Fresh Thinking for a Competitive Canada:

Growing the Five Billion Dollar Canadian Horticultural Production Sector

CHC / CCH

Canadian Horticultural Council
Conseil canadien de l'horticulture

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Growing the Five Billion Dollar Canadian Horticultural Production Sector

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Horticulture is One of Canada's Largest Agri-Food Industries

The Canadian horticultural sector is one of Canada's largest agri-food industries. For example, Canadians spend more than $14 billion on fruit and vegetable products in retail food stores, which accounts for 25% of all retail food expenditures. This is before considering expenditures on Canadian wines of at least a half a billion dollars, the more than $3 billion of horticultural products purchased by Canada's food service sector, consumer expenditures on floricultural and nursery products in many market channels, and the $3 billion in exports of horticultural products.

Horticulture is one of the larger production sectors, with over $5 billion in cash receipts and is the major source of cash receipts in BC and PEI, and accounts for more than one-half of crop receipts in all provinces outside of the prairies. As in all farm sectors, the horticultural sector has been affected by globalization, strengthening of the Canadian dollar, increasing regulatory costs, and concentration at each end of supply chain.

The Sector Generates Significant Economic Contributions

Production, packing and processing of Canadian horticulture crops generates significant contributions to the Canadian economy. As a result of the extensive linkages of horticultural production, packing and processing through the economy, $29 billion of economic activity is generated. This economic activity generates full time employment for 200,000 full time workers and associated wages and salaries of $8 billion. The value added, or gross domestic product (GDP), created by this part of the sector is over $13 billion, with slightly more than half of this GDP due to production of horticultural crops, and the remainder due to packing and processing. Total taxes generated by the production, packing and processing of Canadian horticultural products is $5.8 billion to the three levels of government, with this tax revenue contribution greater than what the production sector receives in gross revenue in any year. Considering only the horticulture production sector across Canada, just under $3 billion in tax revenues are generated for government.

These Economic Contributions Occur in Rural Areas

Of greater significance than the economic contribution is that the economic activity is an integral part of the rural economy, with 13,850 farms specializing in horticultural crop production across the country. Crop production occurs in rural Canada, and the packing and processing of horticultural crops also predominates, if not exclusively, in the rural sector. The over 90,000 full time jobs directly created by crop production, packing and processing of horticultural crops are jobs in the rural economy. These jobs are essentially held by the employees of firms engaged in production, packing and processing. Moreover, the vast majority of the other 110,000 full time jobs (for a total of 200,000 full time jobs) that are generated throughout the economy are also in rural Canada, with these jobs resulting from goods and services purchased as a result of the production, packing and processing of horticultural crops. The major portion of the $8 billion in wages and salaries is spent by the associated families in rural economies on goods and services.

Horticulture Contributes to the Health and Wellness of Canadians

Another important contribution of the horticulture sector is to the health and wellness of Canadians. Fruit and vegetable products as part of one's daily diet have been proven to be a vital part of an overall healthcare solution. Healthier Canadians place less demand on publicly funded health care programs. Furthermore, nursery and floriculture products also greatly affect the wellness of Canadians, which can also reduce health care costs.

i EXECUTIVE SUMMARY

Horticulture is a Solutions Provider to Canadians

The horticultural sector is a solutions provider in many dimensions. This includes providing up to 200,000 full time jobs in the rural economy, generating significant economic activity in rural Canada, which results in up to $13 billion of GDP in the rural economy across Canada, and $5.8 billion in revenues to government each year. There are also a number of non-economic solutions provided by the sector. One is that the food products provided to Canadians are healthy products and contribute to the health and wellness of Canadians. Fruits and vegetables have natural attributes that have been shown to help prevent disease, including phytochemicals, fibre, vitamins, and other required nutrients. Combining all of these elements, the horticulture sector can be viewed as a contributor to Canada's food security, the health of Canadians, and as a safety net in rural areas.

Opportunities for the Sector

The production, packing and processing sector only accounts for an estimated 40% of the fruit and vegetable products consumed by Canadians, and closer to 20% for fresh produce. A significant opportunity exists for the sector to provide more product to Canadians, and at the same time contributing to the health of rural economies, the health of Canadians, Canada's food security, and to help pay for needed government programs.

Strategic Investments and Alignments to Facilitate Growth

The production sector has a goal of doubling the output of horticultural products from $5 billion to $10 billion by 2020. This 4.8% annual growth is achievable, and can be greatly assisted through strategic investments and alignments; these include:

- **Initiatives to support local food supply**, which includes origin promotion and buy-local programs, school snack/lunch programs, and government agency food procurement programs. These initiatives increase Canada's food security, have a positive impact on the environmental footprint, and further enhance the contribution of horticulture to rural economic activity and jobs.

- **Canadian content retail shelf space for produce**, which includes requirements that food retailers must meet minimum requirements of Canadian grown food products in each broad food category. In the produce section, this initiative can require, for example, that 25% of fresh fruit and 40% of fresh vegetable (including packaged shelf stable products) shelf space is devoted to Canadian produce in each store banner, with an increase in Canadian content requirements based on regional supply availability of produce meeting required minimal standards. This initiative enhances Canada's food security by ensuring that retailers merchandize a minimum volume of Canadian product. Rural Canada will also benefit through associated economic contributions of the horticulture production and packing sector. Tax incentives can be considered for retailers that exceed minimum content requirements.

- **Canadian content requirements and labeling for processed fruits and vegetables**, which includes requirements that Canadian processed products must have a defined amount of Canadian grown content for products that are grown in Canada. This also includes a change in labeling that requires produced in Canada to mean that the product was grown and processed in Canada, as required for VQA wines. Imported raw materials that are processed and packaged in Canada can carry labels that indicate, "processed and packaged in Canada using imported product". This initiative will contribute to an expanded demand for Canadian grown and processed fruits and vegetables.

- **Expanded seasonal labour programs**. The horticultural sector has benefited from the Seasonal Agricultural Worker Program. This program provides access to labour that is not available in Canada and allows for a more competitive cost structure compared to products arriving from offshore. Modifications to specific government programs can further improve competitiveness by eliminating required EI and CPP contributions on offshore labour. As well, to attract more local labour, by not having EI and CPP contributions apply on the first two months of seasonal labour supplied by Canadian residents will result in more local residents seeking short-term employment in the horticulture production sector, which further increases the sustainability of these rural areas.

- **Research and development on value added and differentiated products**, which allow the sector to compete on value added and differentiated products versus commodity products. This investment by government enhances the competitiveness and sustainability of the sector as it competes with products arriving every day from off-shore low cost commodity suppliers.

- **Removal of bureaucratic barriers to progress**, which includes labeling issues, harmonization issues, PMRA crop protection issues, and other regulatory barriers that have been highlighted by the horticulture sector over a number of decades. Removing these unnecessary barriers supports sector growth through lower costs, improved access to inputs, better label information for consumer choice, ability to list health claims, and improved management flexibility. Government has a role, and in fact a moral obligation to facilitate such changes.

- **Alignment with major health and disease prevention organizations**, which is an industry initiative to further expand the linkage between fruit and vegetable consumption and healthy living. The produce industry has a successful "5 to 10 a day! For better health program". Other programs linked with disease prevention can contribute to an increase in fruit and vegetable consumption. Other initiatives can ensure that a major part of this benefit accrues to Canadian products and the rural areas where the industry is located. In short, the sector must capitalize on its inherent capital as a solutions provider to the health and wellness challenges facing Canada. Sound investments in agriculture will mitigate the need for increased expenditures to address health and wellness issues.

- **Executive dialogue with the food retail industry**, which includes dialogue between senior executives in food retail, the horticulture industry, and the most senior levels of government. These dialogues have been shown to be successful in having the supply chain work towards common goals. Issues such as the impact of buy-local programs and Canadian content provision on local economic activity and jobs created should be discussed to show the win-win outcomes associated with retailer support and commitment. As well, the industry can illustrate how local sourcing can reduce in-store wastage and improve overall margins, and how the industry through alliances can create critical mass to supply the needs of retailers through their distribution centers.

The Canadian horticultural sector can offer significant contributions to the health and wellness of Canadians, and is investing for growth in a strong future. The goal of doubling the value of farm-gate production to $10 billion over the next 14 years is achievable; just as the sector output doubled its size between the early 1990's to the mid-2000's. This growth will be more certain through strategic investments undertaken by government. By doing so, a win-win outcome is assured as the horticulture sector is stronger and generates more wealth in rural economies, provides more tax revenues to government, is less dependent on ad hoc government programs, is part of a preventative health care solution, and further contributes to the wealth, health and wellness of Canadians.

The Canadian Horticultural Council

The Canadian Horticultural Council (CHC) is a voluntary, not-for-profit, national association representing the dynamic and diverse sector of horticulture. Across Canada, CHC members are primarily involved in the production and packing of over 120 horticulture crops comprised of fruit, vegetables, flowers and ornamental plants. The CHC has been committed to promoting the interests of its members since 1922.

CHC Mission

The CHC's mission is an unwavering commitment to advance the growth and economic viability of horticulture by encouraging cooperation and understanding on key issues, thereby delivering unified and clear representation to governments and other national and international parties.

CHC Membership

Members include provincial and national horticultural commodity organizations representing more than 20,000 producers in Canada, as well as allied and service organizations, provincial governments and individual producers and packers.

CHC Mandate

The CHC has a clear mandate to be a strong and active voice on behalf of the sector through communicating priority issues to key federal and provincial decision makers, as directed by membership.

CHC Focus

The priority issues for the membership of CHC include an extensive range of concerns, such as:

- *Finance and Human Resources:*
  - Promote equitable business risk management programs for all horticultural producers in Canada;
  - Ensure federal labour policies provide a competitive environment for the sector (e.g. seasonal agricultural worker programs).

- *Food Safety:*
  - Support the development and implementation of food safety programs that build upon the already strong reputation of Canadian products.

- *Research and Technology:*
  - Ensure access to crop protection tools and new technologies to foster growth, competitiveness and environmental sustainability;
  - Support the development of tools to facilitate the marketing of horticultural production;
  - Ensure research excellence in the sector that supports priorities and changing needs.

- *Trade and Industry Standards:*
  - Support food safety and crisis management programming;
  - Assist commodity sectors when faced with threats to their business;
  - Provide input on foreign trade agreements to ensure a competitive business environment through fair import and export rules;
  - Influence plant health policy and actions;
  - Ensure a regulatory environment free of "red tape";
  - Communicate with other industry stakeholders to foster the relationship between growers, packers, wholesalers, retailers and processors.

TABLE 1.1 Horticultural Farm Cash Receipts, 2005

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALB	BC	CAN.
						$ million					
Potatoes	1.9	161.7	9.5	77.2	101.6	64.1	154.2	23.4	137.8	61.0	792.5
Greenhouse Vegetables	0.2	-	4.0	-	54.0	396.6	0.2	0.6	30.2	224.4	711.0
Other Vegetables	3.1	11.2	15.2	5.2	237.0	432.9	29.1	1.0	49.7	115.5	900.0
Apples	0.0	0.1	9.9	2.3	28.6	50.8	-	-	-	35.4	127.3
Other Tree Fruits	0.0	0.0	0.6	-	0.3	42.5	-	0.0	-	30.6	74.0
Berries & Grapes	0.7	6.1	31.8	19.5	78.2	48.5	1.3	1.6	1.8	154.2	343.7
Mushrooms	-	-	-	-	9.1	153.7	-	-	37.8	78.7	279.4
Floriculture & Nursery	8.3	1.9	36.8	49.9	231.9	975.9	41.8	27.5	128.9	403.8	1,906.8
TOTAL HORTICULTURE	14.1	181.1	108.0	154.2	740.6	2,165.0	226.6	54.2	386.2	1,103.7	5,134.7

Source: Statistics Canada

Ontario has the largest horticultural sector, accounting for 42% of Canada wide horticultural farm cash receipts (based on 2003 - 2005 averages) followed by British Columbia with 22% of Canada wide horticultural cash receipts, and Québec with 14% (*see Table 1.2*).

TABLE 1.2 Provincial Distribution of Horticultural Cash Receipts (2003-2005 ave.)

PROVINCE	CASH RECEIPTS (2003-2005 Average)	
	$ million	*%*
Ont	2,144.5	41.6%
BC	1,131.8	21.9%
Que	731.5	14.2%
Alb	385.9	7.5%
Man	217.8	4.2%
PEI	186.2	3.6%
NB	156.7	3.0%
NS	111.2	2.2%
SASK	76.7	1.5%
NFLD	15.6	0.3%
CANADA	5,157.9	100.0%

Source: Computations of Statistics Canada data

Horticulture is an extremely important part of production agriculture in most provinces. For example, horticulture accounted for 58% of all market cash receipts in PEI over the 2003 to 2005 period. At the same time, horticulture was responsible for 93% of all crop production (*see second column in Table 1.3*), and was larger than grain production by a factor of 18 in PEI.

While horticulture contributes towards 17% of market cash receipts across all of Canada in this time period, the sector accounts for at least 25% of farm cash receipts in:

- Prince Edward Island 58%
- British Columbia 50%
- New Brunswick 40%
- Ontario 27%
- Nova Scotia 26%

Moreover, except in the three prairie provinces, horticulture accounts for more than 50% of cash receipts from crop production (*see the middle column of Table 1.3*). Accordingly, in all provinces except the three prairie provinces, the value of horticultural products exceeds the value of all grains and oilseeds produced.

TABLE 1.3 Horticulture in Relation to Agricultural Production (2003-2005 ave.)

PROVINCE	Share of All Market Receipts	Share of Crop Market Receipts	Share of Grain & Oilseed Market Receipts
Ont	58%	93%	1869%
BC	50%	98%	3600%
Que	40%	85%	3989%
Alb	27%	51%	158%
Man	26%	79%	2323%
PEI	18%	95%	-
NB	14%	51%	158%
NS	7%	14%	19%
SASK	6%	17%	22%
NFLD	2%	2%	3%
CANADA	17%	37%	73%

Source: Computations of Statistics Canada data

The horticultural sector has also grown in size and significance over the last few decades, with cash receipts under $2 billion in the 1980's and under $3 billion in the 1990's to over $5 billion in 2005 (*See Table 1.4*). At the same, horticulture has become more important to the farm economy, as its share of all farm products cash receipts has increased from 11% in 1996 to 16% over the last few years[2] (*second row in Table 1.4*). In other words, the importance and overall economic contribution of horticultural production has doubled over the last 25 years.

TABLE 1.4 Trend in the Size and Significance of Horticulture Production

	2005	2004	2003	2002	2001	2000	1999	1996
Horticulture Receipts ($ mil)	5,135	5,271	5,095	4,970	4,664	4,373	4,026	3,195
Share of All Market Receipts	16%	17%	17%	15%	14%	15%	14%	11%
Share of Crop Receipts	38%	36%	38%	34%	34%	33%	30%	23%
Percent of Grain & Oilseed	75%	69%	74%	63%	64%	63%	53%	34%

Source: Computations of Statistics Canada data

2 *This was under 8% in 1981.*

1 INTRODUCTION

Horticulture now accounts for 38% of cash receipts for all crops produced in Canada, which is 65% greater than twenty years ago (*and as shown in the last row in Table 1.4*). Where horticulture was less than 35% of the grains and oilseeds economy in 1996, it is now over 70%, a significant shift in relative importance.

The size and significance of the horticultural sector is not always understood in the farm community and by policy makers. Part of this misunderstanding can reflect that diverse nature of the horticultural sector, with over 100 different horticultural crops produced across the country, from cranberries to peaches in the fruit sector, to asparagus to greenhouse tomatoes in the vegetable sector, to potatoes and a vast array of floriculture products.

The next section profiles the horticultural sector supply chain to further illustrate the size and significance of the sector.

2 A PROFILE OF THE HORTICULTURAL SUPPLY CHAIN

Horticulture is a significant part of the agricultural production, food retail sector and food processing. The size of the horticultural sector is highlighted in this section.

2.1 Consumption of Edible Horticultural Products

The edible portion of horticulture is larger than dairy or all meats when viewed in terms of consumer expenditures. At $14.4 billion dollars, all edible horticultural products account for one quarter of retail food expenditures of $56.7 billion in 2004 (*see Table 2.1*)[3]. This 25% expenditure share exceeds that of all meat at 18% and all dairy products of 12%.

TABLE 2.1 Retail Expenditures on Fruits and Vegetables, 2004

ITEM	Expenditures on Fruit Products	Expenditures on Vegetable Products	Total Fruit & Vegetable Expenditures	Percent of Food Retail Expenditures
Fresh (produce)	3,924,817,830	3,880,322,707	7,805,140,537	13.8%
Shelf stable juices	1,270,825,927	229,891,568	1,500,717,495	2.6%
Chips		1,070,708,088	1,070,708,088	1.9%
Canned and bottled	374,837,032	614,289,845	989,126,877	1.7%
Refrigerated Juices	821,165,352		821,165,352	1.4%
Frozen	84,591,839	552,444,288	637,036,127	1.1%
Ketchup and garnishes		467,904,385	467,904,385	0.8%
Relishes		261,566,685	261,566,685	0.5%
Spaghetti & pizza sauces		258,451,548	258,451,548	0.5%
Jams, jellies & preserves	203,213,947		203,213,947	0.4%
Dried fruits & vegetables	108,122,357	44,794,106	152,916,463	0.3%
Fruit snacks	132,274,685		132,274,685	0.2%
Frozen juice concentrates	121,848,178		121,848,178	0.2%
Total			**14,422,070,367**	**25.4%**

Source: Calculation based on A.C Nielsen data on retail food expenditures for major retailers and Statistics Canada data on retail stores sales for food of $56.7 billion for 2004

With consumer expenditures of $7.8 billion, produce represents 13.7% of food expenditures at food retailers, which is based on 6.9% for fruit and 6.8% for vegetables[4]. In comparison, the average US consumer spent 3.8% of their food dollar at food retail outlets on fresh vegetables and 3.9% on fresh fruits[5]. The total produce expenditures of 7.7% in the United States underscores the higher per capita fresh fruit consumption in Canada.

3 *The expenditures shares are based on A.C. Nielsen retail food expenditure data for major retailers of $39.1 billion in 2004, which accounts for 68% of the $56.7 billion in food retail sales as reported by Statistics Canada (Cansim Table 080-0018). This value increased to $59.8 billion for 2005.*

4 *In a 2001 Statistics Canada study on weekly household food expenditures fruits, vegetables and nuts accounted for 14.9% of household expenditures on food purchased at food retail stores (Statistics Canada Catalogue 62-554-XIE).*

5 *Based on the USDA report "How Much do Americans Pay for Fruits and Vegetables" /AIB-790 (Economic Research Service/USDA based on 1999 data.*

Processed fruit and vegetable expenditures of $6.6 billion account for the other 11.6% of retail food expenditures in 2004. This includes a range of products; from juices to canned products, to condiments, and to snack products such as fruit snacks and potato chips.

Statistics Canada reported that total food expenditures total $82.6 billion in 2004, which was 10.8% of all personal expenditures by Canadians[6]. Accordingly, 68.6% of food expenditures in 2004 were through food retailers and other $25.9 billion was spent on food purchased through the food service sector (or 31.4% of total food expenditures)[7].

Produce and processed fruits and vegetables are an important expenditure item for food service operators. The largest item distributed into the food service channel is fresh produce. In the United States, the Produce Marketing Association (PMA) indicates that food service accounts for 45% of all produce sales by suppliers to retail and food service[8] [9]. Produce purchases are estimated to be $2.3 billion by the food service sector based on assuming a slightly smaller proportion for Canada of 35% (to account for a higher per capita food retail expenditure on produce in Canada compared to the United States), and using the estimated retail trade purchase value of $4.2 billion[10].

Processed fruits and vegetables are estimated to represent $1.1 billion in purchases, after accounting for supply and retail purchases. The combined fresh and processed fruit and vegetable supplies purchased by the food service industry is estimated to be $3.5 billion, which represent 13% of food service sales, before accounting for the sales of alcoholic beverages.

Consumer retail purchases and food service purchases of fruits and vegetable products are supplied through the Canadian horticultural supply chain. A schematic illustration of the many components of the horticultural supply chain is provided in *Annex I*. The supply chain has Canadian industry as well as importers supplying the buying requirements of food retailers and food service operators.

Figure 2.1 highlights the estimated value of the horticultural sector through the supply chain, from grower to consumer, for the 2004/2005 period. This supply chain does not include wine sales at the retail level[11] and does not include non-food horticulture such as floriculture, nursery, and turf at the retail level; only at the farm level.

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6 *Statistics Canada data on average household expenditures for 2004, which excludes alcoholic beverages. Cansim table 203-001 based on $6,901 average annual expenditures for 11,952,550 households across Canada.*

7 *In 2001, Statistics Canada reported that average away from home expenditures were 30.3%, based on a special study of average weekly food expenditures per household. (Statistics Canada Catalogue 62-554-XIE).*

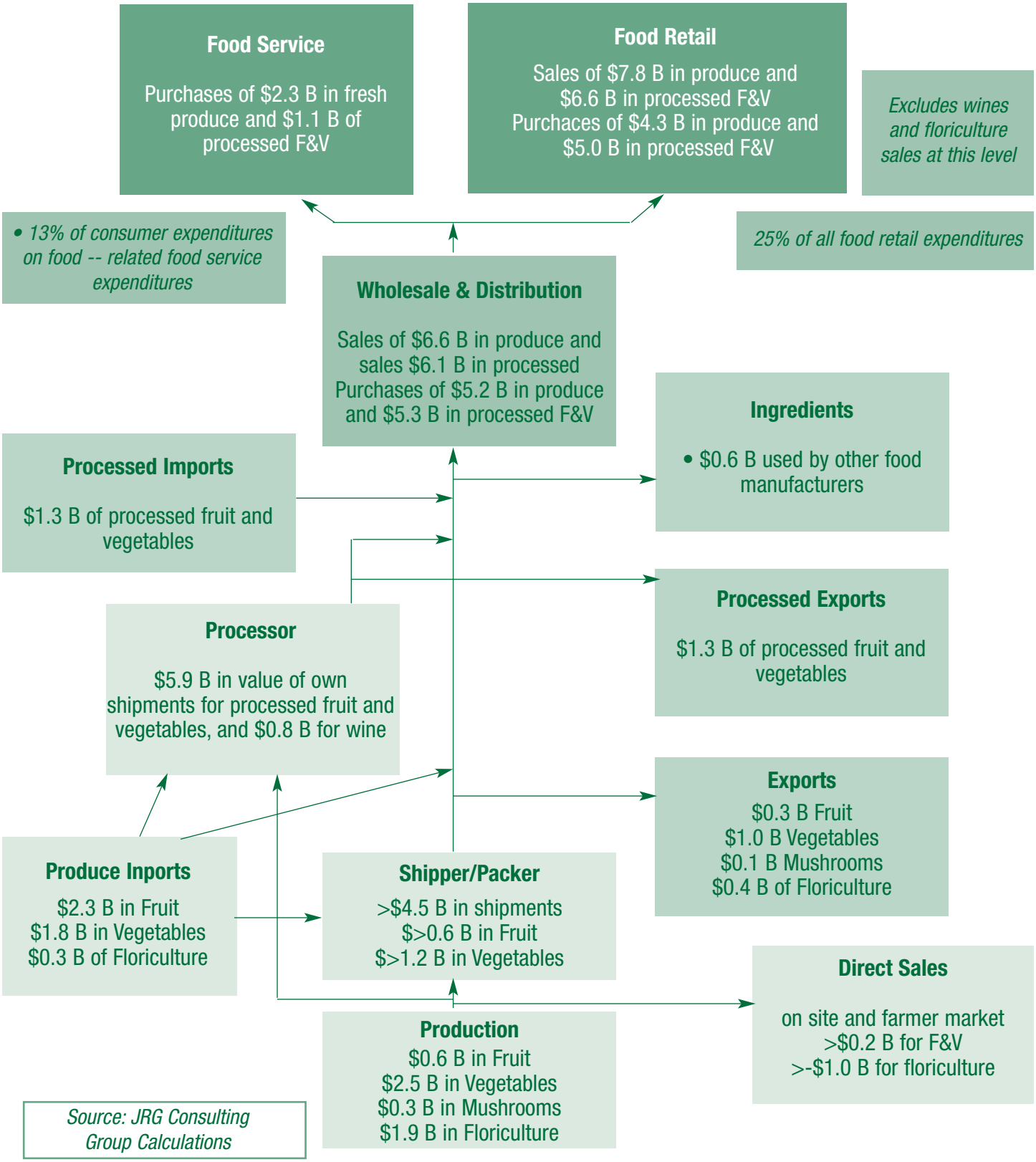
8 *PMA, Fresh Produce Industry Sales, 2004, based on a PMA Freshtrack study conducted by Cornell University.*

9 *A supplier of produce in Canada indicated that their sales ratio was equal to that measured by the PMA.*

10 *Measured by adjusting retail purchases of $4.3 billion for the 35:65 split in sales for total sales of $6.6 billion.*

11 *Wine sales are an estimated $800 million from Canadian vintners and $3.6 billion for all wines sales (including imported wines) for 2004, which is based on data assembled from the Canadian Vintners Association, and sales of domestic wines (bottled in Canada) of 76 million litres.*

FIGURE 2.1 Canadian Horticulture Sector Value Chain – 2004 Estimates



Source: JRG Consulting Group Calculations

Final consumption of fruit and vegetable products can be supplied by imports or by domestic supplies, as fresh product and as processed product. An estimated 80% of produce is supplied by imports[12], with a higher share in fruits due to consumption of fruits such as bananas and citrus fruits. This leaves only a 20% share to domestic growers, with the challenge of extending a short production and marketing season to attain a larger market share in many perishable product areas.

Through the ability to extend product shelf life through processing, the Canadian fruit and vegetable-processing sector is able to attain an estimated 85% market share[13]. Consequently, the import share of processed fruits and vegetable products consumption is 15%. Proportionally more Canadian vegetable products enter the processing channel than domestic fruit production.

Canadian production can enter a number of different channels in the supply chain. As an example, potatoes can be packed and shipped to export markets as table or seed potatoes, while other potatoes can be shipped to table markets across Canada. Processed potato products can be manufactured in Canada and shipped as semi finished goods (sliced and diced potatoes) for use in further food manufacturing in Canada or in export markets, while other potato products (chips and fries) can be shipped into export markets, as well as into food service and retail accounts across Canada. At each stage in the value chain, businesses are faced with import competition, and a myriad of other business issues.

2.2 An Overview of the Primary Production Sector

The horticultural production sector is a very diverse sector, ranging from crops grown in controlled environments (greenhouse products), to crops that are storable (apples, potatoes, carrots) as harvested, to others that are highly perishable and if not immediately consumed as a fresh product, need to undergo primary processing to allow for storability (e.g., tomato paste, frozen cherries). As well, some products are consumed in a fresh form and other are consumed in a processed form, or as an ingredient in other food products. Furthermore, some products are non-food products (floriculture and nursery products), which can have different issues than food products.

Production of horticultural crops is a large part of the agricultural sector. Based on a five-year average of cash receipts, horticulture accounts for 36% of all market place receipts for crops and 16% of all farm cash receipts received from the market. The horticultural sector is larger than many large single commodity sectors, such as cattle, dairy, hogs, and wheat[14]. When considered in relation to all grains and oilseeds produced, the horticultural sectors value of production is 69% of the entire grains and oilseeds complex.

TABLE 2.1 Horticulture in Relation to Other Primary Agricultural Production

ITEM	5-Year Average
Horticulture ($ million cash receipts)	$5,027
Share of All Agriculture	16%
Share of All Crops	36%
Percent of Grains & Oilseeds	69%

Source: Computations based on Statistics Canada data on Cash Receipts for 2001 to 2005

12 *Based on the calculation of $4.1 billion in produce imports with $5.2 billion in purchases by wholesalers and distributors (see Figure 2.1).*

13 *Based on the calculation of domestic sales of $4.6 billion ($5.9 billion in shipments minus the $1.3 billion in exports) divided by $5.3 billion in purchases by wholesalers and distributors (see Figure 2.1).*

14 *In 2004, the horticultural sector had cash receipts of $5.3 billion, while the grains and oilseed sector had cash receipts of $7.6 billion.*

Farm cash receipts received by horticultural producers for these major groupings by province in 2005 are illustrated in *Table 2.2*.

TABLE 2.2 Farm Cash Receipts for Horticulture, Canada and the Provinces, 2005

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALB	BC	CAN.
Potatoes	1.9	161.7	9.5	77.2	101.6	64.1	154.2	23.4	137.8	61.0	792.5
Greenhouse Vegetables	0.2	-	4.0	-	54.0	396.6	0.2	0.6	30.2	224.4	711.0
Other Vegetables	3.1	11.2	15.2	5.2	237.0	432.9	29.1	1.0	49.7	115.5	900.0
Apples	0.0	0.1	9.9	2.3	28.6	50.8	-	-	-	35.4	127.3
Other Tree Fruits	0.0	0.0	0.6	-	0.3	42.5	-	0.0	-	30.6	74.0
Berries & Grapes	0.7	6.1	31.8	19.5	78.2	48.5	1.3	1.6	1.8	154.2	343.7
Mushrooms	-	-	-	-	9.1	153.7	-	-	37.8	78.7	279.4
Floriculture & Nursery	8.3	1.9	36.8	49.9	231.9	975.9	41.8	27.5	128.9	403.8	1,906.8
TOTAL HORTICULTURE	**14.1**	**181.1**	**108.0**	**154.2**	**740.6**	**2,165.0**	**226.6**	**54.2**	**386.2**	**1,103.7**	**5,134.7**
Provincial Share	***0.3%***	***3.5%***	***2.1%***	***3.0%***	***14.4%***	***42.2%***	***4.4%***	***1.1%***	***7.5%***	***21.5%***	***100.0%***

Source: Statistics Canada

Ontario is the largest supplier of horticultural products, accounting for 42% of farm cash receipts attributable to horticulture in 2005. British Columbia is the second largest producer of horticultural products at 22% of the Canadian total. Québec is the third largest province accounting for at least 14% of horticultural production. Together these three provinces accounted for 78% of the value of horticultural production in 2005.

While horticulture contributes towards 17% of market cash receipts across all of Canada (average for 2003 to 2005), the sector accounts for at least 25% of farm cash receipts in:

- Prince Edward Island 58%
- British Columbia 50%
- New Brunswick 40%
- Ontario 27%
- Nova Scotia 26%

Table 2.3 illustrates the trends in primary production by major sub-sector. For example, greenhouse vegetables grew (in the value of production) by 9.7% per year over the 1998 to 2005 period, with floriculture sales growth second at 6.8% annual growth over the period. The apple sector is the only sector where the value of production has been declining over the last six years, for an annual decline of 3.7%.

TABLE 2.3 Farm Cash Receipts for Horticulture, 1998 to 2005

	2005	2004	2003	2002	2001	2000	1999	1998	GROWTH	GROWTH
					000 dollars				*annual*	*2005/04*
Potatoes	792,488	891,508	846,402	917,618	722,879	679,916	700,669	612,166	4.5%	-11.1%
Greenhouse Vegetables	710,988	713,322	637,228	593,763	589,710	504,713	438,491	376,949	9.7%	-0.3%
Other Vegetables	900,044	867,313	863,839	843,013	873,847	796,238	779,893	787,818	2.0%	3.8%
ALL VEGETABLES W/ POTATO	2,403,520	2,472,143	2,347,469	2,354,394	2,186,436	1,980,867	1,919,053	1,776,933	4.5%	-2.8%
Apples	127,272	144,355	153,706	159,598	181,213	192,361	182,273	168,739	-3.7%	-11.8%
Other Tree Fruits	73,998	81,974	86,100	74,266	76,837	67,919	70,360	63,100	2.7%	-9.7%
Strawberries	58,688	57,310	53,475	52,398	55,892	53,553	51,509	52,381	1.7%	2.4%
Other Berries & Grapes	285,051	303,660	259,193	242,385	224,555	232,888	268,504	201,996	6.0%	-6.1%
ALL FRUITS	545,009	587,299	552,474	528,647	538,497	546,721	572,646	486,216	1.9%	-7.2%
Mushrooms	279,401	283,157	293,027	257,783	273,830	257,053	212,510	226,024	3.5%	-1.3%
Floriculture & Nursery	1,906,807	1,928,234	1,902,348	1,828,717	1,665,576	1,588,698	1,322,114	1,220,579	6.8%	-1.1%
TOTAL	5,134,737	5,270,833	5,095,318	4,969,541	4,664,339	4,373,339	4,026,323	3,709,752	4.8%	-2.6%

Source: Statistics Canada

TABLE 2.4 Price Index for Fruit, Vegetables and Potatoes, 1997 to 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005	CHANGE
					1997 = 100.0					*annual*
Fruit	100.0	99.7	97.4	97.6	96.6	104.3	105.0	105.0	105.4	0.7%
Vegetables	100.0	102.7	102.6	105.0	106.1	111.1	111.9	112.1	112.4	1.5%
Potatoes	100.0	111.0	123.5	119.6	124.2	166.4	135.7	119.7	129.0	4.3%

However, most of the sector experienced a sales decline in 2005 in relation to 2004, with a decline of 11.1% in apple sales and 11.1% for potatoes, followed by a 9.7% decrease for other tree fruits. This was an overall 2.6% decline for the sector. *Table 2.4* shows that there have been minimal increases in prices received for fruits and vegetables based on price indices constructed by Statistics Canada. As noted later, the strengthening of the value of the Canadian dollar has been a significant challenge affecting income received by horticultural producers.

There are over 13,850 farms dedicated to horticultural crop production in Canada[15]. In 2004, based on data extracted from Statistics Canada Whole Farm Data Base, the following farm numbers were reported[16]:

- 1,495 potato farms (NAICS 111211);
- 2,256 vegetable farms (excluding greenhouse products) (NAICS 111219);
- 4,850 fruit farms (berries, grapes and tree fruits) (NAICS 1113); and
- 3,875 operations in greenhouse, mushroom and floriculture products (NAICS 1114).

The horticultural production sector is a large employer in the agri-food sector, accounting for over 60,000 jobs across Canada. *Table 2.5* profiles the employment levels in horticultural production with this data reflecting both full time and part time employment.

TABLE 2.5 Total Production in Horticulture Production Across Canada

YEAR	Vegetable and Melon Farming	Fruit and Tree Nut Farming	Greenhouse and Floriculture	TOTAL
	000	000	000	000
1999	12.8	10.6	38.2	61.6
2000	12.3	9.9	39.5	61.7
2001	9.9	7.6	33.7	51.2
2002	16.6	9.3	32.1	58.0
2003	13.0	7.7	35.4	56.1
2004	14.2	10.4	37.3	61.9

Source: Statistics Canada, Labour Force Survey for NAICS 1112, 1113, and 1114

15 *This data is different from Census of Agriculture data as the Census data is for any farm reporting, while this data is based on presumed specialization based on sales greater than 50% in a specific area. In the 2001 Census of Agriculture, there were 7,903 farms reporting that they were in grape and berry production; 5,974 farms reporting that they were in tree fruit production; and 9,829 farm reporting that they were in vegetable production, excluding greenhouse vegetables, and 6,071 farms reporting that they were producing greenhouse products.*

16 *These values do not add up to the total since some farms are classified as horticulture when their total sales of horticulture are more than 50%, and may not be the case when considering production at the level of for example, potatoes and field vegetables.*

2.3 An Overview of the Processing Sector

The value of shipments based on processing of fruit and vegetables in 2003 was $6.7 billion[17]. This includes:

- $3.5 billion in sales from processors that do not freeze product;
- $2.5 billion in sales from processors that freeze products; and
- $0.8 billion in sales from wineries.

This sales volume represents 10% of the $65.8 billion[18] in shipments from all food processing activities in Canada. The value added by fruit and vegetable processing is proportionality higher, accounting for 15% of the value added activity in food manufacturing and 12% of the employment in food manufacturing.

The value of shipments from processors (fruit and vegetable processors and wineries) has been steadily increasing over the last decade, with shipments at:

- $4.1 billion in 1993;
- $4.8 billion in 1997;
- $6.1 billion in 2000; and
- $6.7 billion in 2003.

In the processing sector in 2003 there were:

- 376 fruit and vegetable processors (NAICS 3114); and
- 190 wineries (NAICS 31213).

Total employment in fruit and vegetable processing, including wineries is shown in *Table 2.6*. In 2003, the labour force in fruit and vegetable processing was 28,790, with associated wages and salaries of $921 million.

TABLE 2.6 Total Employment in Horticulture Processing Across Canada

YEAR	Fruit & Vegetable Processing	Wineries	TOTAL
1993	18,605	1,269	19,874
1994	19,109	1,107	20,216
1995	19,108	1,121	20,229
1996	20,423	1,249	21,672
1997	20,349	1,308	21,657
1998	19,788	1,345	21,133
1999	21,938	1,437	23,375
2000	24,078	1,836	25,914
2001	24,323	2,471	26,794
2002	25,042	2,933	27,975
2003	25,715	3,075	28,790

Source: Statistics Canada, Annual Survey of Manufacturers, NAICS 3114 and 31213

17 *This includes the $5.9 billion in shipments from fruit and vegetables processors (NAICS 3114), and $0.8 billion from wineries (NAICS 31213) in 2003.*
18 *This includes the value of shipments of all food manufacturers (NAICS 311) and wineries (NAICS 31213).*

The horticultural production and processing sector combined is a large employer, accounting for 90,000 jobs. This level of employment results in a significant contribution by the sector to the Canadian economy (as will be noted in the next section).

2.4 Exports and Imports of Horticultural Products

Canada is a net importer of horticultural products, with a net trade deficit of $3.8 billion in 2004 and $4.3 billion in 2005. This is largely due to imports of fresh fruit and vegetables (produce) and wines, as shown in the last section of *Table 2.7*. Exports increased each year over the 2000 to 2004 period by 8.1% per year (on average); however the value of exports decreased in 2005 (in relation to 2004) by 4.5%, which can be related to the higher value of the Canadian currency in major export markets. The stronger Canadian dollar started having an impact in 2003 and 2004, as the value of exports in these two years increased by 5%, while the annual increase was over 11% in the year 2000 and 2001.

TABLE 2.7 Trade in Horticultural Products, Canada, 1999 to 2004

		1999	2000	2001	2002	2003	2004	2005
	HS CODE	MILLION DOLLARS						
EXPORTS								
Floriculture and Nursery	0.06	392	448	513	522	481	453	387
Vegetables (unprocessed)	0.07	680	752	839	960	1,008	1,057	1,052
Fruits (unprocessed)	0.08	252	269	274	292	324	367	399
Processed fruits & vegetables	0.20	848	948	1,083	1,117	1,211	1,311	1,203
Wine	0.2204	6	10	10	11	14	17	20
Total		**2,179**	**2,427**	**2,719**	**2,902**	**3,037**	**3,205**	**3,061**
IMPORTS								
Floriculture and Nursery	0.06	302	319	349	358	348	359	361
Vegetables (unprocessed)	0.07	1,370	1,550	1,676	1,891	1,820	1,792	1,892
Fruits (unprocessed)	0.08	1,865	1,900	2,027	2,258	2,256	2,316	2,470
Processed fruits & vegetables	0.20	1,232	1,209	1,263	1,396	1,281	1,331	1,378
Wine	0.2204	824	859	901	962	1,146	1,180	1,262
Total		**5,594**	**5,836**	**6,216**	**6,866**	**6,852**	**6,978**	**7,363**
NET EXPORTS								
Floriculture and Nursery	0.06	90	129	165	164	133	94	26
Vegetables (unprocessed)	0.07	(691)	(798)	(837)	(931)	(813)	(735)	(840)
Fruits (unprocessed)	0.08	(1,613)	(1,631)	(1,752)	(1,966)	(1,932)	(1,949)	(2,071)
Processed fruits & vegetables	0.20	(384)	(260)	(181)	(279)	(71)	(20)	(175)
Wine	0.2204	(818)	(849)	(891)	(951)	(1,133)	(1,163)	(1,242)
Total		**(3,416)**	**(3,409)**	**(3,496)**	**(3,964)**	**(3,815)**	**(3,773)**	**(4,302)**

Overall horticultural imports exceed exports by $4.3 billion in 2005, with fresh fruits accounting for $2.1 billion of the trade deficit. Canada is running a slight trade deficit on processed fruits and vegetables. The net trade position for some fruit and vegetable areas is highlighted in Table 2.8 for 2005. Potato products, which are mostly French fries, are the largest export item and account for the largest net trade surplus (after accounting for imports). Tomatoes are the second largest export item, (mostly greenhouse grown tomatoes), with imports of tomatoes equaling 72% of the export value. Frozen fruits (e.g., frozen blueberries) are the third largest export item.

TABLE 2.8 Exports and Imports of Selected Horticultural Products, 2005

PRODUCT	Exports	Imports	Net Exports
		MILLION	
Potato products	859.8	134.6	725.2
Tomatoes	334.8	243.8	91.0
Frozen fruits	224.5	106.5	118.0
Peppers	142.9	181.7	(38.8)
Potatoes	137.8	74.5	63.3
Frozen vegetables	110.3	72.8	37.5
Cranberries, etc	103.9	56.2	47.7
Mushrooms	92.0	10.1	81.9
Cucumbers	78.5	42.2	36.3
Fruit and vegetable juices	65.2	303.0	(237.8)
Apples	42.0	139.4	(97.4)
Carrots and turnips	33.0	107.0	(74.0)
Onions and shallots	29.4	97.2	(67.8)
Cabbages	24.8	125.4	(100.6)
Jams and fruit jellies	23.6	37.1	(13.5)
Lettuces	20.4	327.3	(306.9)
Raspberries, blackberries, etc	8.0	50.5	(42.5)
Tomato products	5.9	85.6	(79.7)
Cauliflower and broccoli	4.3	54.5	(50.2)
Grapes	1.5	365.4	(363.9)
Strawberries	0.8	202.0	(201.2)
Melons	0.8	99.7	(98.9)
Watermelons	0.3	83.8	(83.5)
Peaches and nectarines	0.1	90.1	(90.0)
Orange juice		281.6	(281.6)
Bananas		245.5	(245.5)
Oranges		172.7	(172.7)
Mandarins and clementines		136.2	(136.2)
Pineapples		95.8	(95.8)
Lemons		47.3	(47.3)
Grapefruit		37.3	(37.3)

From Canada's farmgate value of production of $3.2 billion (for fruit, vegetables, and mushrooms) shippers exported $1.4 billion, with the majority as vegetables. Canadian processors of fruit and vegetable products shipped $5.9 billion in product[19], of which $1.3 billion went into export markets, or 22% of production. The United States was the market destination for 90% of Canada's exports of edible horticultural products (total of $2.8 billion in 2004).

Major trade deficits in products which can be grown in Canada include grapes, lettuces, fruit and vegetable juices, strawberries, and cabbage. With year round consumption of perishable products, it is difficult to provide these products from Canadian supplies in the off-season. Developments in greenhouse production illustrate the success of approaches to supply a market on a 12-month basis; however, this approach requires investment in technologies, management practices, and plant genetics. Overall, Canada had a net trade deficit of $2.9 billion in fresh product in 2005[20].

Canada imports over $1.0 billion in fresh products that are grown in more tropical climates, with these shown in the lower portion of Table 2.8, and are 25% of fresh produce imports. Sixty percent of imported fruit and vegetable products originate in the United States, with the remainder coming from each region of the globe. Much of the imports from more distant suppliers reflect the fact that certain areas of the world have an advantage in producing various types of horticultural products (e.g., oranges and bananas from more southern climates). However, Canada imports products that can be produced in Canada, such as:

- Apples from the United States and New Zealand
- Greenhouse tomatoes from Holland and Spain
- Broccoli from Mexico
- Apple juice from China
- Canned mushrooms from China

These imports of competitive products occur for a variety of reasons, including:

- lower cost structures, such as product from China and Mexico
- non-availability of domestic product in certain times of the year
- supply and demand balances for product by region and the lower costs of sourcing product as an import versus shipping product across Canada,
- consumer demand for certain varieties that may not be produced in Canada, but which are available from importers,
- retail buying practices where buyers prefer to work with only a few suppliers that have access to year round supplies, and
- consumer preference for certain branded products that are only available through imports (e.g., Washington State apples)

In the produce area, the imports of $4.3 billion represent approximately 67% of the value of product handled (purchased) at the wholesale/distribution centre level. In the case of processed fruits and vegetables, imports account for approximately 25% of the value of product at the wholesale/distribution center level.

19 *Excluding wine shipments of $0.8 billion.*

20 *Based on imports of $4.3 B and exports of $1.4 B in the produce category.*

The horticultural sector is a significant contributor to the farm economy and to the Canadian economy flowing from the $15 billion in shipments of Canadian product going to retailers, food service operators and export destinations. The impact of the horticultural production and processing sector on the Canadian economy is highlighted in this section based on horticultural production in Canada and shipments from packers and processors[21]. This analysis is based on using a regional impact model (an input-output model) that captures the economic impact of economic activities[22]. This approach shows how a dollar spent on processed horticultural products, for example, circulates and re-circulates within the economy, multiplying the effects of the original expenditures on overall economic activity.

3.1 Expenditures by the Sector

The horticultural production sector accounted for an estimated $5.5 billion in cash income in 2004 and 2005 (cash receipts plus an estimate of direct program payments from government). This is the initial expenditure level of the horticultural production sector that drives the input output analysis, as producers spend this gross income on a variety of goods and services. This value is shown in the first column in *Table 3.1*.

TABLE 3.1 Net Expenditures by Component of the Horticulture Sector, 2004/2005

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Sales ($ Mil.)	$5,501	$4,450	$6,700	$11,150	$16,650
Initial Expenditure ($ Mil.)	$5,501	$1,144	$4,740	$5,884	$11,385

Source: JRG Consulting Group and Econometric Research Limited calculations

After product leaves the farm gate, an estimated 63% of production was consumed (used by the consumer) in a fresh and unprocessed form for a sales value of $3.3 billion to the packing sector[23] and the remaining 37%, or $1.96 billion, went into the processing sector.

The sales value of packers is close to $4.5 billion[24], with a net sales value (after accounting for the value of purchased horticultural product) of $1.14 billion. This $1.14 billion in expenditures is used to estimate the economic contribution of the packing sector alone; ensuring no double counting for the economic contribution of the production sector.

Processors had an estimated sales value of $6.7 billion in 2004, with an estimate of $1.96 billion in purchases of Canadian product. This resulted in their expenditures of $4.7 billion, which is net of their expenditures on local product.

21 *This section draws on prior work presented to the Horticulture Value Chain Roundtable in October 2005 and reported in the JRG Consulting Group report "A Profile of the Horticulture Sector and Associated Economic Contribution". Econometric Research Limited provided assistance in conducting the analysis.*

22 *An overview of the model used and the general approach are provided in Annex II.*

23 *This value is based on estimated packer mark-up of 35% across all fresh horticulture, which includes an estimated 80% of fruit production entering the fresh market channel, 15% of vegetables, 44% of potatoes and 100% of mushroom and floriculture entering the fresh market channel.*

24 *This mark-up value varies significantly across the sector, with a higher percentage mark-up on lower valued product. For example the percentage packer mark-up on apples can be much higher than on greenhouse vegetables.*

This results in a total expenditure level of $5.9 billion by processors and packers (net of farm product purchases). Across the production, processing and packing, the total sales were $16.7 billion in 2004 and net expenditures an estimated $11.4 billion (*see the far right entry in the second row in Table 3.1*).

Initial Expenditures – This figure indicates the amount of expenditure directly made by the processors of a given product. It is these expenditures that typically drive the results.

These expenditure levels[25] and the resulting linkages[26] drive the economic impact and the measurement of economic contribution.

3.2 Impact of Horticulture Expenditures on Overall Economic Activity

Initial expenditures in the horticultural sector (*as defined in the second row in Table 3.1*) are essentially the direct impacts of the sector; drive associated economic activity through the indirect effects (suppliers purchasing their required supplies), and the induced effect (the impact of expenditures by labour on goods and services). The impact of these initial expenditures on output of the economy is shown in *Table 3.2*. For example, across the production, packing and processing sectors of horticulture, the $11.4 billion in initial expenditures generates $17.9 billion in indirect and induced expenditures, resulting in total economic activity of $29.0 billion.

A dollar spent on processing food circulates and re-circulates within the economy, multiplying the effects of the original expenditures on overall economic activity. This process is referred to as the economic **multiplier effect**. It operates at several levels:

- The initial expenditures on equipment, materials and labour are generally referred to as the direct costs of operation – the **initial (direct) effects**;
- Subsequent purchases by suppliers of materials and services to sustain the original and derivative expenditures - the **indirect effects**; and
- The **induced effects** that emerge when workers in the sectors stimulated by initial and indirect expenditures spend their additional incomes on consumer goods and services.

25 *The expenditure profile for the horticultural production sector is based on ESAS (extraction system of agricultural statistics) on whole farm data compiled by Statistics Canada. The value of farm sales from this database closely approximates the value of farm cash receipts, and in 2003 labour expenses were 29% of all operating expenses. Expenditures were available for categories such as labour, seeds, fertilizer, crop protection materials, energy, other utilities, repairs, custom work, etc. This expenditure profile was used for horticulture rather than the general agricultural expenditure profile available through the Statistics Canada tables used for input output analysis. Expenditure profiles for fruit and vegetable processing (and wineries) and for the packing sector (based on warehousing data) were based on the input output tables regularly published by Statistics Canada.*

26 *There are two resulting types of linkages: upstream (backward) and downstream (forward) based on the expenditures of the horticultural sector. Downstream linkages of horticultural production are the impacts on packers and processors. Impacts on suppliers of fertilizer, machinery, and energy, are upstream linkages.*

TABLE 3.2 Impact of Horticulture on Economic Activity, 2004/2005

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Initial Expenditure ($ Mil.)	$5,501	$1,144	$4,740	$5,884	$11,385
Gross Output ($ Million)					
Direct	$5,341	$1,090	$4,724	$5,814	$11,155
Indirect & Induced	$5,596	$3,844	$8,452	$12,296	$17,892
Total	$10,937	$4,934	$13,176	$18,111	$29,047
Multiplier	2.1	4.3	2.8	3.1	2.6

Source: JRG Consulting Group and Econometric Research Limited calculations

Multipliers – These are summary measures that represent the division of the total impacts (direct, indirect and induced) by the initial expenditures. For example, the income multiplier associated with horticulture production across Canada is calculated by dividing the total income (value added) impact by initial expenditures. The only exception is that of the employment multiplier where total employment is divided by direct employment in order to preserve the common units.

The output multiplier is 2.6, which means that for each million dollar of sales by the horticultural sector, there are total sales (or transactions) of $2.6 million throughout the Canadian economy. This multiplier is somewhat larger than the 2.1 for the horticultural production sector. The Canadian average sales multiplier is 2.57 across all industries.

3.3 Value Added by Horticultural Production, Packing and Processing

The total output contribution of the sector is distinct from the value added due to horticultural production and processing. Value added is the sum of wages, rent, interest, profits, indirect business taxes, and depreciation minus subsidies. Value added is essentially the GDP (gross domestic product) of the sector[27] and is a measure of the net contribution of an industry or sector to the economy.

Table 3.3 shows that the direct value added of horticultural production is $3.1 billion. This accounts for 30% of the value added to the economy of the entire agricultural sector or $10 billion in 2003[28]. This measure of direct value added in relation to the value added of the entire agricultural sector is double horticulture's share of farm cash receipts of 16%. This larger contribution, as expressed by value added, is due in part to the large labour component of the sector.

Value Added – This figure represents net output generated by the initial expenditures in the country. It is typically the sum of wages, rent, interest and profits in addition to indirect business taxes and depreciation minus subsidies.

27 *This is different from gross output which represents the sales of the sector and includes the value of the output of its suppliers.*

28 *Source: Statistics Canada, Catalogue No. 20-017-XIE, Agriculture Value Added, November 2004.*

When all of the indirect and induced economic activity is considered, the value added due to primary horticultural production is $6.9 billion. The multiplier is 1.3 implying that for each $1.0 billion in farm level sales, $1.3 billion in GDP is created in the Canadian economy[29].

TABLE 3.3 Value Added Impact of Horticulture, 2004/2005

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Initial Expenditure ($ Mil.)	$5,501	$1,144	$4,740	$5,884	$11,385
Value Added ($ Million)					
Direct	$3,063	$596	$2,984	$3,580	$6,643
Indirect & Induced	$3,849	$1,192	$1,724	$2,916	$6,765
Total	$6,912	$1,788	$4,708	$6,496	$13,408
Multiplier	1.3	1.6	1.0	1.1	1.2

Source: JRG Consulting Group and Econometric Research Limited calculations

The value added by the sector based on shipments by packers and processors adds another $3.6 billion of direct GDP, for $6.6 billion in direct value added (*see last column of Table 3.3*). When all of the indirect and induced economic activity is accounted for, the net contribution to the economy by these shipments of Canadian production is $13.4 billion[30] in GDP, with an associated value added multiplier of 1.2 for every dollar of initial expenditure (shipments by packers and processors).

The overall contribution to total value added by primary production of $6.9 billion is slightly larger than the impact of packing and processing (net of horticultural production) of $6.5 billion. The combined effect is $13.4 billion in GDP (value added) in the Canadian economy.

3.4 Employment and Labour Income Impact of Horticulture

Horticulture is a large generator of jobs. Primary production of horticultural crops results in $1.8 billion in labour expense on the farm (*see column 1 in Table 3.4*). Direct expenditures on wages and salaries are just over $3.2 billion by growers, packers and processors, which results in 90,100 direct jobs (as FTEs)[31].

After accounting for the indirect and induced effects, $7.9 billion in wages and salaries (labour income) is generated by horticulture (based on shipments by packers and processors and including primary production). This accounts for 59% of the total value added by the horticultural sector.

In primary production over 50,000 jobs are created (as full time equivalents), which accounts for an estimated 30% of all jobs in agriculture. Over 100,000 fulltime jobs throughout the economy are generated by primary production and another 90,000 jobs by the packing and processing portion of the horticultural sector. This results in a total employment impact of just under 250,000 jobs across Canada due to horticultural production, processing and packing.

29 *The national average for this income multiplier is 1.2 across all industries.*

30 *This represents 1.3% of overall Canadian GDP of $1.07 trillion.*

31 *The data in Table 3.4 is in terms of FTEs, and employment data in Tables 2.5 and 2.6 are total employment for both full time and part time employees.*

TABLE 3.4 Employment Impact of Horticulture, 2004/2005

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Initial Expenditure ($ Mil.)	**$5,501**	**$1,144**	**$4,740**	**$5,884**	**$11,385**
Wages & Salaries ($ Mil.)					
Direct	$1,830	$447	$954	$1,401	$3,231
Indirect & Induced	$2,203	$895	$1,620	$2,515	$4,718
Total	$4,033	$1,342	$2,574	$3,916	$7,949
Employment					
Direct	51,344	9,876	28,919	38,795	90,139
Indirect & Induced	56,742	15,174	35,384	50,558	107,300
Total	108,085	25,050	64,303	89,353	197,438
Multiplier	*2.1*	*2.5*	*3.0*	*2.9*	*2.4*

Source: JRG Consulting Group and Econometric Research Limited calculations

For every job directly generated by fruit and vegetable processors, another 3 jobs are generated elsewhere in the economy, before considering the employment impact of growers. The Canada wide average employment multiplier is 2.68 across all industries

Employment – This refers to the total person years (full-time equivalent jobs) generated by an increase in output.

These measures indicate that for every million dollars in output, the horticultural production sector generates 9.3 direct jobs and a total of 19.6 jobs (after considering indirect and induced effects). After including packers and processors, the value for the sector is 7.2 direct jobs and 17.3 economy-wide (total jobs). The Canadian average (across all industries) is 6.7 direct jobs and 18.0 total jobs per million dollars of output.

3.5 Tax Revenues

The horticultural sector is a large generator of tax revenue for governments.

Table 3.5 shows that the total contribution by the economic activity of horticultural producers is $2.8 billion, with the federal government receiving $1.6 billion in tax revenues. Together, the packing and processing sector account for $3.0 billion in tax revenues, with two-thirds contributed by processors. Overall, $3.3 billion is received by the federal government, $1.9 billion by provinces, and $0.6 billion by local governments, for a total contribution by the horticultural production, packing and processing of $5.8 billion per year.

This level of tax revenues exceeds the value of cash receipts received by producers of horticultural products in Canada. Details on the distribution of tax revenues by level of government and type of tax are provided in Annex III. Personal income tax accounts for 39% of the taxes generated, followed by GST at 14% and corporate income tax at 12%.

TABLE 3.5 Government Revenues Contributed by Horticulture, 2004/2005

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Taxes ($ Million)					
Federal	$1,607	$537	$1,145	$1,682	$3,290
Provincial	$911	$348	$673	$1,022	$1,932
Local	$301	$101	$214	$315	$616
Total	**$2,819**	**$986**	**$2,032**	**$3,019**	**$5,838**

Source: JRG Consulting Group and Econometric Research Limited calculations

Taxes – The impact model generates a large number of taxes (income taxes, GST, liquor and tobacco taxes, etc.) each of which is linked with the level of government receiving it. For example, the Federal government receives the proceeds from the GST tax, the Provincial government receives the tobacco and liquor tax and the local government receives the property and business tax.

4 THE REALITY OF THE FARM INCOME SITUATION

It is a well-known fact that across Canada farm incomes as measured by Statistics Canada would be negative if it were not for program payments made by government to farmers. While the majority of payments have gone to the grains and oilseeds sector, and more recently to the cattle industry to offset the impact of BSE border closures, the farm income situation in the horticultural sector is challenging indeed. These challenges are highlighted in the following section, which focuses on the income situation of growers of horticultural products.

4.1 Net Income of Growers

Statistics Canada provides measures of net farm income and returns to resources employed in agriculture on a Canada wide and on a provincial basis; however this is an aggregate measure and measures are not provided by sector or commodity grouping.

Tax-filer data, which is compiled by Statistics Canada, provides highly indicative information of the financial situation of farmers, and this data can be segmented into commodity areas based on classifying farm operations based on the commodity group that was responsible for at least 50% of farm cash receipts. For horticulture, this allows us to develop financial data for:

- Potatoes, based on farms with more than 50% of cash receipts from potatoes,
- Field vegetable producers, based on farms with more than 50% of cash receipts from field vegetables,
- Fruits, based on farms with more than 50% of cash receipts from fruit production,
- Greenhouse floriculture and nursery, based on farms with more than 50% of cash receipts in these products, and
- Total horticulture, which is a sum of the above.

This data accounts for 94% to 98% percent of all reported cash receipts for horticulture[32]. As a result, this tax-filer data set for approximately 14,000 horticultural operations can be considered representative of the financial situation of the horticultural sector[33].

A financial perspective of the horticultural sector is provided in *Table 4.1* for the years 1993 through to 2004. On the revenue side, the $4.6 billion in horticultural cash receipts, complied through this data source, accounted for 90% of operating revenues for these operations (of $5.1 billion in 2004). The other revenue sources include non-horticultural revenue sources such as other crops and livestock and government program payments. Revenues from government sources represented 4% of operating revenues in 2004, which was higher than in prior years (e.g., 3.8% in 2002 and 2.7% in 2000).

32 *This ranged from 69% of field vegetable cash receipts by those operations with more than 50% of field cash receipts from vegetables (74% when all horticulture is considered) in 2004 to 86% for potatoes in 2004 (and 94% in 2003) to 106% of cash receipts for fruit growers to 100% for greenhouse and floriculture.*

33 *In 2004, there were 13,855 operations in horticulture where more than 50% of revenues came from horticulture. This value was 1,495 for potatoes, 2,565 for field vegetables, 4,850 for fruit, and 3,875 for greenhouse, ornamental and floriculture operations. These crop areas do not add to the total, as some operations would have more than 50% of revenues in horticulture, but not in only fruit or vegetables, for examples.*

TABLE 4.1 Financial Position of the Canadian Horticulture Sector, 1993 to 2004

ITEMS	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993
Revenues							$ million					
From horticulture	4,614	4,548	4,326	4,070	4,102	3,615	3,344	2,965	2,717	2,804	2,454	2,259
Government payments	219	190	179	168	123	100	74	74	61	64	60	81
Total operating revenue	5,148	5,067	4,795	4,522	4,522	3,966	3,670	3,300	2,999	3,095	2,722	2,515
Gross income for tax purposes	5,319	5,181	4,888	4,633	4,618	4,056	3,746	3,389	3,078	3,171	2,781	2,581
Expenses												
Crop expenses	1,362	1,318	1,256	1,202	1,168	1,029	940	821	750	771	668	605
Salaries (inc. benefits)	1,407	1,379	1,308	1,225	1,217	1,054	979	899	818	854	741	721
Interest expenses	205	196	200	220	198	175	160	142	137	137	119	119
Total operating expenses	4,604	4,479	4,219	4,072	3,958	3,414	3,160	2,909	2,625	2,708	2,383	2,218
Capital cost allowance	348	348	321	305	318	283	256	245	210	216	191	186
Total expenses for tax purposes	5,033	4,914	4,610	4,456	4,333	3,759	3,485	3,212	2,914	2,979	2,623	2,440
Net Income												
Net operating income	544	588	576	449	564	551	510	391	374	387	339	297
Net operating income after CCA	196	239	254	144	246	269	254	146	164	170	147	111
Net income for tax purposes	286	267	278	177	285	296	261	177	164	192	158	141
Off farm income												
Wages & salaries	440	437	420	393	377	331	310	298	278	279	252	243
Total off-farm income	739	716	692	657	622	566	535	521	470	463	431	421
Assets												
Current assets	1,407	1,283	1,604	1,216		1,144		1,066		889		834
Long term assets	10,685	10,264	11,325	9,208		8,206		7,856		6,787		6,593
Total farm assets	12,093	11,548	12,929	10,425		9,350		8,922		7,838		7,500
Liabilities												
Current liabilities	691	505	695	543		382		336		283		260
Long term liabilities	2,444	2,165	2,326	1,959		1,740		1,593		1,119		1,123
Total farm liabilities	3,135	2,670	3,021	2,501		2,121		1,929		1,402		1,383
Net worth	**8,958**	**8,877**	**9,908**	**7,924**		**7,229**		**6,992**		**6,437**		**6,117**
Ratios												
Asset Turnover	2.08	2.03	2.36	2.04		2.07		2.38		2.19		2.62
Earnings (before tax)/Assets	2.4%	2.3%	2.1%	1.7%		3.2%		2.0%		2.4%		1.9%
Earnings (before tax)/Net Worth	3.2%	3.0%	2.8%	2.2%		4.1%		2.5%		3.0%		2.3%
Labour % of Operating Expenses	30.6%	30.8%	31.0%	30.1%		30.9%		30.9%		31.5%		32.5%
Operating Margin	10.6%	11.6%	12.0%	9.9%		13.9%		11.8%		12.5%		11.8%

Source: Analysis of Statistics Canada ESAS data

Table 4.1 also shows the computed gross income for tax purposes, which can be compared to total expenses for tax purposes (*in the expense section of Table 4.1*).

Total operating expenses for these horticultural operations were $4.6 billion in 2004, before considering Capital Cost Allowance (CCA) of S348 million. Labour is the largest expense item at $1.4 billion, which is 31% of operating expenses, and is larger than all direct crop related expenses, such as fertilizer seedlings, crop protection materials.

Net operating income was $544 million in 2004, down from $588 million in 2003 and $576 million in 2002. As a result the operating margin (net operating income divided by operating revenues fell from 12.0% in 2002 to 10.6% in 2004 (*see the last section of the table labeled ratios*). Net operating income does adjust for depreciation, and net operating income after capital cost allowance was 196 million in 2004, lower than the prior six years, aside from 2001. Net operating income for tax purposes, which has the CCA adjustment, is also shown.

Before tax earnings were less than 2.5% of asset values (*see Earnings (before tax)/Assets in Table 4.1*). This implies that these assets returned less than 2.5% in horticultural production before tax obligations are paid. Before tax earnings in relation to net worth indicates that the horticultural sector is returning less than 4% return on owner equity, for example, 2.2% in 2001 and 3.2% in 2004. For many operations returns from GIC's would have performed better than investing in horticultural production.

The horticultural sector has an estimated $12 billion in assets, mostly longer-term assets such as land, land improvements, equipment and buildings. Horticulture is a very capital intensive business, and on average it takes just over 2 years worth of operating revenue to equal the value of assets employed [Asset turnover ratio of 2.08 in 2004 (*see Table 2.1*)]. Accordingly, cost control is imperative in horticulture, and many costs are beyond the control of the sector or the individual operator.

Liabilities of these horticultural operations were $3.1 billion in 2004, higher than in prior years. Net worth, the difference between assets and liabilities, or operators' equity was $8.9 billion in 2004.

Table 4.2 provides a per farm operation perspective for the same information on revenues, expenses and net income as in *Table 4.1*. This tells a somewhat different story on net farm income. For example, net operating income after adjusting for CCA was under $15,000 for the average operation in 2004, lower than in the prior years (aside from 2001 at just over $10,000 per operation on average). These are averages with some operations doing well and other operations have large negative net incomes. Net incomes for tax purposes were around $20,000 for most of the 1999 to 2004 period. This is a low net return considering the $1.0 million in assets required for the average operation.

4.2 Variability in Net Income of Horticultural Production

Operating results in *Table 4.2* are for an average operation, while performance can vary based on factors such as size and type of products produced. *Table 4.3* illustrated the variability in financial performance based on sales volume. For example, in 2003 there were 2,190 horticultural operations in the Statistics Canada tax filer database with sales over $500,000. The average operation in this size category was able to achieve a net income for tax purposes of $101,000 in 2003 (or $87,300 when considering operating net income adjusted for CCA). As expected this is much higher than for operations in the other size categories.

The scale of operation does matter, as the smaller operations had a much higher capital turnover ratio, implying that for operations under $100,000 in sales, it takes over 11 years of gross revenue to equal the asset value of the operation. This is one of the major reasons that earnings were barely positive. As asset utilization increases (lower capital turnover ratio) earnings on assets employed increases, from 1.5% for the operations in the $100,000 to $249,000 in sales to 3.0% for the operations with more than $500,000 in sales.

There is considerable variability in net income. The above discussion was for the average farm, whether for all horticulture, or by sales class. The variability in net income can be shown by looking at the quartiles of producers based on a ranking all of the horticultural producers by net operating income. The result for the average producer in each quartile is shown in *Tables 4.5* and *4.6* for 2003 and 2004. The loss in net operating income was reported to be $127.5 million in 2003 and $149.6 million in 2004; resulting in a loss in net operating income for the average producer in the lowest quartile of $39,678 for 2003, and a loss of $46,889 in 2004 for the average producer in the top quartile. Aggregate 2004 net operating income in the next two quartiles of $16.4 million ($5,162 per operation for the second quartile in *Table 4.5*) and $65.8 million ($20,621 per operation for the third quartile) is smaller than the loss realized in the first quartile ($149.6 million ($46,889/operation).

The average operating income in the top quartile of $157,035 represents an aggregate amount of $501 million in net operating income. This shows the skewed and wide variability in the net operating income around the average of just under $40,000 in *Table 4.2*.

TABLE 4.2 Financial Position of the Average Horticulture Operation, 1999 to 2004

ITEMS	2004	2003	2002	2001	2000	1999
Revenues			$/farm			
From horticulture	333,031	326,344	315,887	290,946	292,302	259,253
Government payments	15,825	13,635	13,035	12,008	8,761	7,195
Total operating revenue	371,574	363,599	350,120	323,206	322,189	284,374
Gross income for tax purposes	383,907	371,784	356,917	331,168	329,038	290,852
Expenses						
Crop expenses	98,330	94,577	91,737	85,945	83,224	73,782
Salaries (inc. benefits)	101,583	98,935	95,484	87,529	86,742	75,573
Interest expenses	14,779	14,076	14,582	15,710	14,098	12,570
Total operating expenses	332,290	321,432	308,067	291,097	282,037	244,842
Capital cost allowance	25,146	24,989	23,471	21,801	22,646	20,267
Total expenses for tax purposes	363,249	352,627	336,639	318,496	308,760	269,594
Net Income						
Net operating income	39,284	42,167	42,052	32,108	40,151	39,532
Net operating income after CCA	14,138	17,178	18,581	10,308	17,505	19,266
Net income for tax purposes	20,659	19,157	20,278	12,672	20,278	21,258

Source: Analysis of Statistics Canada ESAS data

TABLE 4.3 Financial Position of Horticulture Operations By Sales Volume, 2003

ITEMS	Under $100,000	$100,000 to $249,999	$249,999 to $499,999	Over $500,000
No of Operations	**6,930**	**2,425**	**1,365**	**2,190**
Revenues				
From horticulture	31,670	139,486	301,850	1,710,186
Government payments	2,432	10,051	20,694	58,434
Total operating revenue	39,108	163,353	354,477	1,890,455
Gross income for tax purposes	43,055	170,126	368,234	1,928,731
Expenses				
Crop expenses	8,145	38,063	87,819	526,955
Salaries (inc. benefits)	5,687	31,520	81,751	509,030
Interest expenses	2,795	9,608	16,635	70,726
Total operating expenses	35,001	138,779	304,831	1,666,479
Capital cost allowance	4,426	13,115	26,918	136,661
Total expenses for tax purposes	41,572	158,226	344,120	1,827,381
Net Income				
Net operating income	4,107	24,575	49,646	223,976
Net operating income after CCA	(319)	11,459	22,728	87,315
Net income for tax purposes	1,483	11,900	24,113	101,350
Off farm income				
Wages & salaries	17,054	14,429	15,403	38,613
Total off-farm income	28,592	26,127	25,597	48,274
Assets				
Current assets	16,470	47,466	117,735	621,931
Long term assets	434,416	724,068	1,038,127	2,701,144
Total farm assets	450,886	771,533	1,155,862	3,323,075
Liabilities				
Current liabilities	6,472	26,198	51,337	259,080
Long term liabilities	51,577	119,286	214,605	780,992
Total farm liabilities	58,049	145,485	265,942	1,040,072
Net worth	392,836	626,049	889,920	2,283,004
Ratios				
Asset Turnover	11.11	4.43	2.93	1.43
Earnings (before tax)/Assets	0.3%	1.5%	2.1%	3.0%
Earnings (before tax)/Net Worth	0.4%	1.9%	2.7%	4.4%
Labour % of Operating Expenses	16.2%	22.7%	26.8%	30.5%
Operating Margin	10.5%	15.0%	14.0%	11.8%

Source: Analysis of Statistics Canada ESAS data

TABLE 4.4 Financial Position of Horticulture Operations By Net Operating Income Quartile, 2003

ITEMS	Lowest Quartile	Second Quartile	Third Quartile	Top Quartile
No of Operations	**3,215**	**3,235**	**3,240**	**3,240**
Revenues				
From horticulture	201,651	63,061	167,100	806,274
Government payments	10,281	3,848	8,978	25,699
Total operating revenue	227,636	74,023	193,089	873,451
Gross income for tax purposes	246,963	76,596	197,872	885,207
Expenses				
Crop expenses	75,092	20,080	50,906	230,583
Salaries (inc. benefits)	69,015	14,795	40,483	236,104
Interest expenses	18,190	3,530	8,440	29,880
Total operating expenses	267,313	67,577	164,920	736,307
Capital cost allowance	17,581	5,946	15,751	58,955
Total expenses for tax purposes	293,543	75,571	185,510	806,590
Net Income				
Net operating income	(39,678)	6,446	28,170	137,144
Net operating income after CCA	(57,259)	501	12,419	78,189
Net income for tax purposes	(46,580)	1,025	12,362	78,617
Operating Margin	-17.4%	8.7%	14.6%	15.7%

Source: Analysis of Statistics Canada ESAS data

TABLE 4.5 Financial Position of Horticulture Operations By Net Operating Income Quartile, 2004

ITEMS	Lowest Quartile	Second Quartile	Third Quartile	Top Quartile
No of Operations	3,190	3,165	3,190	3,195
Revenues				
From horticulture	256,555	68,725	143,201	879,883
Government payments	14,160	4,292	10,332	39,519
Total operating revenue	290,127	79,663	167,525	981,644
Gross income for tax purposes	323,707	83,742	173,567	996,882
Expenses				
Crop expenses	97,280	21,630	45,030	266,794
Salaries (inc. benefits)	91,677	18,013	37,311	246,080
Interest expenses	25,535	3,706	7,254	31,002
Total operating expenses	337,016	74,501	146,904	824,609
Capital cost allowance	22,726	6,120	14,321	71,873
Total expenses for tax purposes	369,009	84,084	165,942	907,538
Net Income				
Net operating income	(46,889)	5,162	20,621	157,035
Net operating income after CCA	(69,615)	(959)	6,301	85,162
Net income for tax purposes	(45,301)	(342)	7,625	89,344
Operating Margin	-16.2%	6.5%	12.3%	16.0%

Source: Analysis of Statistics Canada ESAS data

Furthermore, when capital cost allowance accounts for depreciation then the losses are larger for producers in the first quartile and net income is much smaller at $85,162 for the average producer in the top net operating income quartile.

This data shows that unfortunately over one-quarter of horticultural operations experience losses in income in any year – at least $150 million in 2004. This is 3% of aggregate sales. Moreover, this financial challenge results in a much higher rate on bankruptcy in horticultural production than all of agriculture (by a factor of four). The bankruptcy rate is ten time higher than for poultry farm or for grains and oilseeds operations.

4.3 Financial Position by Horticultural Sub-Sector and Comparisons

The financial position of the horticultural sector by major sub-sector (potatoes, field vegetables, fruits, and greenhouse ornamentals and floriculture) and by most provinces[34] is provided in *Table 4.6*. This data is an average for 2003 and 2004.

A notable difference between sub-sectors is the capital turnover ratio for fruit operations at 4.6 compared to the greenhouse ornamental and floriculture sub-sector at 1.2 and 2.05 for all of horticulture. This implies that for fruit operations it takes 4.3 years of average gross revenues to equal the asset values required to operate a fruit operation – this is indicative of a very capital intensive operation. In the case of tree fruits it can take 5 to 7 years of capital investment before a tree bears fruit. The lower capital turnover ratio of 1.2 for greenhouses, floriculture and ornamentals indicates that just over 1 year of gross sales are required to equal the value of assets employed. This higher capital turnover is one reason why this sector can operate with a lower operating margin (9.1% compared to the other sub-sectors of 13.5% to 14.8%).

Labour accounts for 30% or more of operating expenses in all of the sub-sectors, except for potatoes where it is 18.9%. Potatoes is the one sector that can be more mechanized than in the other horticultural sectors, and does not depend on access to off-shore labour programs for economic viability.

The last eight columns in *Table 4.6* highlight the financial situation for the horticultural sector by province. With Ontario being the largest horticultural province, it has the highest value of assets ($4.3 billion) dedicated to horticulture. In terms of financial ratios, British Columbia and PEI have the highest capital turnover ratios, implying that it takes longer in these two provinces for revenues to equal the value of assets employed (e.g., 2.8 years). The lowest is Manitoba at 1.22 years.

Manitoba does well compared to other provinces in earnings with the highest operating margin 17.1%, and the highest earnings in relation to assets employed and net worth (5.6% and 7.8% respectively). However, Ontario has the lowest operating margin at 9.3% with associated low returns on assets employed and net worth (1.6% and 2.2%). This implies that in the largest horticultural province earnings are lower than in the other provinces and when compared to the sector as a whole across Canada.

34 *Saskatchewan and Newfoundland are not included.*

TABLE 4.6 Financial Position of the Horticulture Sector, and Provinces, Average 2003 and 2004

ITEMS	Pot	Veg	Fruits	GHS/FI	BC	Alb	Man	Ont	Que	NB	NS	PEI
Revenues						$ million						
From horticulture	763	646	636	2,654	964	235	197	2,000	777	179	101	173
Government payments	65	45	52	62	26	16	8	91	46	12	6	15
Total operating revenue	962	777	754	2,800	1,028	277	252	2,224	874	213	127	220
Gross income for tax purposes	1,013	800	785	2,866	1,078	295	261	2,262	901	222	130	231
Expenses												
Crop expenses	282	189	130	832	262	68	68	628	234	59	27	68
Salaries (inc. benefits)	155	196	204	798	286	56	49	607	216	46	33	36
Interest expenses	53	27	46	100	53	13	11	80	33	12	6	15
Total operating expenses	819	672	652	2,545	914	237	209	2,018	757	180	108	198
Capital cost allowance	108	58	56	176	69	31	24	150	62	23	11	21
Total expenses for tax purposes	959	747	727	2,752	1,001	280	238	2,193	841	210	121	226
Net Income												
Net operating income	143	104	102	255	114	40	43	206	117	33	19	22
Net operating income after CCA	35	46	46	79	45	9	19	56	54	10	8	1
Net income for tax purposes	54	53	58	114	78	15	23	69	60	12	9	5
Off farm income												
Wages & salaries	57	65	154	155	115	21	16	149	77	16	17	13
Total off-farm income	90	116	260	235	188	31	18	254	113	24	28	19
Assets												
Current assets	531	210	218	708	281	156	98	555	299	95	28	114
Long term assets	2,158	1,949	3,216	3,362	2,859	592	307	3,744	1,557	555	256	614
Total farm assets	2,689	2,158	3,434	4,070	3,141	748	406	4,299	1,856	649	284	729
Liabilities												
Current liabilities	268	104	107	284	101	50	42	279	116	56	18	84
Long term liabilities	559	374	598	958	621	165	72	843	403	145	50	152
Total farm liabilities	827	478	705	1,242	721	214	114	1,123	518	201	69	236
Net worth	1,862	1,680	2,729	2,828	2,419	557	291	3,177	1,338	449	215	492
Ratios												
Asset Turnover	2.25	2.51	4.26	1.20	2.78	2.12	1.22	1.68	1.78	2.60	2.02	2.80
Earnings (before tax)/Assets	2.1%	2.4%	1.7%	2.8%	2.5%	2.1%	5.6%	1.6%	3.2%	1.8%	3.2%	0.7%
Earnings (before tax)/Net Worth	2.9%	3.1%	2.1%	4.0%	3.2%	2.9%	7.8%	2.2%	4.5%	2.6%	4.3%	1.0%
Labour % of Operating Expenses	18.9%	29.1%	31.3%	31.3%	31.2%	23.4%	23.6%	30.1%	28.6%	25.5%	30.3%	18.2%
Operating Margin	14.8%	13.5%	13.6%	9.1%	11.1%	14.5%	17.1%	9.3%	13.4%	15.4%	15.0%	9.8%

Source: Analysis of Statistics Canada ESAS data

PEI, with its potato economy, does not require as much labour, with 18.2% of operating expenses accounted for by labour (30.5% on average across Canada). At the same time in the 2003 and 2004 period, its low margin coupled with the high asset turnover ratio resulted in low earnings of only 1% on net worth (equity) and 0.7% on assets employed.

The financial performance of the horticultural sector is contrasted with that of other parts of the agri-food supply chain in *Table 4.7*[35]. Assets turnover is much higher in agriculture than in food processing or food retail sales. For example, in horticulture it takes 2.0 years of gross revenue to equal the value of assets employed, while in food manufacturing this is just over 1/2 year (0.6 years) and is just under 4 months for retail sales. Return on assets is much higher in food processing and food retail compared to horticultural production. Return on equity to horticultural producers is less than 1/3 of the ROE to food manufacturers, and under 20% of that realized by food retailers.

TABLE 4.7 Comparison of Financial Performance, 1999 to 2004 averages

	Horticulture	Crops	Animal	Food Processing	Food Retail
Asset Turnover	2.0	1.9	1.9	0.6	0.3
Return on Assets	2.3%	2.0%	2.5%	4.3%	5.5%
Return on Equity	3.1%	7.9%	10.7%	9.9%	15.9%

Source: Analysis of Statistics Canada ESAS data and Conference Board of Canada

The farm income situation has worsened compared to that highlighted in the above sections, which has data available to only 2004. The tougher financial position of the horticultural sector arises from lower cash receipts for 2005 and higher input costs.

Cash receipts for all horticulture decreased by 2.6% in 2005, or $135 million (*see Table 2.3*), which is in stark contrast to the 2.5% to 8.6% year over year growth that has occurred since 1999. This decline can be attributed in large part to appreciation in the value of the Canadian dollar (against the US dollar), which contributed to the reduced value of exports in 2005 by 4.5%, and resulted in downward pressure on prices received for horticultural products.

Input costs have increased each year since 1993 by an average of 8.6% for the sector, driven in part by industry expansion and in part by higher input costs. In 2004, operating costs of $4.6 billion (*Table 4.1*) were 2.8% higher than in 2003. Input expense for the sector will be higher in 2005, by at least 2.0%, or by $92 million.

The net result is that with revenues down by 2.8% ($136 million) and costs up by 2.0% ($92 million), net operating income will be down by $228 million, or by 42% of the 2004 value of $544 million. This is a significant drop in operating returns, and a significant challenge to the horticultural sector. There are a number of challenges affecting farm incomes, which are noted in the next section.

35 *The first column of data is a 5-year average based on data in the above tables, with the other data coming from a study that the Conference Board of Canada conducted for the Canadian Agri-Food Policy Institute entitled "Performance Measures of the Canadian Agri-Food Supply Chain", April 2005. The Conference Board of Canada study used only data filed by incorporated farms, representing more than 60% sector wide cash receipts, which may overstate the return on equity reported, compared to all farms in crop or livestock production.*

5 CHALLENGES AFFECTING FARM INCOME AND SOLUTIONS

The farm income situation in the horticultural sector can be characterized as one with tight margins and low return on assets and equity in comparison to the rest of the agri-food sector. Farm income realized by the horticultural sector is being challenged by a number of factors. These challenges directly affect the net income realized from horticultural production and solutions that can be implemented by the horticultural industry and by government on behalf of the industry are highlighted below.

5.1 Horticulture's Needs Overshadowed by Other Sector Issues

The production diversity of the horticultural sector has worked against the industry when seeking attention of government with regard to the dire situation of the horticultural sector. In particular, the grains and oilseeds sector with just a few main commodity crops (e.g., wheat, barley, oats, canola, corn, soybeans) and their focused lobby efforts with government has resulted in the situation where the grains and oilseed sector receives a disproportionate share of government support dollars. The horticultural sector is affected by the same external forces as the grains and oilseeds sector, namely foreign competition, low-cost competitors, a strong Canadian dollar, and adverse weather[36].

As noted in *Table 1.3*, the horticultural sector surpasses the size of the grains and oilseeds sector in all provinces except the three prairie provinces. Furthermore, across Canada, horticulture's cash receipts of over $5 billion are only 30% less than attributed to grains and oilseeds. As shown in section 3.0, the horticultural sector is a larger contributor to economic activity, with the $5.8 billion in tax revenues generated by production and processing of Canadian horticulture exceeding the gross income realized by horticultural producers.

The horticultural sector is comprised of many large commercially sized and focused operations. For 2004, *Table 4.3* can be used to show that 2,190 operations, which had gross revenues of over $500,000 per annum, accounted for $3.7 billion in gross revenue from operations, or 79% of revenues received by the sector[37]. The 1,365 farms with sales between $250,000 and $500,000 per annum accounted for $400 million in gross revenues, or just under 9% of the sector total.

The concerns of the horticultural sector are those of commercial operations with business focused managers responsible for sizeable investments of over $3.3 million in food production.

Industry Solutions

The CHC, on behalf of its 20,000 producers and member organizations, will begin a campaign which highlights the size, significance, importance and contribution of the horticultural sector to the health of Canadians and to the economic activity within Canada that exists as a result of the production of horticultural products.

36 *The grains and oilseeds sector has an additional argument that they need subsidies to offset the affect of foreign subsidies on price received. This argument has many built in assumptions (such as subsidies encourage more production, governments do not use other mechanisms to curtail production, subsidies do not just increase land values and returns to suppliers of input) that have not been proven. Horticulture competes against a larger off-shore subsidy program, labour which is paid a fraction of Canada's minimum wage.*

37 *The sector average is over $1.0 million in assets.*

Suggested Government Solutions

Initiatives are outlined below which can be implemented by government to assist this dynamic industry.

5.2 Competing with a Strong Dollar

The Canadian dollar has appreciated in value (against the US dollar) by 40% over the last five years, which includes an average appreciation of 6% for the first six months of 2006.

In the open Canadian economy and with the prices for all horticultural products directly affected by the US price of products, the stronger Canadian dollar directly translates into lower gross revenues for the horticultural sector. The 2.8% lower level of cash receipts in 2005 reflects this situation, as well as the 4.5% decrease in the value of horticultural exports in 2005 relative to 2004.

The horticultural sector is not unique in this regard. Producers of cash crops such as wheat, corn, soybeans and canola have been affected equally by the strengthening of the Canadian dollar[38].

Industry Solutions

The strong Canadian dollar may be a long-term reality. Horticultural producers have been responding through strategies such as crop selection, cost control measures, differing investments in new equipment, investing in cost reducing and output enhancing technologies, and expanding scale of operations.

Suggested Government Solutions

One area where the industry requests government assistance is in the area of research and development. Due to the size and significance of the industry, the CHC requests more resources be directed by government into research and development to address unique Canadian production and product development issues. Innovation and new products are integral to success. The CHC believes that this is an appropriate role for government funds, which are also considered green-box dollars by the WTO. The rewards of these expenditures are new product concepts for the market, and lower cost production through productivity improvements.

5.3 Competing Against Low Cost Labour in Off-Shore Imports

Globalization has provided many benefits to Canadian consumers, including access to low cost consumer products. In this global economy the Canadian horticultural sector competes with imports and emerging low-cost suppliers. Essentially the Canadian horticultural sector is competing with low cost labour from these countries. The daily wage in China, for example, is much less than the hourly wage paid by the Canadian horticultural sector. This greatly affects competitiveness when labour is 30% of operating costs across the horticultural sector (*see Table 4.1*).

38 *It can be noted that the CITT noted that a significant amount of the injury to Canadian corn producers was due to the appreciating value of the Canadian dollar*

The issue is not just the cost of labour, but also the availability of labour to Canadian horticulture. Canada has successfully competed against low cost labour in these countries through the off-shore Seasonal Agricultural Worker Program (SAWP). This has provided the industry with access to an adequate supply of competitively priced labour and it should be noted that this is at above minimum wage levels in every province in Canada. It must be further recognized that this is a premium program for the producers due to the cost of airfare, provision of housing and other benefits. Without this labour supply, the industry would not be as large as it is today and contribute as much to the prosperity of the Canadian economy.

Suggested Government Solutions

The CHC strongly requests the continuation and enhancement of the Seasonal Agricultural Worker Program (SAWP). The industry uses this program since local labour is not available to work in the industry. Growers have a wage cost that is well above the local minimum wage rate that is paid to off-shore workers after considering grower incurred costs such as transportation to and from the workers home country, and costs such as housing, CPP, EI, etc. Since these workers may not be entitled to receive the benefits from these programs, the CHC requests that the horticultural industry be exempt from paying these levies and taxes. These exemptions will allow for a more competitive cost structure to compete directly with product coming from low cost exporters.

The other way in which the industry can compete against low cost imports, is to continuously innovate and be leaders in new product introductions. For example, hothouse peppers were introduced into the North American market in a major fashion by the Canadian greenhouse industry. This market is now also being supplied by Mexican competitors. Many new product concepts can be developed to meet consumer needs, whether health related or convenience related. Doing so requires a concerted innovation focus by research and development institutions. The CHC requests government to work closely with industry and expand the R&D capability to allow for productivity gains and new product concepts to be realized by the Canadian industry.

5.4 The Regulatory and Standards Playing Field is Not Level

The horticultural sector is also challenged by different regulatory standards. Canada has world-class regulatory standards in the areas of health, food safety, labour standards, and environmental considerations. The Canadian sector complies with these regulatory standards, and with associated cost implications. However, many low-cost suppliers have a less stringent set of standards, which keeps their cost structure very competitive.

The industry has made a number of representations on this issue, including requesting inspection of each load of imports to ensure compliance with Canadian regulations and standards. This is a continuing irritant that has a negative impact on competitiveness and the net income received from the market by the Canadian horticultural industry.

Suggested Government Solutions

To create a level playing field and to ensure that all products consumed in Canada are produced by the same standards required of Canadian producers, the CHC requests that each export supplier be required to receive an export clearance certificate from their local authorities which indicates compliance with certain minimum standards. These minimum standards would be the same as a minimum set of standards required in Canada. If such standards were not met, imports could not occur as the import documentation would require the export clearance certificate.

This approach is currently in use in the meat industry, where imports into Canada cannot occur unless the meat products were processed in a meat plant that was deemed equivalent to Canadian standards by the CFIA. Another example is that breeding animals cannot be shipped out of Canada into other countries unless all of the required in-country standard and protocols have been met. Implementing such a system, while it may prevent the entry of some low cost products, is designed to ensure that Canadian consumers can be assured that the same environmental, food safety, and labour standards are applied to any of the multitude of horticultural products consumed on a daily basis.

5.5 Regulatory Standards Harmonization With the United States Still Required

The signing of NAFTA resulted in Canadian horticulture becoming an integral part of the continental market. There is a free flow of goods, including horticultural products, across the NAFTA borders, however there is not free flow of inputs used in the production process, and there are different standards that apply in particular markets for finished product. Harmonization and/or standardization of regulations with the United States were part of the (Canada/US) Free Trade Agreement in the 1980's; however this has not occurred in the horticultural sector to any large degree. Regulatory harmonization is one way to achieve a more level playing field for the Canadian horticultural industry.

Suggested Government Solutions

The CHC is of the position that immediate action is required on harmonization with our largest trading partner within this continental market. This action can be supported by industry, but requires government initiative. By doing so our industry can access more markets in the United States, and our cost profile will become more competitive with the cost structure in the United States.

5.6 Horticulture's Diversity Has Its Disadvantages – Access to Inputs

The horticultural sector is very diverse, with 40 different fruits and vegetables (and potatoes and mushrooms) accounted for by Statistics Canada before considering ornamental and nursery crops. The acreage for some crops is under 1,000 acres across Canada (e.g., leeks, brussels sprouts). This low Canadian acreage is insufficient for crop protection material companies to seek registration for a product that may boost production or crop quality.

Accordingly, the playing field is also tilted against the Canadian industry in relation to the United States, where there is access to crop protection materials that are not registered for use in Canada. Non-registration may be based on a regulatory decision or more often on suppliers' decisions not to seek registration. Lack of access to these products can result in lower crop quality and lower yields, both of which reduce gross income.

The sector is very dependent on label extensions and the minor use program that allows access to products that would not other wise be available to Canadian producers. The industry continues to push for equivalence with regard to US product registration.

Suggested Government Solutions

Equivalence to the United States, since Canada is part of the same large NAFTA market, can be implemented by automatic registration decisions in Canada of US submitted products, or by Canadian regulators using the same data package that was used for a US registration. This would result in virtually the same set of crop protection product and materials available to the Canadian industry, with the effect of helping ensure comparable operating costs as occurs in the United States.

5.7 Universal APF Programs Are Not Available to Horticulture

The Agricultural Policy Framework (APF), which governs farm policy, implies universality of government support across the farm production sector, including horticulture. This has not occurred, with an example of production insurance not being available for many horticultural crops, even though this was a feature of the Business Risk Management component of the APF when it was introduced. Less than one-third of the edible horticultural crops have any type of crop insurance or production insurance.

This lack of progress can be directly attributed to the diversity of the horticultural sector with its many crops, and the difficulty of developing cost-effective crop insurance type products for small acreage crops. At the same time, these crops are grown by large operations that are fully dependent on marketplace proceeds for family income purposes.

Programs are required in this high cost sector of agricultural production, where per acre costs are many multiples of per acre costs associated with grains and oilseeds production.

Industry Solutions

Horticultural producers have designed programs to address this programming shortfall, however, governments have decided to either discontinue them without an adequate replacement, or are not interested in introducing them. An example is the SDRM (self directed risk management) program that helped producers manage production related risks. Producers have proposed a CAIS compatible program, the Self Directed Production Insurance Program (SDPI) to help offset weather and disease related production risks; unfortunately this has not been adopted and many parts of the sector do not have access to the same type of risk management programming as other sectors. APF I assured that production insurance would become generally available to all. This has not happened and the Government of Canada has a moral, if not legal obligation to fulfill this commitment. SDPI is proposed as an option to complement the suite of programs available.

The industry also does not have access to the same type of financial protection programs that are available to many grain farmers and livestock producers to protect against bankruptcy of the buyer of horticultural products. The industry has offered solutions to address this inequity, including changes to the Canada Agricultural Products Act and licensing of dealers.

Suggested Government Solutions

The CHC recommends that government work with industry to develop and implement the SDPI type programs proposed by industry. These programs are practical and do not require large bureaucracies to implement and operate as they can be tied to existing information, such as income tax filings, and used for the CAIS program.

The CHC further recommends that a National Plant Health Strategy, which includes a compensation component, be developed and implemented to address devastating losses from plant health pests and diseases.

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39 *At the same time, some government adjustment assistance programs adversely affect the horticultural sector, where for example, tobacco producers are provided adjustment assistance, which allows them to invest in horticultural production. To existing horticultural producers this type of assistance is seen as the government subsidizing entry into the high cost-low margin horticultural sector. Depending on the choice of horticultural crop grown, these subsidized new entrants can destabilize existing markets and business relationships between growers and their customers. This suggests that the focus of adjustment assistance programs may require some rebalancing.*

5.8 Competing Against Imports and Export Promotion

The horticultural sector is not as export focused as grains and oilseeds or the red meat (pork and beef) sector. Government programs are made available to assist export focused industries in maintaining export markets and in growing export sales. The challenges of the horticultural sector are different as many sub-sectors are competing with imports. Government programs and funds are not readily available to promote Canadian product to help the sector grow market share. Furthermore, imported product, such as US produce is promoted in Canadian retail operations with subsidized US taxpayer funds (e.g., cooperative advertising programs in food retail flyers). This anomaly, when addressed, can increase sales and incomes in the Canadian horticultural sector.

Industry Solutions

The horticultural industry proposes to increase its efforts in promoting consumption of Canadian produce in the food service and retail channels. Financial assistance from government is requested in this area.

Suggested Government Solutions

The CHC requests that government make available funding under the APF for promoting Canadian food products to Canadians. These funds can be used by horticulture to increase awareness of Canadian consumers to Canadian product, and can help position the attributes of Canadian product in relation to imported products.

5.9 Position in the Supply Chain and Associated Bargaining Power

Horticultural producers are acutely aware of their lack of bargaining position in the horticultural supply chain. A few major food retail buyers and many producers implies that producers must execute strategies to supply the requirements of demanding retailers, which have access to global supplies 12 months of the year. Canadian suppliers are only one of many suppliers to major buyers of seasonal perishable product, and it is increasingly becoming more difficult to obtain meaningful market access and not be the residual supplier. Some producers enter into supply agreements and/or strategic alliances with major buyers, while others market produce through marketing entities such as “Peak of the Market” and other co-operative ventures. The sale of perishable product must be coordinated with market requirements and buyers receiving timely information on when Canadian product will be available to the market. This allows coordination with other supply sources and can help prevent distress pricing of high-cost perishable product.

At the same time, in this competitive marketplace, government mandated regulatory costs that are unique to Canadian growers cannot be passed on to buyers. Rather horticultural producers absorb these costs, which lowers overall operating returns. Approaches are required to level the playing field with imported product that can be produced under a different regulatory regime and with different standards.

Industry Solutions

Industry will continue to work together to meet market requirements, whether through alliances and supply agreements, or by combining resources and offering needed critical mass to buyers in the market place. As well, the CHC will embark on a program that illustrates the capabilities and supply offering of its members to foodservice and food retail buyers, whether national organizations or those with a more local market focus.

Suggested Government Solutions

The CHC requests that the costs of government mandated activities be funded by government, rather than by producers, as these costs cannot be passed through to consumers. For example, the costs of on-farm food safety programs, whether the delivery costs incurred by our member organizations, or the incremental on-farm compliance costs are funded by government under APF programming. This approach can offset the increased regulatory burden incurred by producers.

Fundamentally the challenges facing the horticultural sector are surviving with a strong Canadian dollar while low cost imports are free to enter the country, both of which place downward pressure on prices received for horticultural products, and costs which continue to increase, whether labour, regulatory, equipment, operating inputs, or land.

6 OPPORTUNITIES AND ASSOCIATED STRATEGIES

Undoubtedly, the horticultural production sector is facing a number of challenges; at the same time however, there are opportunities that await investment by individual operations, the industry collectively and in partnership with government.

These opportunities are highlighted in this section along with proposed action by industry and suggested action for government. A number of these opportunities expand demand and/or the marketing season for Canadian grown horticultural products[40].

6.1 Consumer Demand for Local Products

Consumer research studies reinforce the message that consumers would purchase local product over other products, when price and quality are comparable. While there are buy local programs in some provinces (e.g., Foodland Ontario). Further action could result in larger sales of Canadian horticultural products.

Suggested Government Action – Buy Canadian Government Procurement

Demand for local product can be created by having Buy-Canadian government procurement programs for food products at both the federal and provincial levels. This would include purchases by government and related institutions for food service and canteens operating on premises, as well as for school cafeterias and government sponsored events and conferences at hotels and conference centers. The policy would require purchase of Canadian grown food products when in season and/or available. This action would result in more economic activity throughout the supply chain, as well as increased demand for Canadian grown fruits, vegetables and floral and ornamental products.

Suggested Government Action – Co-Fund Buy Local Programs

To further expand the demand for local products, government can provide funding to fruit and vegetable associations for product promotion. These funds would be used for cooperative advertising with food retailers and in generic buy-local product promotion programs, including signage and shelf displays.

6.2 Positioning of Canadian Products in Domestic and Export Markets

The Canadian agri-food system has a reputation for high standards, and consistency of quality. This is being supplemented by food safety programs through the supply chain, as well as traceability and proof of origin programs. The latter are being supported through the APF. At the same time, the Branding Canada project indicates that in most countries Canadians are considered trustworthy. This platform of trust and production protocols can be used to position Canadian horticultural products in domestic and in export markets. Since food safety programs (e.g., *HACCP*), traceability, and environmental safeguards are now necessary pre-requisites for commerce, these attributes should not be part of the positioning message[41]. Rather the message could focus on the consistent high quality products that come from Canadian horticultural operations, operated by trustworthy Canadians.

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40 *Annex IV lists the opportunities identified in a 2004 report for AAFC and the Horticulture Value Chain Roundtable.*

41 *More precisely, if the message is one of food safety standards and the rare occurrence of an illness due to produce related food poisoning, then the brand is tarnished.*

Suggested Government Action – Positioning Canadian Horticulture

The capabilities, success stories, and product offerings of Canadian horticulture can be made into vignettes for inclusion in public broadcasting and prior to feature films (similar to Heritage Canada vignettes). This information would help reinforce the message on strengths, capabilities, Canadian success stories and importance of the sector to Canadians.

6.3 Minimal Standards for Fruit and Vegetable Products Consumed

As noted in the challenges facing the horticultural sector, Canada has world-class regulatory standards, whether in the areas of health, food safety, labour standards, and environment. While Canadians can be assured that Canadian grown fresh-product is produced according to these standards, this is not the case on some imported products. An example is apple juice from China.

The CHC strongly believes that all product consumed in Canada should be grown based on the same standards, pre-requisites, and broad protocols.

Suggested Government Action – Exporter Certification on Standards Compliance

To ensure that the same minimal set of standards has been achieved, the CHC proposes that shippers of product into Canada are required to have an export clearance certificate from the country of origin, which attests that the minimal standards have been met[42]. Product cannot enter Canada without this documentation, which would be a necessary document for import clearance. Pre-clearance actions would be incumbent on the shipper as product would be turned back at the border if all documents were not in order.

In many cases, the CFIA would recognize the standards used by certain suppliers (whether supply regions such as California, or companies such as Dole), which would allow for easy exporter documentation. In other cases, such as product from China, officials and/or certifying third parties in the exporting region would have to provide the necessary documentation and verification of standards compliance.

The export certification can apply to standards in the areas of:

- Crop protection materials used that are registered in Canada;
- Food safety protocols and pre-requisites;
- Labour standards, minimal age of workers, and working conditions; and
- Human rights

6.4 Fruit and Vegetable Products and Healthy Canadians

The health and wellness of Canadians is an important public policy issue in Canada.

While known to many, but not all, the foods we eat affect individual health and wellness. Fruits and vegetables are known to have many positive attributes for health and wellness[43], which pre-dates the saying "*an apple a day keeps the doctor away*". The horticultural industry has been successfully promoting increased consumption of fruits and vegetables through the 5 to 10 a day!

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42 *This suggested government action was also proposed to address the challenge of an unlevel regulatory playing field.*

43 *It is well known in the health science community that fruits and vegetables reduce the risk of cancer, heart disease and stroke by providing protective substances such as vitamins, minerals, and fibre, as well as plant compounds called phytochemicals.*

For better health program and the new Eating Well with Canada's Food Guide highlights this important fact. Industry will continue to promote the beneficial health attributes of eating fruits and vegetables.

If we hope to take full advantage of the possibilities the agriculture and agri-food industry can offer, we must encourage greater partnerships between the health, agriculture and education sectors and formally recognize the linkages.

Suggested Government Action – Provide Fresh Fruit and Vegetables to Kids

Habits are formed in the early years, and the CHC suggests that government provide funds to schools and day-care centres to offer fresh Canadian grown fruits and vegetables to children on a regular basis. Many ready to eat products are available, ranging from apples and pre-sliced apples, to other tree fruits to berries, to cherry tomatoes, to cucumber slices, to baby carrots, to numerous fresh cut products. This action will create good life-long eating habits and will have an equally positive impact on parents and siblings in the home.

Suggested Government Action – Labeling and Advertising Claims

Enhanced consumer awareness and education on the healthy attributes of foods and overall wellness is an important element in linking the foods we eat to overall health. Government action can support this through allowing for health and wellness benefit statements on product labels and packaging. Such action will increase consumer demand for all fruit and vegetable products, whether fresh, processed, locally grown or imported.

6.5 Growth Through Technologies that Extend the Marketing Season

A large opportunity exists to increase sales through an extension of the marketing season for Canadian grown product. This extension includes enclosed year round production of crops such as occurs now with greenhouse tomatoes, peppers, cucumbers, and some lettuces. It also includes development of varieties for a longer production season, as occurs with some strawberry varieties with two fruiting periods. The marketing season can also be extended with cooling technologies that take out field heat that extends product shelf life. Processing of product that is surplus to immediate market requirements into extended shelf-life fresh cut products, or into preserved fruit and vegetable products also extends the marketing season. Preservation includes not only bottling, canning and freezing, but also drying.

This extension will enable the Canadian industry to increase its share of the produce market from its current 20% share of sales made by wholesalers and distributors. As well, the higher costs of energy will increase transportation costs and make locally grown products more cost competitive. As exhibited with existing greenhouse vegetables, prices received from the market can be much higher than for imported field grown products when the product is grown to quality standards and is marketed to reflect the quality and other inherent attributes. Thus current cost of imported products should not dissuade investment in the industries' future.

Suggested Government Action – Developing New Technology and Innovation

The industry can enter new markets through new processes and technologies. Supporting new product development and innovation is a long standing government role in agriculture and food. This is further supported by *AAFC's Science and Innovation Strategy (May 2006 document)*. In this context, the CHC requests that government dedicate more resources to support basic research in edible horticulture which will: (1) extend the production season of field crops through variety development; (2) adapt varieties for greenhouse production in high value crops with a large import balance such as strawberries, lettuce, onions,

and asparagus; (3) increase shelf life through technologies and processes and packaging for fresh-cut, dried, and partially dried fruit and vegetable products.

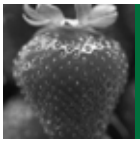
This support can include both more dedicated publicly funded research scientists operating in industry clusters with critical mass, as well as providing grants to support industry initiatives at research facilities.

6.6 Alliances to Provide Critical Mass and Meet Buyer Requirements

Buyer requirements for food service and at retail require critical mass on the supply side to meet those requirements. Alliances, such as Peak of the Market in Manitoba, have allowed growers to have one entity market and sell their products to large buyers. Other alliances have also been formed, whether a few producers, or all producers of a commodity, to jointly market their product. Such alliances have increased sales into volume markets such as food retail and food service. Some growers and some packers have also entered into alliances with growers/packers in other countries to be able to provide either a 12-month supply of product, or supply for a much longer period than available through local production.

Industry Action – Support Alliance Formation

The CHC through its membership and through its network is strongly encouraging the formation of alliances in the horticultural sector. These include horizontal marketing alliances between growers, alliances and supply agreements between growers and buying groups or wholesalers, and alliances with foreign suppliers to offer a product to volume buyers over a longer marketing season.



7 CANADIAN HORTICULTURE VISION AND STRATEGIES

The Canadian Horticulture Council's mission is an unwavering commitment to advance the growth and economic viability of horticulture by encouraging cooperation and understanding to build national consensus on key issues, thereby delivering unified and clear representation to governments and other national and international parties.

Within this mission and organizational mandate, the Council's vision for the horticultural sector is simply to …

"grow profitably to double the value of horticultural production to $10 billion and to double the market share of Canadian grown produce in the food service and food retail channels by 2020"

Achieving this vision and the associated annual growth rate of 4.8% requires implementation of a number of supporting strategies. Many of these strategies and actions were highlighted in the two prior sections as the sector responds to the immediate challenges and invests in opportunities.

The high level strategies to achieve this vision are:

1. Promote Canadian fruit and vegetable products to Canadians;
2. Promote the linkage of fruit and vegetable consumption to the health and wellness of Canadians;
3. Implement Buy-Canadian procurement programs for food by government agencies;
4. Increase consumption of fruits and vegetable through buy-local programs;
5. Encourage alliance formation in the horticultural sector;
6. Identify, develop and adopt technologies that extend the marketing season;
7. Recapture regulatory costs through APF programming;
8. Maintain and enhance the Seasonal Agricultural Worker Program (SAWP);
9. Ensure universally available programs for business risk management under the APF are available to all horticultural growers;
10. Provide grower access to all crop protection materials available to the United States and European Union growers;
11. Harmonize regulatory standards with the United States on product grades and inputs used; and
12. Ensure that Canadian minimum standards on all aspects of horticultural production apply to all horticultural products imported into Canada and consumed in Canada.

A number of these strategies require action and support with our industry partner, the federal government of Canada.

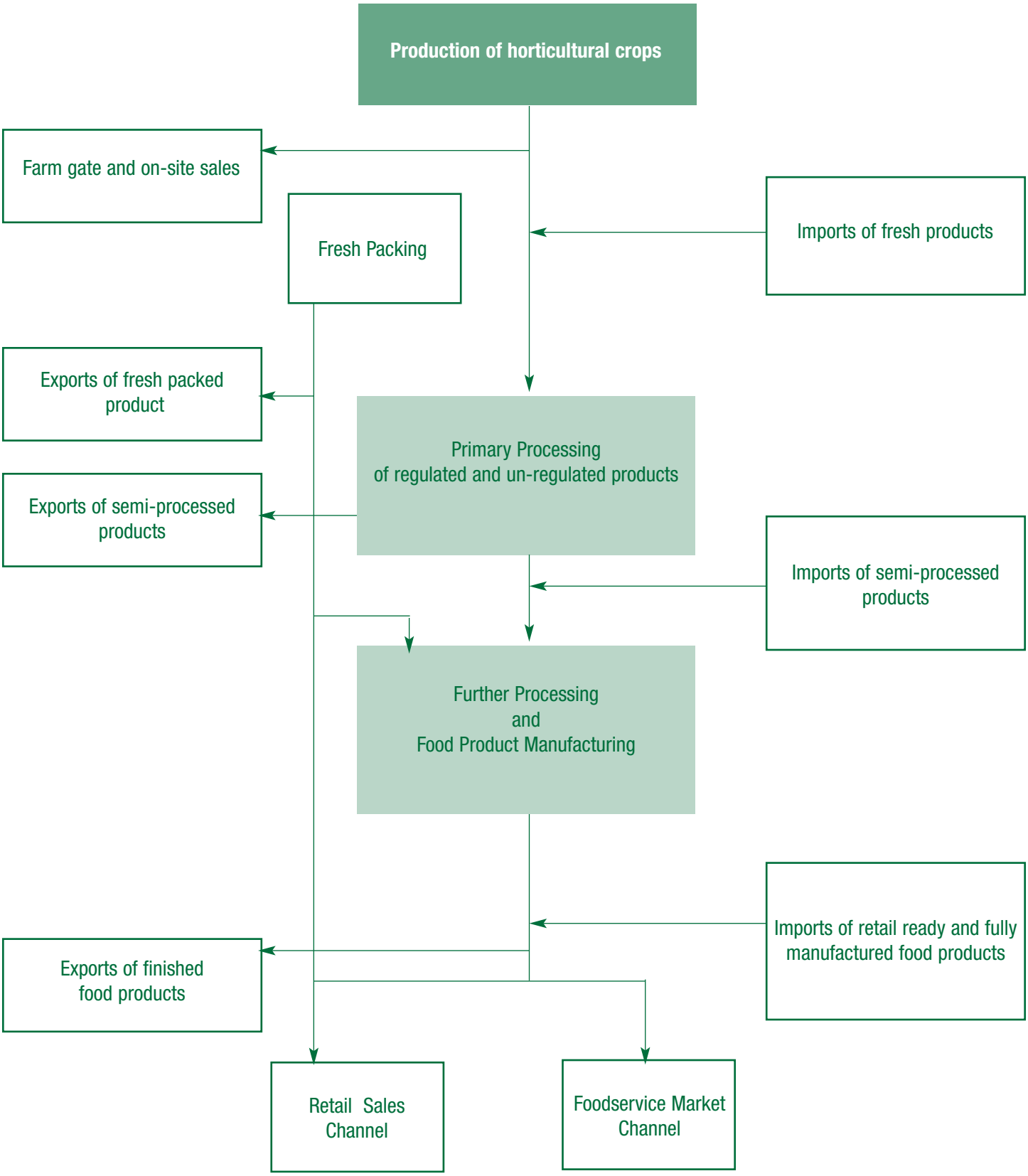
ANNEX

Fresh Thinking for a Competitive Canada:

Growing the Five Billion Dollar Canadian Horticultural Production Sector

CHC / CCH

Canadian Horticultural Council
Conseil canadien de l'horticulture


Production of horticultural crops
Farm gate and on-site sales
Fresh Packing
Imports of fresh products
Exports of fresh packed product
Primary Processing of regulated and un-regulated products
Exports of semi-processed products
Imports of semi-processed products
Further Processing and Food Product Manufacturing
Imports of retail ready and fully manufactured food products
Exports of finished food products
Retail Sales Channel
Foodservice Market Channel

Inter-industry tables (or process schedules) are widely used accounting frameworks for the analysis of sectoral linkages[44]. In this framework, sectoral relationships appear in a web of interconnectedness since each sector is considered to buy its input requirements from many sectors and sell its outputs to several other sectors and compete for some scarce factors with other sectors

Input-output analysis quantifies the linkages that an industry has with other industries in the economy. Specifically, an industry may buy or sell directly from only a few industries, but its customers and suppliers may be intricately connected to other unrelated industries. As a result, this industry may have a profound influence on the economy through its indirect relations with other industries. Using potatoes as an example; potato production requires seed potatoes that come from within agriculture, machinery from industry, energy from the mines and refineries, fertilizers and pesticides from the chemical industries and labour. These define the direct requirements to sustain the production of potatoes.

The supply of fertilizer requires energy, chemicals, labour and machinery and the production of machinery requires steel, plastics, energy and skilled labour. The sum total of these outputs and their successive requirements define the indirect requirements.

At every stage of production incomes are paid to workers and other factors of production. These incomes after taxes are spent on consumption bundles that require deliveries of output. The sum total of these deliveries is referred to as the induced effects.

When the direct, indirect and induced effects are summed we derive the total effects of a given change in the output of a given sector. These impacts are provided for the horticultural production sector, the net impact of the packing sector (excluding the impact of horticultural production), the net impact of fruit and vegetable processing (while excluding the impact of horticultural production, the effect of packing and processing combined, and the total contribution of horticultural production combined with packing and processing. The results are shown in *Table II.1*.

These values highlight the economic impact of the horticultural sector in Canada. That is, the impact of packing and processing is based on the assumption that these activities would not occur in Canada if local production were not available. Wholesale and distribution activities would still occur in Canada in support of retail and food service consumption of horticultural products.

44 *Wassily Leontief. 1966. Input-Output Economics. Oxford: Oxford University Press, A. Smyshlyaev (Ed.). 1985. Input-Output Modeling. New York. IIASA., William H. Miernyk. 1965. Input-Output Analysis, New York. Random House.*

TABLE 11.1 Economic Impact of Horticulture Production, Packing & Processing, 2004

	Horticulture Production	Net Packers	Net Processors	Packers & Processors	Total
Initial Expenditure ($ Mil.)	$5,501	$1,144	$4,740	$5,884	$11,385
Gross Output ($ Million)					
Direct	$5,341	$1,090	$4,724	$5,814	$11,155
Indirect & Induced	$5,596	$3,844	$8,452	$12,296	$17,892
Total	$10,937	$4,934	$13,176	$18,111	$29,047
Multiplier	*2.1*	*4.3*	*2.8*	*3.1*	*2.6*
Value Added ($ Million)					
Direct	$3,063	$596	$2,984	$3,580	$6,643
Indirect & Induced	$3,849	$1,192	$1,724	$2,916	$6,765
Total	$6,912	$1,788	$4,708	$6,496	$13,408
Multiplier	*1.3*	*1.6*	*1.0*	*1.1*	*1.2*
Wages & Salaries ($ Mil.)					
Direct	$1,830	$447	$954	$1,401	$3,231
Indirect & Induced	$2,203	$895	$1,620	$2,515	$4,718
Total	$4,033	$1,342	$2,574	$3,916	$7,949
Employment					
Direct	51,344	9,876	28,919	38,795	90,139
Indirect & Induced	56,742	15,174	35,384	50,558	107,300
Total	108,085	25,050	64,303	89,353	197,438
Multiplier	*2.1*	*2.5*	*3.0*	*2.9*	*2.4*
Taxes ($ Million)					
Federal	$1,607	$537	$1,145	$1,682	$3,290
Provincial	$911	$348	$673	$1,022	$1,932
Local	$301	$101	$214	$315	$616
Total	$2,819	$986	$2,032	$3,019	$5,838

Source: Econometric Research Limited

The impact model used is a special application of a generic regional impact model (*RIM: Canada*) developed by *Econometric Research Limited*. It is a unique model that captures the economic impact of different activities at the local level, the provincial level and the national level. The model is based on a novel technology that integrates input-output analysis and location theory[45].

The model utilizes a large set of economic and technical databases for Canada that are regularly published by Statistics Canada[46] [47]. A short list includes the inter-provincial input output tables, employment by sector, taxes by type of tax and the level of government collecting it, prices of products, etc.

45 *The system has already been applied to the study of the economic impact of Tobacco Agriculture in Southwestern Ontario, The Economic Impact of the Canadian Wheat Board on the Prairie Region, Great Whale Project in Quebec and several large investment projects in New York, the economic Impact of Casino Windsor Casino Niagara and RAMA, the economic impact of large real estate developments in Ottawa and Windsor, the economic impact of Hamilton Harbour, horseracing and breeding in Ontario, and several proposed manufacturing and tourism projects in Alberta, British Columbia and Ontario.*

46 *Statistics Canada: Inter-provincial Input Output Tables, Catalogue No. 15F0042XDB.*

47 *The latest complete data set available from Statistics Canada at the time of analysis was 2001 data.*

A TAX REVENUES RECEIVED BY GOVERNMENT GENERATED BY HORTICULTURE

Table III.1 highlights the type of tax received by each level of government based on the total tax contribution of the horticultural sector (based on the shipments of primary product by processors and packers). The personal income tax system is the largest recipient of tax revenue at $2.2 billion, followed by the Goods and Services tax at $0.8 billion, corporate profits taxes at $0.7 billion, and property and business taxes at $0.6 billion.

Table III.2 highlights the taxes generated by level in the supply chain, primary horticultural production, packing and processing, and the total of these activities.

TABLE III.1 Taxes by Level of Government and Type of Tax, All Horticulture, 2004/2005

	Federal	Provincial	Local	Total
	$'000,000	$'000,000	$'000,000	$'000,000
Personal Income Tax	1,376	869		2,245
Indirect Business Tax		419		419
Goods & Services Tax	809			809
Corporate Profit Taxes	454	234		688
Property & Bus. Tax			616	616
Tobacco & Liquor Tax		331		331
Employment Insurance	326			326
Workmans Comp.		79		79
CPP Contributions	326			326
Total	**3,290**	**1,932**	**616**	**5,838**

Source: JRG Consulting Group and Econometric Research Limited calculations

TABLE III.2 Government Revenues by Type of Tax by Horticulture Sub-sector, 2004/2005

	Horticulture	Packing	Processing	Total
	$'000,000	$'000,000	$'000,000	$'000,000
Personal Income Tax	1,066	425	754	2,245
Indirect Business Tax	188	84	147	419
Goods & Services Tax	405	117	287	809
Corporate Profit Taxes	363	56	269	688
Property & Bus. Tax	301	101	214	616
Tobacco & Liquor Tax	149	66	116	331
Employment Insurance	155	62	109	326
Workmans Comp.	37	15	26	79
CPP Contributions	155	62	109	326
Total	**2,819**	**986**	**2,032**	**5,838**

Source: JRG Consulting Group and Econometric Research Limited calculations

A INDUSTRY OPPORTUNITIES: HORTICULTURE

Many opportunities are available to the horticultural sector. In the report "*The Horticulture Sector; Strengths, Weaknesses, Opportunities, and Threats and Associated Key Issues*" prepared for Agriculture and Agri-Food Canada and the Horticulture Sector Value Chain Roundtable (April 2004) by **JRG Consulting Group**, the following opportunities were noted:

At the Grower Level

- Develop world class quality standards to differentiate Canadian produce from competitors;
- Diversification of production into more niche and value added horticultural crops and varieties;
- Extension of shelf life and improvement of quality by growers forming cooperatives to invest in cooling equipment to take out field heat, expanded use of irrigation to increase product consistency;
- Extend the marketing season through investments in proper pre-storage cooling, storage and in varieties;
- Focus on the eating quality of produce, through variety selection, production management, harvesting, cooling, storage and grading;
- Develop (better) forecasting tools to provide pre-harvest information to shippers and buyers on estimated harvesting/ marketing windows; and
- In short season product areas, develop alliances with global packers, to be part of their continental supply chain.

At the Shipper/Packer Level

- Simplifying procurement process of buyers by achieving economies of scale and providing critical mass to the retailers and food service distribution centers through amalgamating supplies – this can be achieved by cooperative approaches of growers and/or shippers whereby the advantages of scale are realized by the grower and by the buyer;
- Through cleaning and sorting, increase the quality and consistency of produce packed and/or marketed into food service and retail sectors to result in higher yields and portion in food service and appearance in retail to compete directly with imported product,
- Segment markets through quality discrimination across market channels.
- Provide critical mass to market channels through shipper cooperative programs, and through shippers making a business case of being a 12 month supplier and/or broadening the product mix – shippers can build on the existing infrastructure in sub-sectors with long season product offerings, such as apples, root crops, mushrooms, and greenhouse products;
- Provide innovative products and packing concepts for the food service and retail segments;
- Standardization of good arrival guidelines, grades and inspection procedures for produce across North America; and
- Managing the product category on behalf of the retailers.

At the Processor Level

- Improved asset utilization by processors by stretching the processing season through varieties, storage, and complementary crops;
- Value added products, such as fresh cut;
- Promote frozen as a convenience food alternative to fresh;
- Pre-cuts, such as prepared salads, stir fry ingredients.

At the Distributor/Food Service/Retail Level

- Growth in sales to food service as a result of growers and shippers understanding key performance criteria of food service operators – cost per portion, yields, requirements for consistent product and clean product; and
- Shorten the supply chain and improve food safety by focusing on local grown, fresh produce.

Across Levels in the Supply Chain

- Undertake extensive market research to understand the impact of changing demographic trends among Canadian consumers (age, ethnicity, family size, etc.) to ensure that the industry is responsive to and prepared for long term trends;
- Stimulate more innovation and development of more niches by making market access for trials less costly and more col laborative between growers and retailers;
- Create standards for produce where standards do not exist and grade product to those standards;
- Review current standards, and modify where necessary to meet the requirements of various market channels;
- Understand food service market requirements, and deliver on those attributes to capture the growing market opportunities;
- Understand trends in the value chain in the United States and implement concepts in Canada;
- Develop and implement a food safety (HACCP based) and traceability system for the sector, which meets general industry requirements, that is consistent with systems used in the United States, and that are accredited by well established recognizing bodies, such as AIB, ASI, etc.;
- Apply point of origin promotion and branding programs for Canadian product;
- Develop a Canada wide branding program for produce, including processed fruits and vegetables and horticultural products used as a major input or ingredient in other food products – this program would be based on various positioning attributes, such as freshness, taste profile, consistent quality, and trust based on protocols followed in the supply chain;
- Growth in the 5 to 10 a day! For better health program;
- Implement information sharing programs that allow food service operators, distributors, shippers and growers to present and discuss their supply chain issues, with the objective of partnering to resolve many of the supply chain issues;
- Minimize differences between the United States and Canadian grade standards for produce;
- Increase the visibility and significance of the sector to government and the agri-food sector at large;
- Make country of origin labeling mandatory and market a Canadian brand; and
- Develop a centre to create and field test technology to assist value added marketing concepts in the produce industry.

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