Course	20	
Seed Plant Operators & Managers Course	32	
Horticultural Week	191	
Farrier Course	24	
C. D. A. Technicians Course	35	
Dairy Production Short Course	10	
Pesticide Applicators Course	100	
Total	532	
Other Programs:		
Agricultural Mechanics Apprenticeship	43	
Continuing Education	2,160	
Correspondence Courses (enrolled as of January 31, 1975	463	

and the Extension Department of the Alberta Department of Agriculture. In recent years the Department of Agriculture has expanded rapidly in both manpower and scope of program. This expansion has brought it into conflict with the Olds College particularly in the area of continuing education. It is imperative that persons attempting to establish new agricultural vocational institutions consider very carefully the possibilities of such conflicts and establish procedures to ensure that they do not jeopardize the proposed program.

2. State of Washington - Agriculture Vocational Program

The State of Washington offers a variety of agricultural vocational programs through its Community Colleges. These programs include preparatory programs which are those intended to prepare individuals for entry level employment, and would relate to pre-service training, a supplementary or in-service training, which occurs in many facets and is usually a result of requests of groups of individuals who are interested in upgrading or improving general knowledge, and an organized adult farm management program. The program is implemented to be as responsive as possible to provide short-term courses in such areas as pesticides, farm welding, irrigation, nutrition, etc., to meet the needs of the population.

The enrollment in preparatory or pre-service agricultural vocational courses is shown in Table 9. Information in regards to the employment of students who take agricultural vocational courses is included in Table 10. The figures in Table 9 show that the majority of the students enrolled in agricultural vocational programs were taking courses that were not directly applicable to the primary agriculture industry.

In addition to the preparatory or pre-service courses, and the in-service courses, mentioned above, the Community Colleges offer an agriculture vocational farm management and record analysis program to farmers, with varying enterprises, doing business in Washington. At the present time there are approximately 700 farmers enrolled in this program from

Table 9

Enrollment in Agriculture Preparatory Vocational Programs
State of Washington

1973 - 1974

Program	No. of Students
Agriculture production	49
Supplier Services	124
Mechanics	43
Ornamental Horticulture	213
Resources	90
Other (Animal Tech., Farrier, Fish and Game, etc.)	455
Total	974

Table 10

Employment Status as of November 1, 1974 of
Agricultural Vocational Students

State of Washington

Status	No. of Students
Enrollment - Class of 73/74	516
Completed Program	324
Left Prior to Completion	192
Employed in Agriculture and Related Fields	188
Employed in Other Fields	34
Sought Further Education	64
Did Not Seek Employment	23
Unemployed	41
Status Unknown	166

throughout Washington State.

The purpose of the agricultural vocational farm management program is to provide farmers with analysis information which will be helpful to them in planning their farming operations. Each participating farmer is provided with a copy of a report which lists his individual record analysis figures along with averages of all the farmers. Averages of the top 20% of the farms and the bottom 20% of the farms are provided for comparative purposes. Personal information is kept confidential.

A farm management instructor works with each farmer-client to assist him in setting up his books and providing the necessary information required for analysis. The records are then computerized and the analysis carried out. In addition to instruction on methods of compiling the information the farmer also receives information from his farm instructor in regards to latest farming practices, insurance problems, marketing, etc. The cost of the program to the farmer is $38.50 per year, plus $7.50 for the record keeping books. The farm management instructor holds eleven class meetings per year and also tries to have one on-farm visit per month throughout the year. It should be noted that this program appears to be in quite heavy conflict with the Extension Department of the State of Washington - Agriculture.

C. Inventory of Existing Educational Programs and/or Resources Within the Province of British Columbia

1. Institutional

a) University of British Columbia

The University of British Columbia offers programs in both the educational and extension fields of agriculture. The educational programs offered on agriculture by the university cover the full range of scientific agricultural disciplines and include training at the Bachelor, Masters and Doctoral levels. Some years ago the Faculty of Agriculture offered a two year

diploma course in vocational agriculture. This course was open to students who did not necessarily have university entrance educational requirements, but desired to obtain further education in the field of agriculture. The program was intended to supply vocational training for students who wish to return to the primary agricultural industry. However, there were no special facilities or courses provided for these vocational students and they shared the educational programs and experiences of the first and second year agriculture degree students. This was unsatisfactory from two points of view: (1) The diploma students did not receive the intensive vocational training necessary to equip them for their future roles, and (2) their presence within the courses being offered to degree students served as a restriction to the level of courses that could be taught. As a result of these and other problems the courses were abandoned in the early 1960-s, and since then there has been no effort to revive agricultural vocational training at the University.

In addition to the educational function of the University, an extension function is provided through the Centre for Continuing Education. This function provides short courses, seminars, etc., held at various locations throughout the province and using faculty members from the Faculty of Agriculture as resource personnel. The possibilities of coordinating these activities through the regional colleges is one that must be given a great deal of attention since the duplication of extension programs to the agriculture community is confusing and can also be detrimental to the overall effort. This occurs when the farmers and other persons involved in the agricultural field become confused as to where sources of information can be obtained and who provides courses, and as a result fail to respond to courses that are provided.

b) British Columbia Institute of Technology

The B. C. Institute of Technology offers four areas of instruction within the technical agricultural field. These are contained in the Biological Science Department in the Engineering Division. The options include: Food Processing, Food Production, Landscape Horticulture, and a new option offered this fall, Agri-Management.

A discussion of these options and the qualifications and employment possibilities of the graduates is given below:

i) Food Processing Option

This option provides a thorough knowledge of the basic sciences which leads to more advanced technical subjects related to the effective preservation of food. The student learns to apply knowledge of subjects such as microbiology, food chemistry, and food technology to processes such as canning, freezing, dehydrating, and fermentation.

The graduate in the Food Processing Option is well qualified for employment in the food manufacturing industry. For example, trained technologists are required to perform chemical, physical, and bacteriological tests on food materials during processing, and on the finished packaged goods. The graduate is qualified also to supervise processes within the food manufacturing plant itself. Further employment opportunities exist in government laboratories and inspection services.

ii) Food Production Option

This option offers a thorough grounding in the sciences that are of importance in the production of food from agricultural sources. The student learns to apply knowledge of subjects such as botany, zoology, microbiology, genetics, entomology, and biochemistry to the production of food. In addition to studying plant, animal, and soil sciences, the student becomes acquainted with the analytical, mechanical, and business aspects of modern agricultural production.

The graduate in Food Production Option has many employment avenues open to him/her. For example, trained technologists are required for the laboratory control of agricultural chemicals, feeds, and fertilizers, and also in the field operations of food manufacturing concerns. Additional job opportunities exist in inspection services and in government and industry research laboratories.

iii) Landscape Horticulture Option

This option deals with the ornamental plantings that are an important part of residential, commercial, industrial, and park developments. The option includes a basic study of the natural sciences that apply to the fields of floriculture, arboriculture, nursery production, turf management, and landscaping. It includes also, the techniques of plan preparation for landscape architectural projects. In the second year, the Landscape Horticulture Option is divided into two specialties, the Landscape and Nursery Specialty, and the Landscape Plan Techniques Specialty.

The graduate in the Landscape and Nursery Specialty is prepared for employment with landscape contractors, horticultural nurseries, and park systems. The graduate in the Landscape Plan Techniques Specialty is trained for employment in the offices of landscape architects.

iv) Agri-Management Option

This option deals with the effective use of the land, capital, and labour employed in the production and distribution of food in order to improve the efficiency and productivity and thereby increase farming income. Also, it involves the efficient operation of farm related businesses such as feed, fertilizer, agricultural, chemical,and agricultural machinery enterprises.

Agri-management has two important aspects. One is the management principles that are used in the planning, organizing, directing and co-ordinating of the business and in the marketing of its products. The other is the technology of the

factors of production which include crops, livestock, soils and agricultural mechanization.

The trained technologists are required for positions as farm managers, as supervisors, and as managers in farm related industries in British Columbia.

Graduates from the British Columbia Institute of Technology, Biological Sciences Option have found employment in a number of areas within the agricultural industry. These positions range from technical laboratory positions through to field men involved in agricultural production in the areas of supervision and management. With the addition of the Agri-management option the institute will be filling a large void that has existed in the present agricultural training available within the province.

c) B. C. Department of Agriculture

The extension service of the B. C. Department of Agriculture must be considered to be the most important educational force existing in the field of vocational agriculture in the province. Through the Agricultural Development and Extension Branch the department provides a diversity of programs and services designed to assist people in rural British Columbia to achieve optimum development and utilization of their resources. A complete descripton of these services offered by the department is too large to be included in this report. It should be noted that persons responsible for vocational agricultural programs within the province should gain a very careful insight into the services provided and the philosophy behind the services of the B. C. Department of Agriculture. It has been noted in the previous section, in regards to vocational facilities outside the Province of British Columbia, that quite often conflicts arise between agricultural vocational centres and the extension services of the various departments of agriculture. In British Columbia our overall agricultural resource is quite limited compared to areas such as Alberta, Washington State, etc. As a result the public

monies available for extension and vocational education in agriculture are correspondingly limited, and therefore, any wasteful conflict between the extension department of the Department of Agriculture and any agricultural vocational programs must be eliminated to ensure that the agriculture industry receives the best possible effort from the funds available.

Of particular interest to Fraser Valley College are the Department of Agriculture offices located in Abbotsford, and Cloverdale, which contain a variety of resource personnel who are adequately trained to provide instruction and assistance in agricultural vocational programs.

The presence of the B. C. Department of Agriculture Veterinary Laboratory, located at Abbotsford, B. C., also provides another excellent resource source. Personnel here include specially trained veterinarians, pathologists, microbiologists, etc., who could be available as resource personnel for instruction and participation in agricultural vocational courses.

d) Malaspina College

Malaspina College is a post-secondary educational institution serving the education requirements of the Cowichan, Lake Cowichan, Nanaimo and Qualicum school districts. Malaspina College offers the two year academic program of studies for transfer to third year university, both one and two year technical programs and programs of less than one year in the vocational study area. Short term courses on a variety of subjects are also offered through the College's continuing education program. The College attempted to establish an Agricultural Certificate Program providing courses in agriculture and the awarding of a certificate upon the completion of fifteen semester hours of courses. An outline of the certificate program and the various courses is shown on Table 11.

This program has been abandoned due to a lack of interest, and at the present time the only courses being offered

Table 11

Agricultural Certificate Program
Malaspina College, Nanaimo, B. C.

Certificate awarded for the completion of 15 semester hours of course work.

Course	Semester Hours	Title and Description
Agriculture 100G[1]	1	Soil Science - general introduction to soils
Agriculture 111G[1]	2	Part-Time Farming - survey of possible farm activities
Agriculture 112G[1]	2	Part-Time Farming - expansion of Agriculture 111G
Agriculture 114T	2	Fruit Crops, Trees & Small Fruits - growing and handling
Agriculture 115T	2	Vegetable & Greenhouse Crops - home and market
Agriculture 116T	2	Landscaping & Floriculture - design and culture
Agriculture 117T	2	Field Crops, Forage Crops and Weeds - culture, management & identification
Agriculture 118T	2	Introduction to Animal Husbandry - breeding, feeding, management and marketing
Agriculture 119T	2	Poultry - general husbandry
Agriculture 120T	2	Dairying - Advanced - principles and practices
Agriculture 121G[1]	2	Agri-business - basic accounting and costing
Agriculture 122G	1	Beekeeping for Beginners
Agriculture 123G	1	Second Course in Beekeeping

[1]Compulsory

are in the areas of organic gardening and beekeeping. The lack of interest in the agriculture certificate program is initially a matter of concern for persons who wish to establish agricultural vocational programs at regional colleges in the province. However, upon examination of the types of courses offered one must conclude that the program failed to meet the requirements, in terms of vocational agriculture, for the area. An examination of the course outlines shows little to interest commercial farmers or persons who wish to gain employment on commercial farms. The main thrust of the program appeared to be aimed at the part-time farm population. In the Malaspina College area there is a high percentage of part-time farmers because of the rural urban interface of that particular region. It was felt, by the College, that courses in agriculture would be of benefit to persons in this type of farming situation. However, it must be considered that part-time farmers, because of the very nature of their activities, have relatively little time available for continuing education courses. They are much more likely to respond to courses that provide detailed applicable information to their particular operations, rather than the broad general type of information provided in the courses outlined. The apparent lack of on-site vocational type application in these courses would also be a deterrent to enrollment. The need to supply both the art and the science of agriculture is a principle that must be given full consideration in laying out agricultural vocational type courses.

These types of courses also provide limited value to persons who wish to obtain employment in the field of primary agriculture. The lack of practical type courses made this type of program of limited value to anybody who wished to use it as a stepping stone to employment in the field of agriculture. In conclusion, one must feel that the lack of success of the agriculture certificate program at Malaspina College was more a result of the apparent lack of matching courses to need, rather than a lack of need for the program.

e) Northern Lights College, Dawson Creek

Northern Lights College at Dawson Creek (formerly B.C. Vocational School) initiated a two year agricultural vocational program in 1967. The 1974/75 enrollment in this course is shown below:

	1st year	2nd year	Total
Fall 1974	25	13	38
Spril 1975	19	13	32

The facilities at the College could handle up to 50 students and they have had enrollment as high as 40 at one time.

The Vocational Agriculture program is designed to provide a sound basic knowledge of general agriculture. The three main areas of study are Crop Science, Animal Science and Farm Business Management. The program is established on the basis of a two year program, divided into two winter sessions, each beginning in mid-October and ending in mid-April. Students have the opportunity, and are encouraged, to seek employment in agriculture to gain practical experience during the summer months.

The first semester of Crop Science is devoted to soils, fertilizers and plant anatomy. The Animal Sciehce section covers animal physiology, nutrition, reproduction and breeding. The Farm Management studies marketing, records, income tax, budgets and basic economic principles. In addition, students receive practical training in farm electrification, building construction and welding.

The second semester deals with soil management, crop production, vegetable production and beekeeping. The Animal Science section covers the breeds of farm livestock, judging and showing, animal health and disease prevention, management of beef cattle, sheep and swine, and principles of dairying and poultry production. Farm Management covers agricultural resource management including buildings, machinery and labour; also agricultural production factors including business

arrangements. All students also receive practical training in farm mechanics.

The minimum educational requirement for this course is completion of Grade 10, but college officials state that it is to the applicant's advantage, as an aid in course work and in securing employment, to have completed Grade 12. Adult applicants who do not possess the minimum educational requirement, but who have worked for several years, may have their experience assessed in lieu of the stated educational minimum.

The program has been heavily supported by the Canada Manpower Department which at the present time holds 35 places for the two year program. The Department of Indian Affairs has also held places, at times, for the training of Native Indians.

The college is very concerned that the development of an agricultural vocational training center at another location in British Columbia would have a very serious effect on enrollment in their program. The origin of students for the program is shown in Table 12 and during the years 1972 - 74 inclusive over 50% of the students attending the program were from locations south of Williams Lake. College officials feel, because of the high cost of this program, that any reduction in student numbers would make the viability of this program questionable.

The 1970 Ad hoc Committee on Non-degree Agriculture Education in British Columbia recommended that the Dawson Creek Vocational Agriculture Education Program be discontinued as recommended in the Downey Report. However, the Northern Lights College officials point out that this discontinuation was part of an overall plan to create "Federated Colleges of the Peace". Such a federation would have provided Dawson Creek with replacement programs for the Agricultural Vocational program. The college officials feel that since this facet of the Downey Report is not being enacted that every effort must be made to preserve the Agricultural Vocational Program. It was also

pointed out that this program provides facilities that are useful to the agricultural community, (e.g. farm for testing and demonstrations).

It is beyond the scope of this report to prepare recommendations on the fate of the Dawson Creek Program but it must be noted that the location of the College is a constraint to the attendance of many students from other farming areas in the province. A further constraint is that the agriculture of the surrounding area is markedly different than that practiced in the intensive agricultural areas of the Lower Mainland and Okanagan.

Table 12

Origin of Students in Agricultural Vocational Training at Dawson Creek, B. C.

Year	North of Williams Lake	South of Williams Lake	Total
1972	13	11	24
1973	7	14	21
1974	13	12	25
Total	33	37	70

Source: Northern Lights College, Dawson, Creek, B. C.

f) Cariboo College, Kamloops, B. C.

A "beef production" program was initiated at this College to provide vocational education for employees or prospective employees of the ranching industry of the Interior of British Columbia. This program provided training in the various fields associated with beef production.

This program has been discontinued due to a lack of response, and no plans are under way to offer courses in this area. In discussions with members of the ranching community it is evident that there is a need for the type of training embodied in the "beef production program". The failure of the "beef production program", to meet this need, would seem to be the result of the ranching community not relating to the manner in which the program was structured. One opinion put forward by a number of ranchers was the need for training persons already employed. This training would have to be structured so that there was a minimum of interruption in the employees' normal activities. The use of short duration courses on specific subjects would seem to facilitate this requirement.

The involvement of Canada Manpower in this course was also questioned, since, in the opinion of some ranchers, it created a situation where persons who were not intending to enter ranching employment took the courses because of the monetary benefits offered by Canada Manpower. They felt that Canada Manpower assistance to compensate ranchers for the time spent by their employees on short specific training programs would be more beneficial.

g) Canada Department of Agriculture

The Canada Department of Agriculture operates a Research Station at Agassiz, B. C. At this station various research projects are carried out covering both plants and animals. The Research Station does not carry out any direct extension programs, but it has personnel and facilities available that would be useful components of an agricultural vocational education program. The Research Station Director and staff have expressed a willingness to assist in agricultural vocational education programs.

2. Agriculture Industry

a) Education Committees

A number of Education Committees have been established comprising B. C. Department of Agriculture personnel and primary producers. The purpose of these committees is to examine problems affecting the primary producers and provide programs to overcome these problems. At the present time Education Committees include the following commodity groups: dairy, livestock and forages. These committees would serve as an excellent source of information and interaction for persons involved in Agricultural Vocational Education Programs.

b) Canada Farm Labour Pool

This organization specializes in labour placement to the primary agricultural industry. It has been operation in British Columbia for approximately one year, with an office located in Abbotsford, and two other offices located in other regions of the province. The administration is handled by a manager and support staff with advice and direction supplied by a board representing various types of primary agriculture.

The Canada Farm Labour Pool is very interested in agricultural vocational education and because of their close association with the farm labour scene are a key reference on agricultural vocational education requirements. They have

indicated a desire to assist with the development of agricultural vocational education in British Columbia.

c) B. C. Federation of Agriculture (B.C.F.A.)

The B. C. Federation of Agriculture has been discussed in a previous chapter and is mentioned here since it is an important contact with producers and producer's organizations. A strong liaison with the B.C.F.A. is suggested for anyone involved in Agricultural Vocational Education Programs.

d) B. C. Hydro & Power Authority

The B. C. Hydro & Power Authority provides a limited extension service to the agriculture industry designed to assist farmers to make efficient use of electrical power. The personnel of the B. C. Hydro & Power Authority would be useful resource personnel and have indicated a desire to assist, where possible, on agricultural educational programs.

e) Secondary Industry

Secondary industries such as Butler Bros. Ltd., (equipment suppliers), and Fraser Valley Frosted Foods, (fruit and vegetable processors), are a useful resource source in terms of supplying equipment, in-place training, or resource personnel for instruction.

D. Survey of Vocational Needs from the Various Agricultural Segments

1. Agricultural Segments within the Fraser Valley College District

a) Primary Agriculture

Dairy - agricultural vocational needs are a function of the size and makeup of the dairy farm. For example, on a large dairy farm there is a need for an employee trained in machine maintenance and field operations. On a moderate sized dairy farm this need is filled by the owner, and therefore, the position is not available to a graduate from a pre-service training program. There is a need for specially trained milkers

on large, moderate, and small dairy operations. This requirement may vary from full time to part-time depending on the structure of the actual operation. This is a position that is usually hired on a moderate sized dairy farm since it is easier to assign this responsibility than it is to assign the responsibilities for machine operation, irrigation, cropping, etc.

There is some requirement for pre-service training of dairy farm operators to meet the demand of the larger absentee ownership situation or to provide training for the son who eventually plans to take over the operation.

There is continual need for a variety of in-service programs which should be short and specific to some topic or some aspect of a topic (e.g. nutrition - optimum use of home grown feedstuffs).

Poultry - As in dairy operations the demand for training varies with the size and structure of the production unit. There is a requirement for in-service training on specific subjects such as waste management, disease prevention, etc., for both the small and larger poultry operators. There is also a requirement for pre-service training for farm operators for the absentee owner type situations, or for farm workers on the larger units.

Vegetable and Horticultural - There is a very apparent demand for pre-service short-duration mechanical operators course to train tractor drivers and other equipment operators for the industry. The requirement within the industry is seasonal for this type of person and there is a high turnover from year to year, and therefore, a continual pre-service training program is required. There is also a requirement on the part of the larger food processing companies who operate their own farms for adequately trained field men to supervise farm labour. This could be a pre-service or a continuing in-service apprenticeship type of program.

Beef - This is a low labour enterprise and is usually secondary in nature, and therefore, usually only requires in-

service and up-dating training. Here again the courses should be short and specific to certain aspects of the beef production industry.

Small Fruits - Demand for training here will be mainly on the part of the small or hobby operators, once again being short and specific; a possible exception is raspberry production when mechanical harvesting becomes established.

Nurseries - A requirement exists for training programs for present operators. These would be in-service type, after-hour courses, providing short and specific training in the different areas of the industry. Also, there is a requirement for pre-service training of seasonal labour in view of the high labour turnover and the seasonal nature of this work.

b) Secondary Industry

Equipment Suppliers - People are required with standard training in hydraulics and heavy duty mechanics who have additional training in the agricultural machinery field. There is need for a course to adapt qualified heavy duty mechanics and other associated tradesmen to the agricultural machinery field. At the present time the majority of the sales staff is being trained through the equipment suppliers, but there would seem to be a need here for a further training program for these personnel to provide them with a better insight into the agriculture industry.

Food Processing - At the present time the clients interviewed carry out their own in-house-training with some assistance from suppliers.

Feed Mills, Fertilizer Plants, and Feed Stores - A very limited need for training of plant personnel, as this is apparently well handled with on-the-job programs. Some need for a training program for field representatives; this could be in both the pre-service and in-service fields and would require both vocational and technical type training. Feed store employees, because of their contact with a number

of smaller operators, require a good grounding in basic agriculture and, therefore, pre-service and in-service training would be of benefit.

Veterinarian - Technical training programs for veterinarian assistants have gained a great deal of popularity at the Olds Agricultural College in Alberta. In January, 1975, the British Columbia Veterinary Medical Association sent out a questionnaire to their membership in regards to the need for an animal health technician training program. The results of the questionnaire showed that only 21 technicians would be required in the next two years with over 50% of these requirements for small animal units. The Alberta program will have 67 persons graduating per year with only approximately 35 being employed within the province. Therefore, it would seem that there is going to be a surplus of adequately trained veterinarian assistants and a program in this field would not seem justified at the present time.

Hatcheries - Indications are that in-service training programs in regards to sanitation, production methods, etc., would be well received by some of the hatcheries and, in addition, pre-service training of a vocational technical nature would be useful for their field representatives.

c) Special Interest Agriculture

Indications are that vocational courses designed for these special interest agriculture groups would meet with a good response providing they were short, specific, and included a high level of vocational training. For example, a person who is interested in beef production may respond to a general course in animal husbandry but is much more interested in the specific course that deals with actual day to day problems of raising a small number of beef animals, particularly if this course is taught in a situation where the student can be in physical contact with animals. This also applies to vegetable production and other areas. All of the areas outlined in the scenario on future growth of special interest require

the short type, specific programs that are of a practical as possible nature.

2. Specialized Agricultural Segments Throughout the Province.

Dairy - The courses developed to fulfill the needs outlined in the dairy section would have relevance and interest to producers from the North Okanagan and Creston areas.

Beef - There is a need for in-service training in beef production particularly in the fields of brood cow nutrition, irrigation, and performance testing. There is also a need for pre-service training to meet employment requirements of larger ranches. This interest will arise mainly from the Central Region.

Fruit - The majority of farms are medium sized and do not require pre-service full time employees. There is some need for pre-service training of seasonal workers. These should be short duration, specific type courses.

Grain - The majority of the industry is centered in the Peace River with some production in Creston. There is some demand for pre-service training in the operation of farm equipment and crop production.

Forage - There is some demand for full time employees on larger operations with full pre-service training and demand for in-service training to upgrade present operators.

3. Native Populations.

The lack of exposure reduces the benefits that Native People can obtain from courses in vocational agriculture. There is a need for upgrading or introductory courses (field trips, etc.) to prepare Native People for regular vocational programs. There is a need for full pre-service training or complete in-service training for Native People to support the present and planned agricultural operations.

E. Analysis of the Vocational Education Needs and Resources.

The analysis of the studies carried out on agricultural vocational education, a review of other agricultural vocational programs, and the survey of the agricultural vocational needs of the Fraser Valley College District are presented under the following three headings: (1) Generalized Statements on Agricultural Vocational Education; (2) Specific Illustrations of Agricultural Vocational Education Needs; and (3) Procedures for Developing Agricultural Vocational Education Programs.

1. Generalized Statements on Agricultural Vocational Education.

a) Objective

There is a need to provide training to persons employed or entering employment in the primary agricultural field. This training must be of a practical nature and must provide emphasis on manual skill as well as provide instruction on the theoretical aspects of primary agriculture production. The training must equip the person to carry out fundamental activities connected with primary agriculture as well as provide a basis for appreciating the reason for these activities. The training should primarily prepare persons for farm-labour employment with specific courses, where applicable, designed to upgrade the management skills of present farm managers.

b) Structure

There is a need for a provincially centralized agricultural vocational education facility located in a dominant agricultural area. This facility would provide a basis for agricultural vocational education in British Columbia. An important part of this structure would be the interacting of this facility with other areas through Regional Colleges, School Districts, the B. C. Department of Agriculture, etc., to produce a relevant program throughout the province. The central facility would serve as a focal point and provide basic core courses with local regional colleges providing courses of particular interest to that region, e.g. students

from the Okanagan would obtain basic courses at the central facility but would get specific training in orchard production at the regional college in the Okanagan. These courses should be coordinated through the central facility to ensure that the program has continuity throughout the province.

It would be extremely difficult to initiate a full scale agricultural vocational education program and receive the response necessary to ensure its success. The development of a program and the individual course components of the program should be phased into the system. The individual courses should be self contained modules that provide instruction in specific areas. These courses should be structured so that they provide useful training even if the student terminates enrollment after completion of the one course. The individual course should be of short duration to allow participation by persons who want only specific information or who can only attend courses for a short period of time. It would be very useful to assign a credit value to these modules so that a certificate or diploma could be granted to a person who completes a specified number of courses or modules.

It is not considered necessary or desirable for the facility to have an institutional farm connected with it, but rather it should make use of operating farms in the vicinity to provide facilities for practical instruction. A system whereby a producer allows students to carry out farming activities using his facilities would seem practical and feasible. The terms under which such facilities are made available to students will require further study. In this regard the B. C. Department of Agriculture has indicated a willingness to assist in providing a solution to this problem.

The facility should, however, have adequate laboratories, greenhouses and field plots to provide materials for classroom instruction. Because of the dominant role that the B. C. Department of Agriculture has in agricultural extension, and the resources available from the Department in terms of personnel and

information, it is imperative that the activities of the facility be coordinated with the Department.

c) Program Type and Classification

Any analysis of program type and classification of agricultural vocational education must consider pre-service and in-service training. Pre-service training is generally referred to as courses designed to prepare persons who plan to enter employment, while in-service is an upgrading of skills for those persons already employed. Because of the present shortage of programs for agricultural vocational training in British Columbia there will initially be a clear delineation between pre-service and in-service training. This present lack of training has created a situation where a considerable amount of upgrading is required to improve the present labour force as well as provide training for persons entering the labour force.

i) Length of Program

As a result of this present shortage of training specific courses are required to meet the present needs and these courses should evolve to form the basis for a full pre-service training program. The courses should be of relatively short duration (3 - 4 weeks) to allow a concentration of activity to ensure that interest is maintained at a high level.

ii) Nature of Program

The courses must contain a good portion of "on farm instruction" so that upon completion persons are well prepared to carry out activities common to normal farming practice. In instances where persons are employed in primary agriculture production their normal employment activities may be considered as fulfilling the practical portion of the course. In these instances interaction should occur between the instructor and the employer to ensure that the student is obtaining maximum benefit from the course in terms of practical application. The timing of lectures and practical on-farm-training will vary from course to course and will be dependent

to a large extent on whether the course is pre-service or in-service and on the type of commodity group that it is designed for.

In-service courses should also be available to meet the demand for the upgrading of management skills for producers. Areas that should be considered include accounting principles, marketing, legal, credit use, source, etc.

d) Levels of Education Needs

The agricultural vocational requirement of the agricultural community can be grouped into four classes or levels:

Level 1 - includes seasonal labour and junior level permanent agriculture labour
Level 2 - intermediate and senior permanent labour
Level 3 - individual agricultural sector specialists and junior level management (foreman)
Level 4 - managers

2. Specific Illustrations of Agricultural Vocational Needs

Specific needs that have been observed while conducting this study can be broken into three categories: (a) Needs Common to Many Agricultural Sectors; (b) Needs Specific to Individual Agricultural Sectors;and (c) Needs of Management Level.

a) Needs Common to Many Agricultural Sectors

Much of the farm labour force available today for seasonal and junior level permanent input to production agriculture lacks basic and necessary knowledge in the area of basic farm labour tasks. Therefore, Level 1 vocational education is required in this area including:

- tractor driving
- correct use of farm equipment
- care of equipment
- fence construction and maintenance

- basic carpentry
- power tools
- hand tools, e.g. correct use of shovels

General basic exposure to farm animals and crops is required for Level 1 and Level 2 farm labour. There is a need to develop a fundamental attitude towards these components of primary agriculture. They should be able to recognize obvious health problems of animals or how to react in an emergency. This fundamental understanding with respect to crops will assist in developing the necessary exposure to cropping practices including planting, cultivation, spraying, harvesting and storage.

On a Level 2 program the more senior agricultural labourer should be versed in farm electrification, farm plumbing, building maintenance and welding, for example. Level 3 training in the area of supervision of labour forces is particularly important for a number of farming enterprises where labour forces are employed on full or part-time basis. The requirements for Level 4 are dealt with under heading (c) below.

b) Needs Specific to Individual Agriculture Sectors

In the case of primary agriculture it is seen that some educational requirements are specific to a single sector only, while in other cases the needs are similar from sector to sector. Dairy has a specific need for a labour unit. This labour unit can take the form of either a milker or a herdsman depending upon whether or not the farm owner or family participates in either the milker or herdsman role. Other sectors, namely, small fruits, tree fruits, swine producers, beef feedlots and cow-calf operators require either a second labour unit or require that existing labour be upgraded. For small fruits, understanding of the cultural practices of specific crop types is required with emphasis on pruning and spraying. Existing permanent staff would obtain this updating and would also enable that farm to provide a certain amount of custom work. For

tree fruits, the permanent staff units require, in addition to the basics of tree fruit cultural practices, an introduction to irrigation practices. On swine production farms a second man unit, a common requirement, must have some understanding of swine husbandry and function in this regard under supervision. Similarly, beef feedlots require a second man unit to execute basic tasks in husbandry under supervision. Cow-calf operations, primarily located in the interior, require permanent labour with training in cow husbandry, irrigation practice, and forage production.

Secondary agricultural industries persently do their staff training "in house", and therefore, have no specific request for assistance at this time. This does not, however, mean that the College cannot play a role in this area at some point in the future.

With respect to Native Peoples, evidence of the desire for upgrading training has been deomonstrated by their support for the recent course given on beef production. The Native People require basics followed by courses specific to native projects, for example, Seabird Island. It has been expressed that the Native People have more interest in animals than in crops, but they will require the crops to complete their total project requirements.

There is a desire on the part of Native People to direct management of their affairs and projects into their own hands. To accomplish this in regards to agriculture it is important that courses be designed to develop Native People with the required expertise to manage the agricultural production units.

c) Needs of the Management Level

The agricultural vocational education needs of the senior level of farm manager will vary with the size of the farm. On the smaller farms the farm manager also serves as foreman, senior labourer, etc., and must have the basic skills necessary to fill these positions. There are a number of management skills that are required by farm managers on both large and small production units. These include:

i) Financial

It is not necessary for the manager to be qualified in the field of accounting, but he should be aware of the principles involved and understand how to prepare basic documents such as cash flow projections, etc.,

ii) Marketing

This area is becoming increasingly important as producers become more involved in the direct marketing of their produce, (e.g. producer cooperatives, where individual farmers serve as directors and must make policy decisions).

iii) Overall Planning

Development of both short and long term planning procedures.

The new course offered at B.C.I.T. on agri-business should provide the education required for prospective management type employees with Fraser Valley College providing in-service training for the presently employed managers. Co-ordination between B.C.I.T. and the Fraser Valley College in this area would be extremely important.

3. Procedures for Developing Agricultural Vocational Education Programs.

In order to develop agricultural vocational education programs it is necessary firstly to establish the basic organization or model, and secondly to follow up with suggested program testing procedures.

a) Basic Organization

The basic organization will provide the following function:

- maintain basic inventory figures to provide estimates of magnitude.
- create an advisory panel including Fraser Valley College "associates" where associates are defined as being those organizations which presently contribute to agriculture vocational education in the Province of British Columbia; for example, B. C. Department of Agriculture, Dairy Education

Committee, etc.

- introduce an agriculture coordinator such as a Fraser Valley College staff member, who will provide liaison with college associates with emphasis on the B. C. Department of Agriculture.

b) Program Testing Procedures

There will be two main ways in which Fraser Valley College will become involved in agricultural vocational education programs:

- the College is asked to put on a course, or,
- the College develops a course concept.

Before proceeding with the course it will be necessary to carry out a program test to determine what the response to such a program may be and to obtain further information on the group that will be taking the program. The tests available include:

- test using base inventory data on hand and update with general statistics,
- test via college associates,
- test via agriculture sector associations where they supply updated inventory figures as well as reflections on education needs, and,
- test via a more fundamental survey of a given agricultural sector.

IV Discussion and Recommendations

The need for improving agricultural vocational education in British Columbia is well recognized by the primary agriculture industry, the B. C. Department of Agriculture and agriculture educators within the province. Various attempts have been made to meet this need including the two year program at Northern Lights College, Dawson Creek, the certificate program at Malaspina College, Nanaimo, and the beef production course at Cariboo College, Kamloops. These attempts have met with, at best, only moderate success and it is quite apparent that a new approach is required. The remoteness of Dawson Creek to the rest of the British Columbia agricultural community, the lack of practical type courses at Malaspina, and the length of the course and apparent problems in regards to approach at Cariboo College have been discussed in the previous chapters.

The modular self-contained type of courses that have been described in this report should provide an approach to overcome many of these problems. The importance of keeping these courses as practical as possible cannot be over emphasized. A number of the basic courses, because they are applicable to many regions in the province, could be taught at one center in the province. Other specific courses could then be taught at other locations where farm workers require specific training. As discussed previously the Fraser Valley contains a high level of concentrated agricultural activity and it would seem advisable to concentrate and coordinate agricultural vocational education at this location.

Recommendation 1

That Fraser Valley College become the centre for agriculture vocational education in British Columbia, and that:

a) where feasible, specific courses be taught at other locations under the auspices of the local regional college to meet regional needs and that these regional

courses be coordinated through the Fraser Valley Regional College.

Recommendation 2

That the agricultural vocational education offered by this centre be primarily designed to train personnel for the farm labourer or farm foreman type of position. Recommended features of the program are:

a) that courses on farm management be made available as needs arise, but that these be limited to In-Service courses,

b) that courses be modular and self-contained to provide levels of training that are not dependent upon completion of an entire program,

c) that these modular courses be structured so that they can develop into a full pre-service program,

d) that a system of credits be developed and assigned to the various courses that would allow accreditation and the awarding of a certificate to a person completing a number of the courses.

The need to provide practical courses with the accent on "on farm training" has been mentioned many times in this report. The use of "institutional type farms" to provide this training has been employed in many instances. This type of facility is not considered desireable because of:

- the high cost of such a facility, both in terms of initial capitalization and operating expenses, particularly if it is to serve a broad range of agricultural activities, and,

- the difficulty of reproducing actual farm activities on such a unit.

For these reasons it is not recommended that Fraser Valley College have an "institutional type farm" associated with its

agricultural vocational programs.

However, to provide farm facilities for agricultural vocational programs, it is important that farm facilities be available and it is recommended that arrangements be made with farmers to use their facilities to accomplish this phase of the program. The arrangements necessary will vary from program to program and will require a flexible approach to the situation on the part of the College. The B. C. Department of Agriculture has indicated that they would be willing to assist in the development of a program to meet this requirement.

Apart from the "on farm training" it is important that the College have the necessary laboratory, greenhouse, and other facilities required to supplement the formal lecture portion of agricultural vocational education programs.

Recommendation 3

That the Fraser Valley College does not establish an "institutional type farm" to assist in the agricultural vocational education program, but that arrangements be made with existing farms to provide "on farm training".

The success of an agricultural vocational education program will be dependent, to a large extent, on the ability of the College to determine the needs of the region and respond to these needs with acceptable programs. To accomplish this it is deemed necessary that the Fraser Valley College employ a full time agricultural vocational educational coordinator to institute and coordinate these programs. This individual would not necessarily be responsible for the actual teaching of the courses, but would be responsible for determining the needs, assembling the desired resource personnel and directing the program. It is essential that this person have a good understanding of the primary agriculture industry and be able to provide appropriate liaison with the various segments of this industry.

The statistical package presented in this report

provides an information base on which to determine the needs and desires of the Fraser Valley College area with some reference to other areas in the province. However, it is necessary that this data be continually updated and supplemented with new sources of information as they become available.

The formation of an Agricultural Vocational Committee, to assist Fraser Valley College in the formation of the appropriate policies and programs, in regards to agriculture vocational education, would be of benefit by providing a broad spectrum of opinion and interaction. This committee should include representatives from the appropriate commodity groups, farm organizations, government, and other interested bodies. A similar committee is successfully employed at the B. C. Institute of Technology and their situation should be examined as a source of information in forming the Fraser Valley College committee.

The exact size and formation of the committee should be left to the agricultural coordinator, but it should include representations from the following:

1) Livestock commodity groups - dairy, beef cattle, hogs, etc.,
2) Farm Labour Pool,
3) B. C. Department of Agriculture.

Recommendation 4

That the Fraser Valley College employ a full time agriculture vocational coordinator whose responsibilities will include:

a) production of agriculture vocational education courses and programs in response to the needs within the area,

b) coordination of other agricultural vocational education programs into an overall program in response to the needs within the area,

c) continual upgrading of statistical information on the agriculture of the area,

d) continual testing of response to programs of agricultural vocational education.

Recommendation 5

That an advisory committee be formed that would meet on a regular basis to provide a broad spectrum of opinion on agricultural vocational education.

Within the Province of British Columbia agricultural education occurs at these levels:

1) Scientific Training - University of British Columbia
2) Technical Training - B. C. Institute of Technology
3) Vocational Training - this has not been formalized but it has been assigned to the regional colleges.

It is desirable that these areas of responsibility remain succinct to prevent overlapping and duplication of efforts. Overlapping and duplication is not only wasteful but it is also confusing to those persons who are to be served by these institutions. A person desiring an education in agriculture should be able to make a decision on which institution to enter, based on the type of work desired following graduation. To ensure that this separation of responsibility is maintained, and that liaison is established between the three levels of training, it would be desirable to establish a committee concerned with agricultural education in British Columbia. It would be appropriate, if Fraser Valley College becomes the dominant force in agricultural vocational education, to have Fraser Valley College represented on this committee. Because of the dominant role of the B. C. Department of Agriculture, it is important that they also be represented on this committee.

Recommendation 6

That a liaison committee on agricultural education in British Columbia be established comprising representatives from B. C. Department of Agriculture, University of British Columbia, B. C. Institute of Technology, and Fraser Valley

College. The responsibilities of this committee should include:

a) liaison and exchange of information,

b) examination of committee member programs to ensure that three levels of agricultural education, (e.g. scientific, technical and vocation are being dealt with adequately with a minimum of overlapping and duplication.

The importance of the B. C. Department of Agriculture, in regards to the primary agriculture industry, and the apparent conflicts between agricultural vocation education facilities at some locations outside the province, dictates that there be a close liaison established between the Department of Agriculture and Fraser Valley College. In some areas, (i.e. short courses, siminars, etc.), the extension activities of the B. C. Department of Agriculture, and to some extent, those of the University of British Columbia, and the B. C. Institute of Technology, provide input into agricultural vocational education. If Fraser Valley College is to carry out the responsibility for agricultural vocational education it is important, particularly in the Fraser Valley, that these extension activities be coordinated through the college. At the lowest level this coordination should involve advisement to the College, by these institutions and the B. C. Department of Agriculture, of planned programs so that the College can coordinate its activities with these programs. However, a more desirable approach would be to have the College involved in the planning of these programs so that they would become part of the overall vocational education program for the area.

Recommendation 7

That the Fraser Valley College act as a coordinator for the extension activities of the B. C. Department of Agriculture, the University of British Columbia, and the B. C. Institute of Technology, where the activities constitute agricultural vocational education.

In addition to the agricultural vocational needs of the primary agricultural industry there is also a need for educational programs for the part-time or hobby farmer. These can cover a wide range of topics such as pleasure horses (management and training), backyard gardening, organic farming, home food preservation, etc. An important role of the College will be to provide courses to meet this need.

Recommendation 8

That a series of courses be held to meet the needs of the part-time or hobby farmer.

The requirements of Native Indian People, for agricultural vocational education has been dealt with in this report. With the activity presently taking place at the Seabird Island Reserve, plans for development on one other reserve and the overall desire on the part of Native People to control and direct more of their own activities, these requirements should become more pronounced. It would not seem desirable to set up separate agricultural vocational education programs for Native People, since they will require the same training as others in vocational agriculture. However, because of the lack of exposure to agricultural practices on the part of most Native People, it would be beneficial to have an introductory program consisting of field visitations to expose them to current practice.

Recommendation 9

That agricultural vocational education programs for Native Indian People not be separated from the overall college program. The only change from this could be the use of a program to expose Native People to current agricultural practices.

Agricultural vocational education courses will be produced as a result of Fraser Valley College being asked to put on a course or the College officials deciding to put on a course. In both cases the validity of the course

should be tested to determine what response the course may have, and to obtain further information on the group that will be taking the program. The tests available include:

- test using base inventory data on hand and update with general statistics
- test via college associates
- test via agriculture sector associations where they supply updated inventory figures as well as reflections on education needs, and,
- test via a more fundamental survey of a given agricultural sector.

Recommendation 10

That Fraser Valley College carry out procedures to test the validity of agricultural vocational education courses that are planned or requested.

Appendix A

Agriculture Statistics for the Fraser Valley College District, Lower Mainland, and the Province

Appendix A-1

Number of Farms by Size

Lower Mainland[1]

Size of Farms	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Under 3	101	89	31	209	430	1,030	41.7
3 - 9	620	311	234	677	1,842	3,470	53.1
10 - 69	1,542	600	360	659	3,161	6,765	46.7
70 - 129	241	176	94	128	639	1,551	41.2
130 - 179	69	38	25	55	187	1,206	15.5
180 - 239	25	14	9	19	67	429	15.6
240 - 399	12	12	15	24	63	1,100	5.7
400 - 559	3	2	2	5	12	685	1.8
560 - 759	2	2	-	3	7	573	1.2
760 - 1119	1	1	1	2	5	607	0.8
1120 - 1599	-	2	-	1	3	390	0.8
Over 1600	1	1	2	1	5	594	0.8
Total	2,617	1,248	773	1,783	6,421	18,400	34.9

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

[1]Lower Mainland is made up of the Central Fraser Valley, Fraser-Cheam, Dewdney-Aloutte and Greater Vancouver Census Districts.

Appendix A-2

Number of Farms with Sales Over $2,500 by Product Type

Lower Mainland

Product Type	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Dairy	485	420	150	120	1,175	1,633	72.0
Other Livestock	244	97	66	138	545	2,501	21.8
Poultry	312	54	28	87	481	644	74.7
Field Crops	10	8	3	63	84	387	21.7
Fruits & Vegetables	200	88	17	169	474	1,948	24.3
Mixed	5	3	-	21	29	223	13.0
Other	118	22	54	181	375	1,289	29.1
Total	1,374	692	318	779	3,163	8,625	36.7

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Appendix A-3

Number of Farms and Total Acreage by Field Crop Type

Lower Mainland

Crop Type		Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Wheat	Farms	3	10	2	27	42	1,045	4.0
	Acres	242	271	30	1,373	1,916	109,312	1.8
Oats	Farms	30	25	9	86	150	1,617	9.3
	Acres	531	268	68	1,899	2,766	89,553	3.1
Barley	Farms	3	2	1	33	39	1,596	2.4
	Acres	164	103	3	1,049	1,319	195,701	9.7
Mixed Grains	Farms	7	5	1	8	21	199	10.6
	Acres	231	22	2	134	389	7,002	5.6
Rye	Farms	5	6	-	13	24	77	31.2
	Acres	22	61	-	144	227	1,419	15.0
Field Peas	Farms	2	1	1	-	4	55	7.3
	Acres	25	26	1	-	52	2,435	2.1
Field Beans	Farms	-	-	1	1	2	12	16.7
	Acres	-	-	1	1	2	180	1.1

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Appendix A-4

Numbers of Livestock and Poultry

Lower Mainland

Product Type	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Beef Cattle	25,154	11,288	8,565	18,717	63,724	470,016	13.6
Dairy Cattle	29,359	21,542	9,513	10,046	70,460	103,155	68.3
Pigs	20,684	5,080	3,448	9,745	38,957	78,621	49.6
Sheep	4,098	1,026	771	4,534	10,430	53,112	19.6
Horses	2,808	877	899	2,173	6,757	32,461	20.8
Goats	225	37	87	277	626	2,068	30.3
Hens & Chickens	4,948,905	481,296	152,477	891,689	6,474,367	7,861,488	82.4
Turkeys	361,411	2	70,402	255,732	687,547	805,158	85.4
Geese	954	476	632	1,827	3,889	9,017	43.1
Ducks	1,977	492	1,850	5,964	10,283	19,209	53.5
Mink	92,295	19,731	28,077	77,308	217,411	245,669	88.5
Rabbits	4,040	1,453	3,703	6,934	16,130	35,381	45.6

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Appendix A-5

Number of Farm Operators[1] by Age - Farm Population

Lower Mainland

Age of Farm Operator	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Under 25 years	27	12	9	24	72	209	34.5
25 - 34 years	350	156	87	195	788	2,041	38.6
35 - 44 years	726	334	189	468	1,717	4,705	36.5
45 - 54 years	703	360	233	456	1,752	5,317	33.0
55 - 59 years	313	140	87	224	764	2,225	33.5
60 - 64 years	238	127	66	158	589	1,716	34.3
65 - 69 years	138	69	57	125	389	1,176	33.1
Over 70 years	122	50	45	133	350	1,011	34.6
Totals	2,617	1,248	773	1,783	6,421	18,400	34.9
Total Farm Population	11,249	5,458	3,336	8,313	28,356	79,353	35.7
Total District Population	58,085	46,097	40,096	1,028,334	1,172,612	2,184,621	53.7

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

[1]One operator per census farm

Appendix A-6

Number of Farms by Value of Product Sold

Lower Mainland

Value	Central Fraser Valley	Fraser-Cheam	Dewdney-Alouette	Greater Vancouver	Lower Mainland Total	Province Total	District / Province %
Over $10,000	946	507	216	515	2,184	4,443	49.2
$5,000 - $9,999	199	64	48	126	437	2,015	21.7
$2,500 - $4,999	229	121	54	138	542	2,167	25.0
Under $2,500	1,241	555	452	998	3,246	9,739	33.3
Total	2,615	1,247	770	1,777	6,409	18,364	34.9

Source: 1971 Census of Canada, Agriculture British Columbia, Statistics Canada

Appendix B

Agriculture Associations for the Fraser Valley College District

Appendix B-1

Primary Agriculture Associations
for the Fraser Valley College District

Name	Secretary	Phone
B. C. Blueberry Co-operative Assn., 540 No. 6 Road, R. R. #3 Richmond, B. C.	J. W. Cronk (Manager)	278-2731
B. C. Broiler Growers' Assn. 7285 - 202nd St., R.R. #4, Langley, B. C.	John Shuttleworth	534-5449
B. C. Broiler Hatching, Egg Producers' Assn., 169 Columbia Rd., R. R. #5	V. H. Regier	853-2316
B. C. Broiler Marketing Board, Room 203, 5722 - 176th St., Surrey, B. C.	A. Stafford (Manager)	576-2855
B. C. Coast Vegetable Marketing Board, Room 202 - 1202 Bridge 1202 Bridgeport Rd., Richmond, B. C.	L. Jorgenson (Manager)	278-9541
B. C. Commercial Beekeepers' Assn., R. R. # 1, Kelowna, B. C.	Mrs. Dennis MacInnes	762-8970
B. C. Egg Marketing Board, P. O. Box 310, Abbotsford, B. C.		853-3348
B. C. Egg Producers' Assn., 48639 McConnell Rd., R. R. #2, Chilliwack, B. C.	W. J. Dyck	795-5488
B. C. Mink Producers' 326 Bradner Rd., R. R. #1, Abbotsford, B. C.	Mrs. Louise Peterson	
B. C. Sheep Breeders' Co-op Assn., R. R. #3, Vernon, B. C.	Mr. W. Lambe	542-9834

Appendix B-1 (Cont.)

Name	Secretary	Phone
B. C. Swine Breeders' Assn., 9525 Prest Rd., R. R. #2, Chilliwack, B. C.	Mr. Jack Reams	856-8878
B. C. Turkey Assn., 34919 Clayburn Road, Clayburn, B. C.	F. Wilkinson	859-8373
B. C. Turkey Marketing Board, 17674 - 56th Ave., Surrey, B. C.		574-7447
Fraser Valley Bush Bean Growers' Assn., 6750 - 6th Avenue, Delta, B. C. V4K 3N3	Bert Nottingham	
Fraser Valley Fruit & Vegetable Growers' Assn., Box 403, Sardis, B. C.	Mrs. John Friesen	858-4461
Fraser Valley Greenhouse Growers' Assn., P. O. Box 92, Haney, B. C.		
Fraser Valley Milk Producers' Assn., Box 9100, Vancouver 3, B. C. (6800 Lougheed Hwy., Burnaby, B. C.)		
Fraser Valley Mushroom Growers' Co-op Assn., 496 Prior Street, Vancouver 4, B. C.	J. W. MacPherson	681-3207
Fraser Valley Pea Growers' Assn., 6433 - 60th Avenue, Delta, B. C.	J. Harris	946-4279
Mainland Dairymen's Assn. 2205 S. E. Marine Drive, New Westminster, B. C.	F. V. Bradley	526-7971

Appendix B-2

Secondary Agriculture Associations
for the Fraser Valley College District

Name	Secretary	Phone
B. C. Coast Vegetable Co-op Assn., 1363 Vulcan Way, Richmond, B. C.	A. Barker (General Mgr.)	278-6234
B. C. Forage Crop Dehydrators' Assn., 46208 Airport Road, Box 69, Chilliwack, B. C.	W. M. Johnston (President)	
Chilliwack Artificial Insemination, 10119 Kent Road, Chilliwack, B. C.	John A. Peter	823-6114
East Chilliwack Co-op Assn., Box 371, Chilliwack, B. C.	H. Dick	792-4211
Fraser Valley Milk Producers's Assn., Box 9100, Vancouver 3, B. C. (6800 Lougheed Highway, Burnaby, B. C.)		
Pacific Co-op Union, P. O. Box 370, Mission City, B. C.	P. M. Egglestone	826-7582
Surrey Co-op Assn., 34080 Cyril Street, Abbotsford, B. C.	Eugene Kaulius	574-4112

Appendix C

Secondary Agricultural Industry for the Fraser Valley College District

Appendix C-1

Secondary Agricultural Industry for the Fraser Valley College District

Processing Plants

Empress Foods Ltd.,
311225 Fraser Way,
Clearbrook, B. C.

Fraser Valley Frosted Foods Ltd.,
P. O. Box 384,
Chilliwack, B. C.

Snowcrest Packers, Ltd.,
1925 Riverside Road,
Abbotsford, B. C.

Westvale Foods Ltd.,
33920 Lougheed Highway,
Mission, B. C.

York Farms Ltd.,
44440 S. Sumas,
Sardis, B. C.

Source: Fraser Valley Fruit and Vegetable Growers' Association

Appendix C-2

Secondary Agricultural Industry
for the Fraser Valley College District

Feed Mills and Fertilizer Depots

Buckerfields,
3013 Turner,
Abbotsford, B. C.

Burgess Feeds,
Agassiz, B. C.

Clearbrook Grain Milling Co. Ltd.,
33833 Enterprise,
Abbotsford, B. C.

Coast Agri Fertilizers Ltd.,
464 Riverside,
Abbotsford, B. C.

East Chilliwack Co-op,
Chilliwack, B. C.

Green Valley Fertilizer & Chemical Company Ltd.,
33815 McClure,
Abbotsford, B. C.

Ritchie Smith,
33777 Enterprise,
Abbotsford, B. C.

Surrey Co-op Assn.,
34080 Cyril,
Abbotsford, B. C.

Source: B. C. Feed Manufacturers' Association

Appendix C-3

Secondary Agricultural Industry for the Fraser Valley College District

Major Farm Equipment Dealers

Abbotsford Tractor & Equipment Ltd.,
Allis Chalmers - David Brown,
1919 Sumas Way,
Abbotsford, B. C.

Airport Farm Services,
29818 Huntingdon,
Abbotsford, B. C.

Avenue Farm Machinery Ltd.,
Badger MF GEHL
1521 C Street,
Abbotsford, B. C.

Beatty Farm Service Centre,
Specialists in Farm Mechanization,
7127 Vedder,
Sardis, B. C.

B. C. Silo & Tank Ltd.,
Zero Dairy Equipment - Alco Silos,
Clay Sileage and Manure Equipment,
2445 Railway,
Abbotsford, B. C.

Butler Bros. Equipment Ltd.,
Case - Leyland - Howard Rotavators,
44145 W. Yale,
Chilliwack, B. C.

East Chilliwack Co-op,
Dairy & Poultry,
46255 Chilliwack Central,
Chilliwack, B. C.

Friesen Electric Ltd.,
Crop Drying Systems,
Stock Waterers - Lincoln Welders,
Tractor Drive Alternators,
32032 S. Fraser Way, Clearbrook, B. C.
2095 Clearbrook, Abbotsford, B. C.

International Harvester,
44959 West Yale,
Chilliwack, B. C.

Appendix C-3 (Cont.)

Major Farm Equipment Dealers

J & D Farmers Dairy Service Ltd.,
33820 South Fraser Way,
Abbotsford, B. C.

Kish Equipment Ltd.,
Trucks - Farm Irrigation Systems,
44954 W. Yale,
Chilliwack, B. C.

Klassen Equipment Co. Ltd.,
45589 W. Yale,
Chilliwack, B. C.

New Holland Farm Equipment,
Abbotsford Tractor & Equipment Ltd.,
33166 S. Fraser Way,
Abbotsford, B. C.

Surge Tonganoxie Milkery Equipment,
Surge Dairy Equipment,
33716 King,
Abbotsford, B. C.

Valley Equipment Ltd.,
Fox Forage Harvesting Equipment,
New Idea Farm Machinery,
Brady Tillage Tools,
Chilliwack, B. C.

Van Zan Service,
Complete Repairs - Portable Welding,
5751 Abbotsford, - Mission Hwy., Mat.,
Abbotsford, B. C.

Appendix C-4

Secondary Agricultural Industry for the Fraser Valley College District

Hatcheries

Centennial Hatchery Ltd.,
Matsqui, B. C.

Coast Hatcheries Ltd.,
464 Riverside,
Abbotsford, B. C.

H & H Nick Chicks,
Fraser Valley Farms Ltd.,
2935 Gladwin,
Abbotsford, B. C.

Hambley, J. J. Hatcheries (B.C.) Ltd.,
2649 Commercial,
Abbotsford, B. C.

Western Hatchery Ltd.,
595 Hamm,
Abbotsford, B. C.

Westline Chick Sales,
505 Hamm,
Abbotsford, B. C.

Willow Hatchery,
Chilliwack, B. C.

Appendix C-5

Secondary Agricultural Industry for the Fraser Valley College District

Veterinary Practitioners

Clarkson, Leslie
P. O. Box 96,
Abbotsford, B. C. V2S 4N8

Estenson, R.
8337 Young Road S.,
Chilliwack, B. C. V28 4W8

Franke, J. M. E.
7273 Hurd Road,
Mission City, B. C. V2V 3H6

Goodale, L. R.
34971 Marshall Road,
R. R. 4,
Abbotsford, B. C. V2S 4W4

Gray, G. R.
Box 59,
Chilliwack, B. C. V2P 6H7

Hickling, G. E.
31787 Carlsrue Avenue,
Abbotsford, B. C. V2T 2J4

McCausland, H. D.
P. O. Box 251,
3410 McCallum Road,
Abbotsford, B. C. V2S 4N8

McFee, R. C.
314 Kipp Avenue,
Chilliwack, B. C. V2P 1Y8

Rendall, M. T.
8337 Young Road South,
Chilliwack, B. C. V2P 4N8

Upper, B. A.
8337 Young Road South
Chilliwack, B. C. V2P 4N8

Van de Velde, J. E.
2616 Ware Road,
Abbotsford, B. C. V2S 3E5

Source: B. C. Veterinary Medical Association