



Growing Knowledge



Ministry of
Agriculture
and Lands

Strengthening Farming Report

File Number 860.600-2 2008

The Economic Impact of Agriculture in Abbotsford

(MARKET BASED GOODS AND SERVICES)

2008



Executive Summary

Abbotsford has grown from a small town in the early 1900's to the fifth largest community in the Province. Agriculture has fueled that growth and continues to provide stable, expanding support for the local economy. This study estimates the scope of that economic impact.

The study follows similar methods employed in other economic impact studies. The Census of Agriculture provides much of the base information on the farming side and a local survey of agri-businesses in Abbotsford provided the information on the agri-business/value-added side.

The information collected indicates the agriculture sector in Abbotsford supports 11,300 full time equivalent jobs and \$1.8 billion in annual expenditures within the local economy.

**Agriculture in Abbotsford supports
11,300 full time jobs
and
\$1.8 billion in annual expenditures.**

Paid wages on farm, which includes wages to family members, averaged \$16/hour while the average annual salary in the agri-business/value-added sector was almost \$50,000/year.

Abbotsford has become a 'hub' of agribusiness activity in the Fraser Valley. The study found that 40% of the agri-business sector in Abbotsford is supported by farms outside of Abbotsford. Goods and services purchased by farms outside Abbotsford support \$ 450 million in annual expenditures and almost 2,000 fulltime equivalent jobs in Abbotsford.

**One out of every four private
sector jobs in Abbotsford is
supported by Agriculture**

Agriculture is the major private sector industry in Abbotsford. Agriculture supports one in every four private sector jobs and one in five jobs overall.



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Glossary of Terms

Farm Gate Sales

Farm gate sales are the value of primary agriculture production at the farm gate.

Ag-Specific Operating Expenses

Farms are businesses that incur a variety of operating expenses. Some are general business expenses such as accounting services, fuel, insurance and interest on loans. Other expenses are for goods and services specific to agriculture. For this report ag-specific businesses are those businesses that receive 90% of their revenues from the farming community. Examples include feed mills, farm equipment dealers and farm specific services.

Paid Wages

Data for paid wages comes from the Census of Agriculture and includes wages paid to family members and wages paid to non-family members for work done on the farm.

FTE Jobs

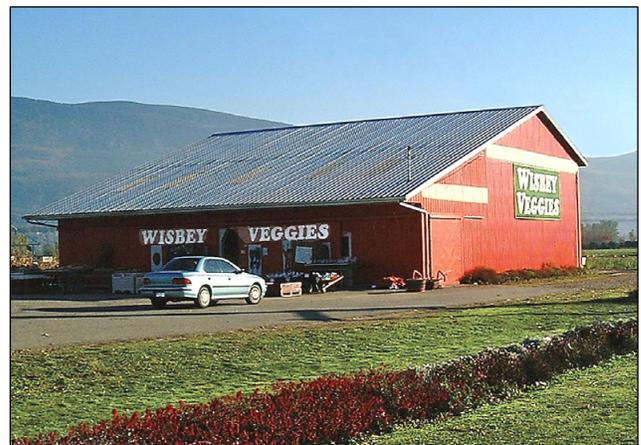
FTE stands for Full Time Equivalent jobs. The Census of Agriculture reports farm work in 'weeks of paid work'. This report considered 48 weeks of paid work as one FTE job. Statistics Canada considers 30 hours or more per week as a full time job.

Real Agriculture Output

Real agriculture output adjusts the annual farm gate sales for inflation. The 'real output' is a better measure of the growth in actual productive output than farm gate sales. The inflation rate for 'food', rather than the general inflation rate, is used to convert farm gate sales to output.

Value Added Sector

The value added sector, for the purposes of this report, represents the sector that further processes primary product received from the farm. This includes poultry, berry, dairy and vegetable processing. It also includes on-farm processing.



1. Introduction

The City of Abbotsford took its early form in the shadow of the forestry and brick making industries, but its growth, from a small resource town in the early 1900's to the fifth largest city in British Columbia today, has been fueled primarily by the steady and significant growth in the agriculture sector.

After the trees were cut down in the early 1900's, the settlers soon realized that the mild climate, excellent soils and abundant water of the Fraser Valley made it an ideal area for farming. Dairy, poultry, vegetables and small fruits production all flourished. In the late 1900's greenhouse and nursery emerged as very competitive sectors in this area.

Real agriculture output has grown steadily in Abbotsford. Over the last 15 years farmers have increased the real agriculture output by two and a half times from a fixed land base.

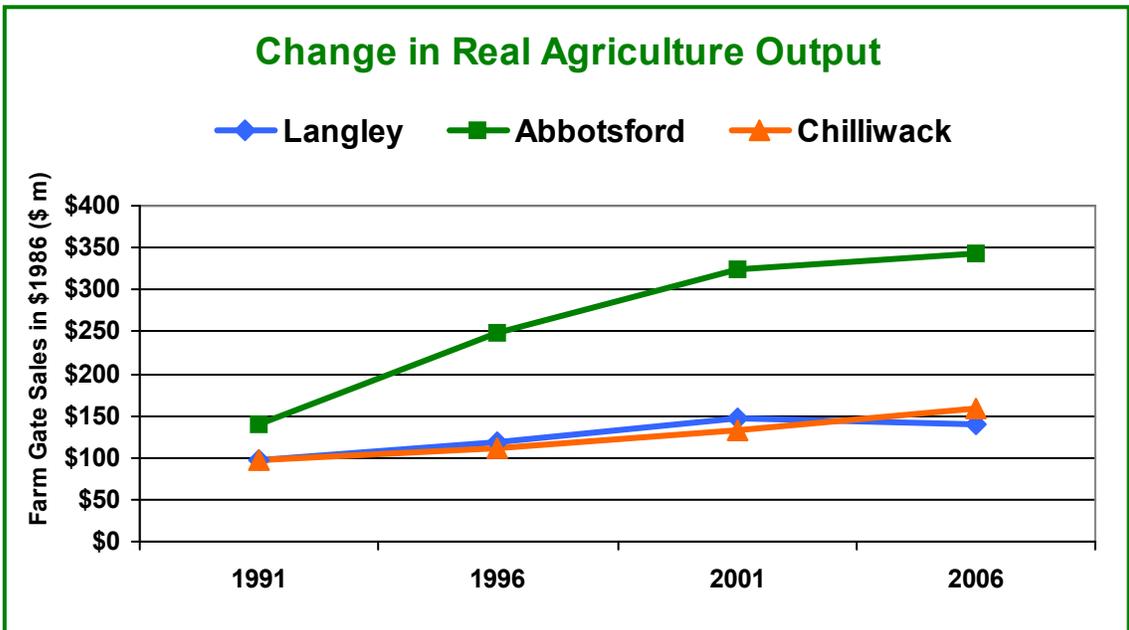


Figure 1.1 Change in Real Agriculture Output

Abbotsford is the dominant agriculture community in BC, and Canada, from a farm gate sales perspective. Abbotsford has the highest farm gate sales in BC, more than twice as high as Chilliwack, the second largest municipality. Abbotsford also has the largest farm gate sales per hectare in Canada – over three times the next highest area.

Farm Gate Sales per Acre in Production			
	Area in Acres	2001 Sales	Sales/Acre
Abbotsford	61,000	\$452,000,000	\$7,410
Niagara Regional District	333,000	\$511,000,000	\$2,195

In 2001 Niagara Regional District had the highest average sales per acre in Ontario.

This report looks at the expenditures and jobs in Abbotsford that rely on the agriculture sector. It also estimates the impact of the agri-business sector in Abbotsford becoming the 'hub' of agri-business in the valley.

The report relies heavily on methodology developed by other researchers and data from the 2006 Census of Agriculture for the farm sales, jobs and expenditures. Estimates of the size and scope of the agri-business were developed from a survey of the agri-business sector in Abbotsford.

The report is not designed to be a comprehensive report on agriculture in the community but to simply estimate the economic impact. A general methodology is provided in Section 2 followed by the results in Section 3. Some of the results are discussed further in Section 4. Section 6 includes the details of the Economic Impact of the Agri-Business Sector in Abbotsford.



2. Methodology

The goal of an economic impact study is to answer the general question; what would be the impact on a community if a specific industry ceased to exist? For our look at agriculture in Abbotsford, the specific question is how many jobs would be lost and how much in expenditures would be lost if farming ceased to exist in Abbotsford?

Most economic impact studies rely on a survey of the industry for their information. With primary agriculture production, Statistics Canada does a census every five years that provides very reliable information on revenues, employment and operating expenditures in the farming community.

Economic impact studies also look at the secondary or spin-off benefits within a community. When a farm worker uses his/her wages to purchase goods in the community it creates economic activity that spreads through the community. When businesses use their revenues to purchase goods and services from within the community, this creates further economic impact in the community. These 'trickle down' benefits are termed 'secondary benefits'.

The size of the industry, and the central location in the Fraser Valley, has contributed to Abbotsford becoming a 'hub' for agri-business and value-added business in the Fraser Valley. This unique aspect of agri-business in Abbotsford means the size of the agri-business and value added sector is larger than in other farming communities. To simply estimate the 'secondary benefits' of a typical agriculture community would miss a large part of the agri-business and value added sector in Abbotsford

The Abbotsford Chamber of Commerce Agriculture Committee partnered with the Ministry of Agriculture and Lands to conduct a survey of the agri-business sector in Abbotsford. The sector was divided into different types of agri-business and each type was surveyed separately. The survey was very short, only asking the businesses to provide gross revenues, total payroll and number of full and part time employees. The detailed results of the agri-business survey are in the Appendix (p.11).

Once the total size of the agri-business sector is known, it was possible to estimate how much of this sector was supported by Abbotsford farms and how much was supported by farms outside of Abbotsford. The operating expenses, reported in the Census of Agriculture, were used to estimate how much of the agri-business sector was supported by Abbotsford farms.¹

There is a large body of work that estimates the ‘secondary’ impact of various industry sectors. Agriculture tends to have a high secondary impact on a local community because much of the farm labour lives in the community and many of the farm expenses occur within the community. Estimates of the secondary impacts of agriculture activity have ranged from .8 times the primary sector to 1.9 times the primary sector (see Figure 4.1 on page 16).

This study uses the more conservative 1.0 times the primary sector. This means that every full time job in primary production and every dollar in farm gates sales generates economic activity that supports another full time job and another dollar of expenditure in the city.²

The estimates in this report tend to be biased to the conservative side for the following reasons:

- the low end of the range of commonly used multiples for secondary impacts was used, particularly on the jobs side,
- the survey of agri-business only included the business with 90%³ of their business serving agriculture. The survey included agri-businesses from popular directories and the phone book plus ones well known to Chamber Agriculture Committee members. It is quite likely some were missed.



¹ The categories of agri-business in the survey were matched to the same categories in the Census of Agriculture report on operating expenditures. So for example if farmers in Abbotsford reported spending \$10 million on fertilizer and agribusiness reported selling \$15 million in fertilizer then \$5 million must have been purchased by farms outside of Abbotsford.

² For example farm families and farm workers spend their wages and income on goods and services in the community. This supports businesses whose employees also buy goods and services within the community and so on and so on.

³ This was chosen to focus on the agri-businesses whose primary role it was to serve the agriculture sector.

3. Results

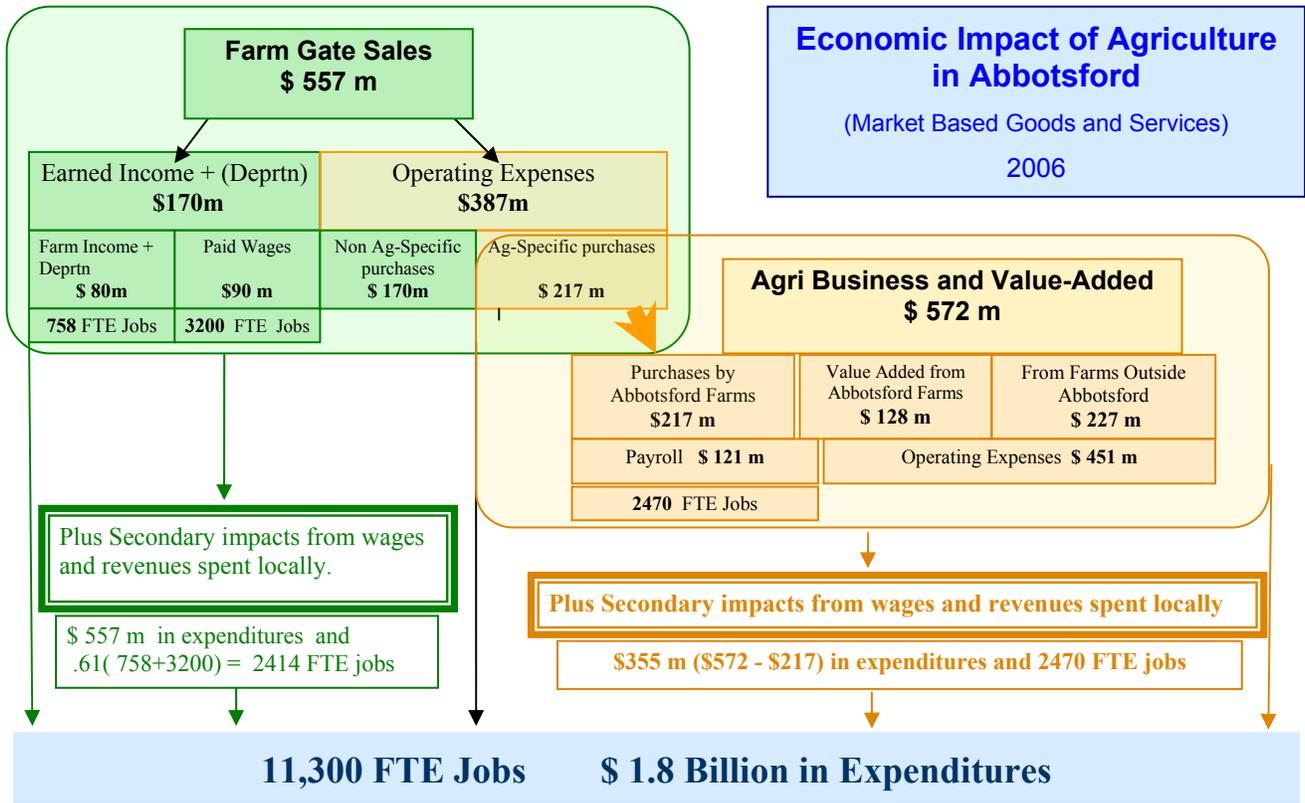


Figure 3.1 Flow Chart of Economic Impact of Agriculture in Abbotsford

Figure 3.1 summarizes the results in a flow chart. The flow chart is divided into 2 streams of economic activity; the on-farm economic activities (green) and the agri-business economic activities (orange). The challenge in Abbotsford is to keep these streams separate and to try to ensure that areas where they overlap are not double counted.

On the farm side, Abbotsford farms produced \$557 million in farm gate sales. The use of those sales can be broadly split into funds to cover operating expenditures and funds to cover wages/income/depreciation. Some of the operating expenditures are for non ag-specific goods and services (\$170 m) such as office expenses, interest and other business services. The operating expenses on ag-specific supplies such as fertilizer, seed, equipment repair and others (\$217 m) are part of the agri-business sector so have been coloured orange and is the flow of economic goods and services that can potentially be double counted.

It makes no difference to the final estimate which side the jobs and expenditures from ag-specific expenditures are allocated. For this study the jobs in the ag-specific area are grouped with the agri-business sector and the revenues are grouped with the farm sector.

The following is a explanation of the flow chart. The farm side generated \$557 million in farm gate receipts that can be divided into \$387 million in operating expenses and \$170 million in wages and income (including depreciation). Paid wages of \$ 90 million supported 3200 FTE jobs while farm income supported 758 full time

equivalent farm operators. Secondary impacts of this economic activity are estimated at an additional \$557 million in expenditures. The secondary jobs would be an additional 3958 but must exclude those from the agri-business expenses as they will be included in the agri-business side. The agri-business expenditures account for (\$217/\$557) 39% of the farm side so the secondary impact on jobs on the farm side are 61% of 3958, or 2414. The agri-business side, minus revenues from Abbotsford farm ag-specific operating expenses, generates \$355 million (\$572 - \$217) in revenues and supports 2470 FTE jobs. The secondary impacts add an additional \$355 million in expenditures and 2470 FTE jobs.

The total economic impact comes from adding the direct revenues, \$557m from the farm side and \$355 million from the agri-business and doubling it to cover secondary impacts. The total is [$\$557 + \$355 + \$557 + \$355 =$] \$1,824 million or approximately \$ 1.8 billion.

The total jobs supported is the sum of the direct jobs, 3958 from the farm side and 2470 from the agribusiness side, and the secondary jobs. The secondary jobs from the agri-business side are 2470 while the secondary jobs from the farm side are 61% of the direct jobs (61% of 3958) or 2414. The total jobs supported by agriculture is ($2470 + 3958 + 2470 + 2414 =$) 11,312.



4. Discussion

Forty percent of the agri-business sector is supported by farms outside the City of Abbotsford. Farms from outside Abbotsford spend \$227 million in Abbotsford on farm based goods and services. This supports \$ 450 million in economic activity and almost 2000 FTE jobs in Abbotsford. This economic benefit to Abbotsford results from its central location in the valley and its high level of agriculture output.

Farm based jobs, including wages paid to family members, average over \$28,000/year (\$ 16.75/hr⁴) and agri-business jobs averaged \$49,000/yr. The farm workforce has changed from what is often perceived as low paid seasonal work to more full time work at competitive wage rates. In 2006, 67% of paid wages on farms in Abbotsford was for year round positions.

There are close to 59,000⁵ fulltime equivalent jobs in Abbotsford and 46,000⁶ are in the private sector. This means the agriculture sector supports almost one in every five jobs in Abbotsford. If public sector jobs are excluded, agriculture supports one in four private sector jobs.



⁴ Based on 35 hours per week and 48 weeks per year

⁵ B.C. Labour Force Stats. 2000.

⁶ B.C. Labour Force Stats. 2000.

The results are similar, in relative terms, to other agriculture economic impact studies. Below are some comparisons:

COMPARISONS				
Location	Multiple on Expenditures	Multiple on Jobs	Ag Related Sales as % of Farm Gate	Ratio of Ag related jobs to Farm jobs Sales/Acre
Wisconsin	1.8	2.3	na	na
Simcoe	2.0	2.0	40%	0.47
Huron County	2.9	2.8	40%	2.82
Niagara	2.0	na	na	Na
PRSDG	na	na	42%	0.76
Abbotsford	2.0	2.0	38%	0.62

Figure 4.1 Comparison of Multipliers and Results with Other Studies

The multiples used to estimate the secondary or trickle down impact of jobs and expenditures from the primary sector are on the conservative end of multiples used for estimates in other studies⁷. The relative size of ag-related sales and the ratio of jobs in the agri-related sector as compared to the farm jobs is similar to other studies. The Huron County study appears to be different than others. This may be because they used secondary data sources to make their estimates rather than survey the industry directly.



⁷ There is no particular reason to do this other than to ensure the estimates are considered reasonable and not over stated.

5. References

B.C. Stats. *Community Facts*. Abbotsford. 2006.

B.C. Stats. Labour Force Stats. *Trends in Full and Part-time Employment in B.C.* Nov. 2000.

Cummings, Harry and Murray, Don. *A Kinder, Gentler, Simpler Economic Impact Assessment Process*. University of Guelph. Power point presentation.

Deller, Steven, C. *Wisconsin and the Agriculture Economy*. Staff Paper Series, University of Wisconsin-Madison, Department of Agricultural and Applied Economics. 2004

Harry Cummings and Associates. *Economic Impact of Agriculture on the Economy of Simcoe County*. 1999

Regional Municipality of Niagra, *Regional Agriculture Economic Impact Study*. 2003

Statistics Canada. *Census of Agriculture. Small Area Data for British Columbia*. 2006.

6. Appendix - The Agri-Business Sector in Abbotsford

6.1 Background

Abbotsford has the largest agriculture production in British Columbia, and twice that of the next highest communities of Chilliwack and Langley. This concentration of farming activity in the central Fraser Valley has resulted in Abbotsford becoming the ‘hub’ for agri-business in the area. Consequently the standard approach to estimate the economic impact of agri-business, as a multiple of primary production, is not applicable.

This study was conducted to estimate the size of the agri-business sector in Abbotsford and in doing so estimate the ‘hub’ effect on the sector in Abbotsford. The Abbotsford Chamber of Commerce Agriculture Committee worked closely with the Ministry of Agriculture and Lands on the project.

The results of this report feed directly into an estimate of the total economic impact of the agriculture sector in Abbotsford.



6.2. Methodology

The goal of the study was to estimate:

1. the size of the agri-business sector in Abbotsford, and
2. the portion of the sector supported by farmers in Abbotsford

The basic approach was to identify the different agri-business activities in Abbotsford, survey the members to obtain the basic economic information (revenues, payroll and jobs) and then aggregating the results to estimate the total agri-business sector.

The definition of the agri-business sector used in this study is:

Businesses that conduct 90% or more of their business with the agriculture sector.

Census of Agriculture information on the operating expenditures reported by Abbotsford farmers was used to estimate the portion of the agri-business sector supported by farms in Abbotsford. The size of the value-added sector that is supported by Abbotsford farm gate products was estimated using a combination of Census of Agriculture data and expert opinion from Ministry of Agriculture and Lands production specialists. The balance of the sector is supported by farms not in Abbotsford.

A copy of the survey is attached. The types of agribusiness in Abbotsford were identified and surveyed separately by having slightly different colour and backgrounds on the survey form. The survey form is included in Section 6.5 (page 17). The types and numbers of agribusinesses surveyed is listed on the following page.

CATEGORY	NUMBER
Feedmills / Fertilizer	5
Farm Equipment	11
Machinery Repair	12
Farm Gate Services ⁸	8
Agriculture Supplies	13
Veterinary Services	2
Industry Associations/Gov	26
Packaging/Processing Berry	6
Packaging/Processing Dairy	3
On-farm Dairy Processing	2
Packaging/Processing Poultry	5
Packaging/Processing Vegetables	2
Packaging/Processing Other	10
Poultry Hatcheries and Supplies	7
Farm Construction -Builders	7
Farm Construction - Materials	5
Livestock Hauling	5
Other Services	20



It is interesting to note that there are 25 industry associations headquartered in Abbotsford. The Ministry of Agriculture and Lands also has a large office in Abbotsford.

Table 6.2 Agri-business Categories and Survey Distribution



⁸ Farm gate services refer to services that are provided on the farm such as mobile machinery repair and dairy equipment services.

6.3 Results

Survey responses indicated the following economic activity in the different sectors:

ECONOMIC ACTIVITY					
Category	Total Revenue	Minus Farm Gate Input	Net Value-Added Agri Business	Total Payroll	FTE Jobs
	(\$1,000's)		(\$1,000's)	(\$1,000's)	
Feedmills / Fertilizer	\$ 92,293.		\$ 92,293.	\$ 7,353.	205
Farm Equipment	\$ 30,067.		\$ 30,067.	\$ 1,279.	360
Machinery Repair	\$ 3,000.		\$ 3,000.	\$ 700.	12
Farm Gate Services ⁹	\$ 21,762.		\$ 21,762.	\$ 5,122.	91
Agriculture Supplies	\$ 18,980.		\$ 18,980.	\$ 4,745.	73
Veterinary Services	\$ 4,400.		\$ 4,400.	\$ 1,400.	28
Industry Associations (incl. Gov't)	\$ 30,481.		\$ 30,481.	\$ 11,003.	168
Processing - Berry	\$ 62,300.	\$ 44,500.	\$ 17,800.	\$ 4,000.	130
Processing - Dairy	\$ 20,000.	\$ 8,000.	\$ 12,000.	\$ 5,200.	107
Processing - Poultry	\$193,390.	\$ 65,000.	\$ 128,390.	\$ 17,048.	440
Processing - Vegetables	\$ 55,355.	\$ 27,000.	\$ 28,355.	\$ 6,269.	112
Processing - Others	\$ 18,000.		\$ 18,000.	\$ 4,500.	90
Poultry Hatcheries and Supplies	\$ 53,750.		\$ 26,750.	\$ 9,417	288
Farm Construction -Building	\$ 8,100.		\$ 8,100.	\$ 1,005.	24
Farm Construction - Materials	\$ 49,500.		\$ 49,500.	\$ 9,150.	149
Livestock Hauling	\$ 500.		\$ 500.	\$ 350.	6
Other Farm Services	\$ 53,466.		\$ 53,466.	\$ 12,482.	184
	\$716,244.	\$144,200.	\$ 570,844.	\$121,043.	2,467

Table 6.3a Survey Results

Farm Gate Estimates were obtained from the Census of Agriculture and from production specialists in the Ministry of Agriculture and Lands.

To better understand the 'hub' impact on agribusiness in Abbotsford it is important to separate the total industry into the portion that is generated by purchases by Abbotsford farmers, the portion that represents value added processing of products from Abbotsford farms and the portion that is supported by farms outside of Abbotsford.



⁹ Farm gate services refer to services that are provided on the farm such as mobile machinery repair and dairy equipment services.

In the Census of Agriculture, Abbotsford farmers reported the following expenditures on items supplied by the agri-business sector.

EXPENSES	
Poultry Hatchery	\$27.0 m
Feed and Supplies	\$104.2 m
Fertilizer and lime	\$15.7 m
Pesticides	\$5.7 m
Seed and plant	\$15.1 m
Vet Supplies	\$5.4 m
Custom work	\$23.0 m
Machinery repair	\$12.8 m
Building Repair	\$7.8 m
Total	\$217 m

Table 6.3b Operating Expenses Reported by Abbotsford Farms

The value-added portion of the processing of produce grown in Abbotsford accounts for approximately \$128 million¹⁰ dollars. Adding the \$217 m in direct purchases and the \$128 in value added from Abbotsford farms leaves a balance of \$227 m of the agri-business sector supported by farms outside of Abbotsford.

In summary:

A) Goods and Services purchased by Abbotsford farms	\$ 217 million
B) Value-added processing of products of Abbotsford farms	\$ 128 million
C) Goods and services and processing for non-Abbotsford farms	<u>\$ 227 million</u>
Total Agri-business Sector	\$ 572 million

Below is a graphical representation of the source of business for the agri-business sector.

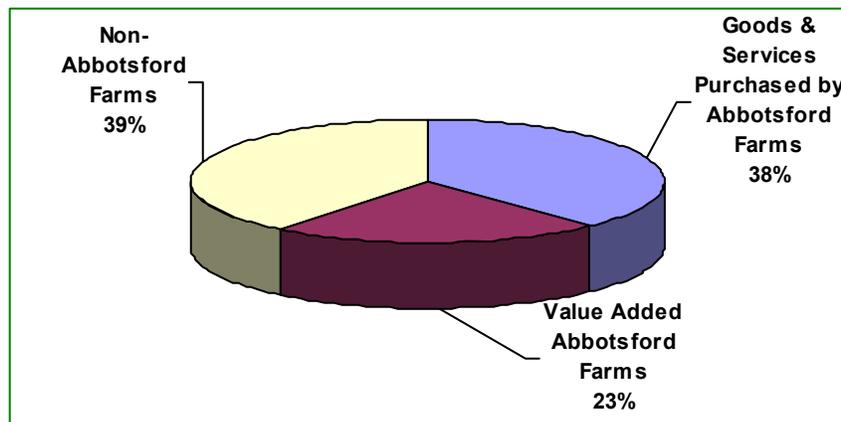


Figure 6.3 Source of Business for Abbotsford Agri-business Sector

Note: The revenue for approximately 40% of the agribusiness sector in Abbotsford originates from farms outside Abbotsford.

The agri-business sector reported a payroll of \$121 million supporting 2470 full time equivalent jobs. This represents an average salary in the agribusiness sector of almost \$50,000/year.

¹⁰ See section 6.4 for the calculation of this estimate.

6.4 Detailed Calculations

PRODUCTION and VALUE-ADDED CALCULATIONS						
Berry input costs (grower value)						
		Acres in Production	Avg Yield in lbs	% Processed	Grower Price	Total Wholesale value (\$million)
	Raspberries	4043	7500	0.98	\$ 0.5	\$14.80
	Blueberries	3867	8000	0.6	\$ 1.6	\$29.70
						\$44.50
Berry value added						
					Value Added/lb	Total Value Added (\$m)
	Raspberries	4043	7500	98%	\$0.35	\$10.40
	Blueberries	3867	8000	60%	\$0.40	\$7.40
						\$17.80
Dairy Processing – Proportion of Wholesale Value that is Primary Production						
	B.C. Milk Producers					
		Farm cash receipts		\$400 m	40%	
		Wholesale Sales Volume		\$ 1,000 m		
Poultry Processing (portion from Abbotsford farms)						
	Commodity	B.C. Production	Abby Share of Production	Abby Share of Processing	Abby Farm Gate Share	
	Broiler	\$ 258 m	44%	3%	\$ 4 m	
	Turkey	\$ 32 m	53%	90%	\$ 15 m	
	Eggs	\$ 97 m	53%	90%	\$ 46 m	
	Total	\$ 387 m			\$ 65 m	
Poultry Processing Value Added (portion from Abbotsford Farms)						
	Commodity	Value Added in B.C.	% Abby			
	Broiler	335.4	4.4			
	Turkey	41.6	19.8			
	Eggs	126.1	60			
	Total	503.1	84.2			

Abbotsford Farmers Share of Value added processing						
	Commodity		Abby Share	\$ m		
	Berry		100%	\$ 18		
	Dairy		100%	\$ 12		
	Veg		50%	\$ 14		
	poultry			\$ 84		
		Total		\$ 128		
JOBS						
Farm operator jobs	1 job for all farms over \$250,000 in annual sales		693			
	.5 jobs for farms \$100,000 - \$250,000		65			
		Total	758			
Farm jobs	Direct	paid wages	3200			
		Farm jobs	758			
			3958			
Secondary impact(exclude Agri-Specific portion of sales)	.61 X 3958		2414			
		Total farm	6372			
Agri-business Jobs	Direct		2470			
	Secondary		2470			
		total agri-business	4940			
Total jobs			11312			
Work Force Comparison	Employees		65,645			
	Conversion to FTE	(.9 - 20%) PT - 1FTE /2PT	59,080	/11300	5	
	Minus Public Sector		12340			
	Private sector		46,740	/11300	4	
EXPENDITURES						
					(\$ m)	
	Farm Gate Sales				\$557	
	minus - Ag Specific purchases				\$217	
	Agribusiness				\$572	
		Total Revenues			\$912	
	Secondary Revenues				\$912	
	Total Economic Impact				\$1,824	

6.5 Survey Form



Agri-Business / Agri-Industrial Economic Impact Survey

1. What type of agri-business is your firm? _____
(i.e. feed, fertilizer, processing, farm equipment)

2. What were your total revenues in 2007? \$ _____
(estimate to the nearest \$10,000)

2. What portion of this revenue was from the farming sector? _____ %
(estimate within 5%)

4. What was your total payroll in 2007? \$ _____
(estimate to the nearest \$1,000)

5. How many full time employees did you have in 2007?
(250 days of work = 1 full time employee) _____

Thank You

Results will be posted on the Chamber web site

www.abbotsfordchamber.com