An Overview of the Canadian Agriculture and Agri-Food System

May 2006

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Agriculture et Agroalimentaire Canada

Canada

AN OVERVIEW OF THE CANADIAN AGRICULTURE AND AGRI-FOOD SYSTEM

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This project would not have been possible without the statistical support and desktop publishing support of Shuhua Gao and Nasreen Islam and without the agriculture and agri-food sector expertise and insight of Eileen Krakar.

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Note to Readers

This publication reflects the latest data available as of May 2006.

Due to rounding, totals may not add to the sum of their components.

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FOREWORD

This 2006 report provides an economic overview of the Canadian agriculture and agri-food system. It begins by looking at the contribution of the system to the whole economy, then each segment of the agri-food chain is reviewed, going upstream from consumers to food distribution, food, beverage and tobacco (FBT) processing, primary agriculture, all the way to input supply. Charts, figures and tables with brief accompanying texts are used to summarize information and to provide base performance indicators.

This report is meant to be a multi-purpose reference document to provide:

- an introduction to the agriculture and agri-food system;
- a snapshot of structural changes that are occurring throughout the system in response to various factors; and
- background data and information to inform public discussions on issues facing Canadian agriculture.

The report reveals the Canadian agriculture and agri-food system to be a highly complex, integrated and internationally competitive supply chain that is a growing part of the Canadian economy. It is a resilient system undergoing continuous change and facing challenges as it adapts to the forces of changing consumer demands, advancing technology, North American integration and globalization.

HIGHLIGHTS

- The agriculture and agri-food system plays an important role in the Canadian and provincial economies, providing one in eight jobs and accounting for 8.1% of total Gross Domestic Product (GDP) in 2004.
- Export opportunities are critical for the growth of most agriculture industries. Canada was the fifth largest exporter of agriculture and agri-food products in the world in 2004, after the EU(25), the U.S., Brazil and Australia with exports valued at $26.5 billion. Canada was also the fifth largest importer of agriculture and agri-food products with imports valued at $20.4 billion.
- The system is becoming more internationally focussed both in terms of investment and trade. Accumulated foreign direct investment (FDI) in the system has more than doubled since 1990, and in 2003 was valued at $36.5 billion. At the same time, Canadian food processing and retail firms have been expanding abroad and now rank among the world's top food processing and retail firms.
- Innovation is a key determinant to competitiveness, with R&D as a major input to innovation. R&D spending in the agriculture and agri-food sector has been increasing over time. However, R&D intensity in the industry is lower than that of total manufacturing. The industry also continuously searches for innovative products such as bioproducts and functional foods and nutraceutical products that may provide an excellent market opportunity for the industry to diversify to meet the challenges in a competitive global market.
- Changing demands of consumers are influencing changes throughout the whole agriculture and agri-food system. Consumers are demanding more variety, more convenience and healthier food choices, accompanied by proper assurances of quality and safety. But Canadians still enjoy some of the lowest food cost in the world with food accounting for only 10% of household expenditures.
- While primary agriculture accounts for a small share of the total economy, it is at the heart of the agriculture and agri-food system, which encompasses processing and distribution activities as well.
- Aggregate market revenue varies by sector and by region. Oilseeds and red meats are becoming of greater importance in the Prairies while poultry, dairy and horticulture are growing in British Columbia and the eastern part of Canada.
- Because agriculture producers differ widely in terms of commodity specialization, scale of operation, motivation for farming and financial performance, the income impact of livestock disease and low commodity prices varies widely among farms. In general, top performers tend to have

better cost control, which, along with government program funding, will help them weather the financial difficulties. Government program payments reached a record high of $5 billion in 2005.

- Input supplies and service providers perform important functions in the agri-food chain. In 2004, producers spent over $30 billion on operating expenses with input supplies and services constituting the largest part of expenses. In addition to already large input expenses, recent increases in energy costs for fuel, fertilizer and pesticides are putting added pressure on farm income.

- Total government - federal and provincial - support to the agriculture and agri-food sector is estimated at $7.7 billion in 2005-06, up from the previous year's level. However, it is slightly lower than the 2003-04 record of $8.3 billion, which accounts for government's response to exceptional circumstances (BSE, droughts).

  Government support to the sector varies across provinces. On the basis of government support as a percentage of agricultural GDP, the Prairie provinces and Prince Edward Island received the most support.

  In 2005-06 fiscal year, program payments continue to account for the largest portion of either federal or provincial government expenditures in support of the sector.

  Canada's Producer Support Estimate (PSE) for all commodities is estimated at 21% in 2004 compared to 18% for the U.S. On a commodity basis and in comparison to the U.S., Canada's PSE is lower for grains and oilseeds and higher for red meats.

  In comparison to its 1986-88 average, Canada's PSE has dropped significantly. This drop indicates that the agriculture sector has become less reliant on government support.

SECTION A

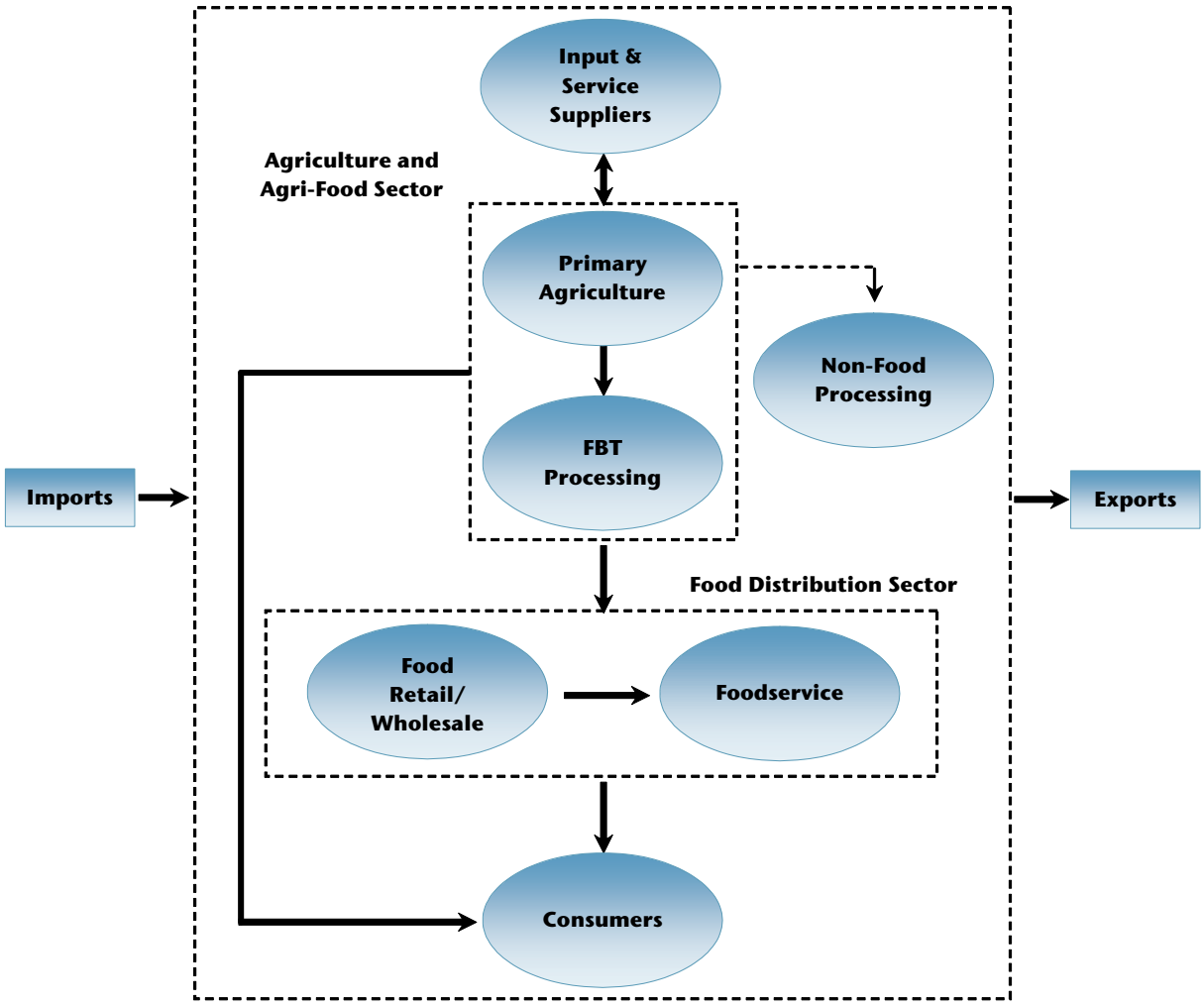
The Agriculture and Agri-Food System and the Canadian Economy

The agriculture and agri-food system is a complex integrated chain...

- **The Canadian agriculture and agri-food system is a complex integrated production and distribution chain of industries that supplies food, beverage and tobacco to both Canadian and international consumers. It is an integral part of the global economy with trade occurring at each stage in the chain.**

  The component industries include agricultural input and service suppliers, primary agriculture, food, beverage and tobacco (FBT) processing, food retail/wholesale and foodservice[1]. The agriculture and agri-food sector encompasses both primary agriculture and food processing. The food distribution sector is made up of food retail/wholesale and foodservice.

The Agriculture and Agri-Food System



- **The agriculture and agri-food system continues to evolve. Some of the factors driving structural changes within the system include changing consumer demands, knowledge-intensive technology, North American integration and globalization.**

Lines of division between different stages in the system are blurred. For example, grain companies can simultaneously act as food processors, livestock feed producers, input wholesalers of livestock feed, farm product wholesalers and grain exporters.

There is a general trend toward increasing scale of operation across the system. Each stage is becoming more concentrated and consolidated. At the same time, supply chains within the system are becoming more tightly vertically coordinated.

Supply Chain Initiatives

In an effort to respond to changing consumer demands, to increase supply chain efficiencies and to reduce production and transaction costs, various kinds of supply chain initiatives are being undertaken by players in the agriculture and agri-food system. These initiatives generally fall under two categories: initiatives that provide closer vertical co-ordination between players at different stages of the supply chain and initiatives that involve horizontal co-ordination.

Initiatives that Provide Closer Vertical Co-ordination

Firms are vertically integrating by investing in businesses in other stages of the supply chain. Maple Leaf Foods Inc. is an example of a company that has holdings throughout the supply chain. Its businesses include feed manufacturing (Landmark Feeds and Shur-Gain), hog production (Elite Swine), pork packing (Maple Leaf Pork Co.), further pork processing (Maple Leaf Consumer Foods Co.) and rendering (Rothsay Co.)[2].

Value chains are developing as firms at different levels in the supply chain are collaborating to produce commodities that meet specific market objectives. The Global Forage Alliance is a value chain initiative producing high quality timothy hay for exports. The value chain involves several primary producers, processors and marketing and distribution firms.

Firms are also developing private standards and using contractual arrangements to gain greater control over the quality of their inputs and products. Wendy's International, Inc., for example, requires suppliers to meet their standards for the humane treatment of animals, and uses audits to make sure the standards are being upheld[3]. Warburtons Bakery in Great Britain contracts with Prairie growers for specific Canadian Western Red Spring wheat varieties that must meet certain quality standards.

Initiatives that Involve Horizontal Co-ordination

Firms at each stage of the supply chain also work together to meet specific market objectives. The main objectives of most producer, processor, grocer and foodservice associations are market promotion, research, exchange of information and the establishment of a political voice. More recently, horizontal initiatives have been focussing on product quality improvement. For example, farmers, through their producer organizations, have collaborated to develop the Canadian Food Safety and Quality Program, which is based on the Hazard Analysis Critical Control Point (HACCP) principles.

SECTION A1

GDP and Employment

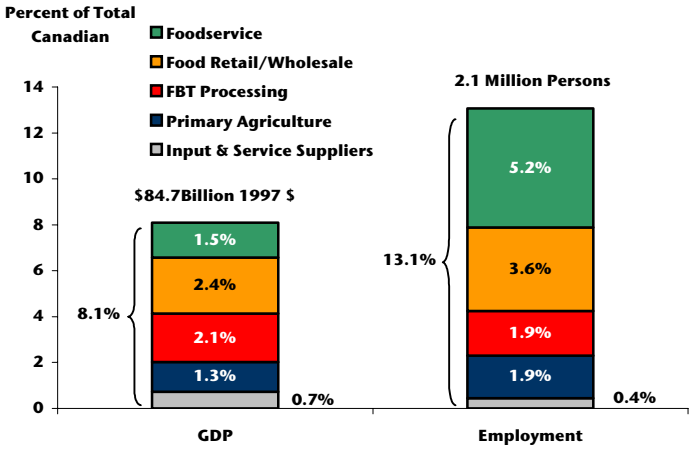
The agriculture and agri-food system plays a significant role in the Canadian economy

- **The Canadian agriculture and agri-food system accounted for 8.1% of total Canadian Gross Domestic Product (GDP) in 2004.**

  The system provides one in eight jobs, employing nearly 2.1 million persons. The system also indirectly generates employment in other economic sectors.

Chart A1.1

The Agriculture and Agri-Food System's Contribution to GDP and Employment, 2004



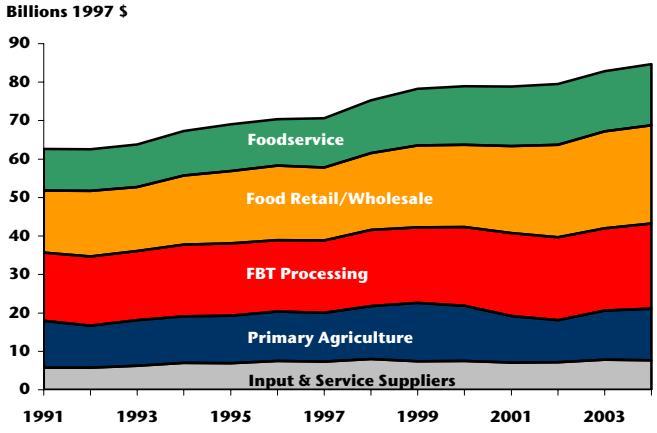
Source: Statistics Canada and AAFC calculations.

- **Value-added production is leading the growth of the system.** Value-added production includes FBT processing, food retail/wholesale and foodservice. Food retail/wholesale is the fastest growing component with an average annual growth rate of 3.7% followed by foodservices with an average annual growth rate of 3%.

  The overall system has been growing in size at 2.4% per annum, which is below the growth rate of the overall economy.

Chart A1.2

The Agriculture and Agri-Food System's Contribution to GDP, 1991-2004



Source: Statistics Canada and AAFC calculations.

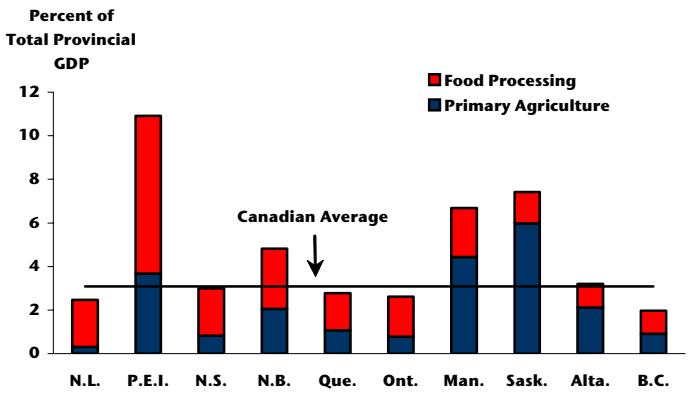
It is also an important source of income to provincial economies

- **In terms of contribution to total provincial GDP, agriculture and food processing plays the largest role in Prince Edward Island, claiming over a 10% share, while Saskatchewan and Manitoba had a 7% share.**

  The mix between primary agriculture and food processing also varies across the country. East of Manitoba, food processing accounts for the majority of the agriculture and agri-food sector's share of provincial GDP. In the Prairies, primary agriculture plays a more important role.

Chart A1.3

The Agriculture and Agri-Food Sector's Contribution to Provincial GDP, 2004



Source: Statistics Canada.

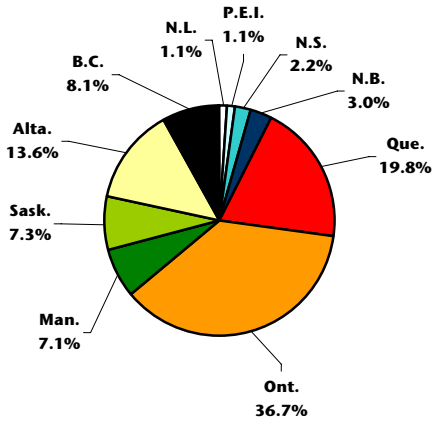
Note: Excludes Beverage and Tobacco processing.

- **The size of the agriculture and agri-food sector varies across Canada.**

  In 2004, Ontario, Quebec and Alberta sector GDP accounted for 70% of the total provincial contribution to Canadian agriculture and agri-food sector GDP.

Chart A1.4

The Provincial Contribution to Canadian Agriculture and Agri-Food Sector GDP, 2004



Source: Statistics Canada.

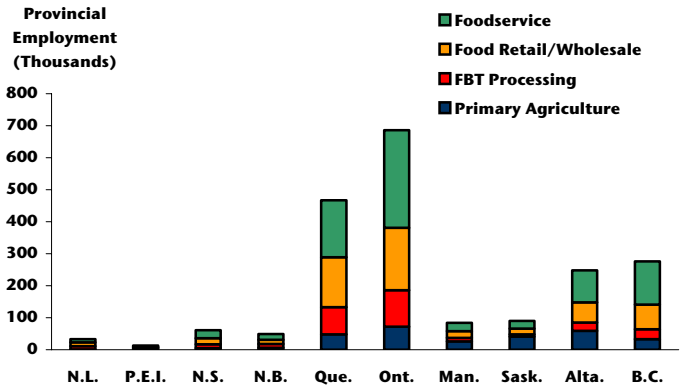
Note: Excludes Beverage and Tobacco processing.

...and as a major employer

- **While Ontario and Quebec have the most people employed in the agriculture and agri-food system ...**

Chart A1.5

Provincial Employment in Agriculture and Agri-Food System, 2004



Source: Statistics Canada and AAFC calculations.

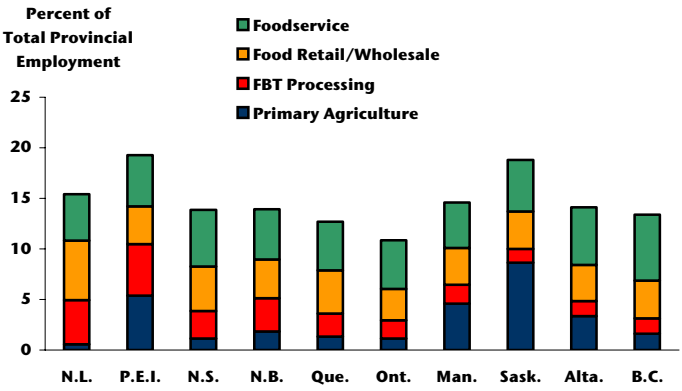
Note: Provincial input & service suppliers have been excluded because of reliability and confidentiality data concerns with many of its component industries.

... the system accounts for the largest shares of provincial employment in Prince Edward Island and Saskatchewan.

In Prince Edward Island and Saskatchewan, primary agriculture and processing industry employment accounts for more than 50% of the total agriculture and agri-food system employment, while in most provinces, employment in food distribution accounts for the largest share of total employment in the agriculture and agri-food system.

Chart A1.6

The Agriculture and Agri-Food System's Share of Provincial Employment, 2004



Source: Statistics Canada and AAFC calculations.

Note: Provincial input & service suppliers have been excluded because of reliability and confidentiality data concerns with many of its component industries.

The agriculture and agri-food sector is a large purchaser of other sectors' products and services...

- **Primary agriculture is a large user of energy products and repair and maintenance services.**

  For example in 2002, it purchased 7.4% of all industrial diesel oil used, accounting for 5.8% of the total value of diesel production in Canada.

Chart A1.7

Primary Agriculture's Variable Cost Purchases of Other Sectors' Output, 2002

	Primary Agriculture's Purchases		
	Expenditure (Millions $)	Share of Total Industry Purchases (%)	Share of Total Domestic Output (%)
Energy Purchases			
Diesel oil	497	7.4	5.8
Motor gasoline	285	5.8	1.9
Electric power	690	3.5	2.1
Repair & Maintenance Purchases			
Repair construction	857	4.1	4.1
Automotive repair and maintenance service	200	4.7	2.0
Lubricating oils and greases	55	4.9	4.7
Other Purchases			
Non-life insurance	307	5.3	2.2
Accounting and legal services	729	4.7	4.0

Source: Statistics Canada.

Note: The I-O commodities are at the worksheet level.

- **FBT processing is a major purchaser of paper, fabricated metal products, plastic, glass and glass products.**

  It is also an important user of advertising and promotion services.

Chart A1.8

FBT Processing's Purchases of Other Sectors' Output, 2002

	FBT Processing's Purchases		
	Expenditure (Millions $)	Share of Total Industry Purchases (%)	Share of Total Domestic Output (%)
Advertising and promotion[1]	1,700	7.8	7.7
Packaging Purchases			
Paper boxes, cartons and drums[1]	1,761	45.2	42.2
Other metal end products[2]	999	51.5	63.3
Plastic containers and closures[3]	1,153	13.0	11.1

Source: Statistics Canada.

Note: 1) The I-O commodities are at the worksheet level.
2) The I-O commodities are aggregated at the link level. The animal food manufacturing, dairy product manufacturing, sugar and confectionery product manufacturing and tobacco manufacturing industries are excluded due to confidentiality reason.
3) The I-O commodities are aggregated at the link level. The brewery industry are excluded due to confidentiality reason.

...and in turn, is a key supplier

- **At the same time the agriculture and agri-food sector is a key supplier to other industries.**

  For example, in 2002 the agriculture and agri-food sector supplied $198 million worth of fuel wood (or 25% of all fuel wood produced).

  It also supplied $266 million worth of raw animal hides and skins, $53 million of which was used as input into the domestic leather and hide manufacturing industry.

Chart A1.9

Other Sector's Purchases of Agriculture and Agri-Food Sector's Output, 2002

	Primary Agriculture Output	FBT Processing Output	Agriculture and Agri-Food Sector Output	Output of all Domestic Industries
	(Millions $)			
Other forestry products including fuel wood and cork	198	0	198	777
Raw animal hides and skins	2	264	266	278
Animal and vegetable fertilizers, imputed	322	0	322	322
Animal by-products for industrial use	224	18	242	243

Source: Statistics Canada.

Note: The I-O commodities are at the worksheet level except for the raw animal hides and skins and the animal by-products for industrial use for FBT processing, are aggregated at the link level.

SECTION A2

International Trade

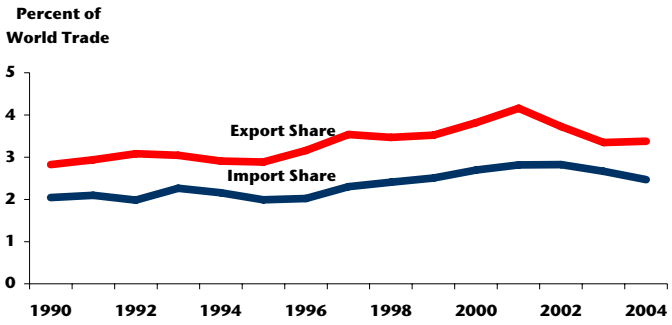
Canada is a major player in world agri-food trade

- **Canada's export and import share of world agriculture and agri-food trade grew steadily during the 1990's.** However between 2001 and 2003, Canada's export share declined, impacted by several factors: adverse growing conditions, trade restrictions related to BSE and a stronger Canadian dollar. In 2004, this trend was reversed and Canada's share represented 3.4%.

  In 2004 Canada exported $26.5 billion in agri-culture and agri-food products and imported $20.4 billion.

Chart A2.1

Canada's Share of World Agriculture and Agri-Food Trade, 1990-2004

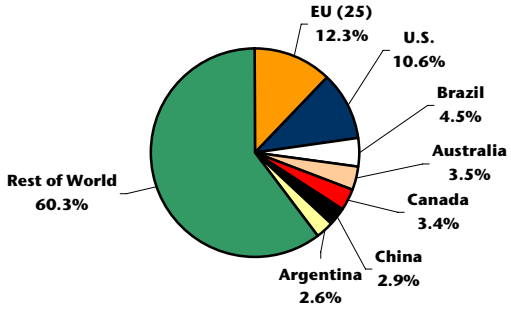


Source: Statistic Canada, FAO and AAFC calculations.

- **Canada is the fifth largest agriculture and agri-food exporter,** after the EU(25), the U.S., Brazil and Australia and is ahead of China and Argentina.

Chart A2.2

World Agriculture and Agri-Food Export Share by Country of Origin, 2004



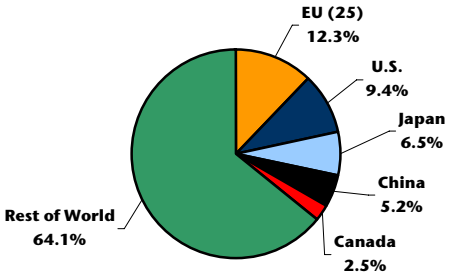
Source: Statistic Canada, FAO and AAFC calculations.

Note: Excludes EU(25) intra-regional trade.

- **Canada is the fifth largest agriculture and agri-food importer,** after the EU(25), the U.S., Japan and China.

Chart A2.3

World Agriculture and Agri-Food Imports Share by Country of Origin, 2004



Source: Statistic Canada, FAO and AAFC calculations.

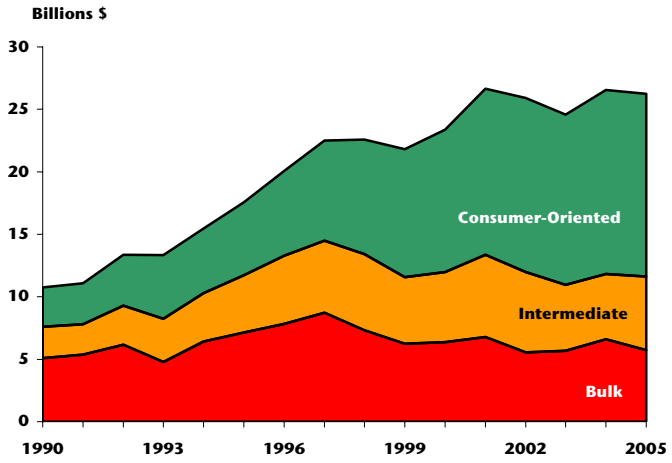
Note: Excludes EU(25) intra-regional trade.

Trade growth is being driven by value-added products

- **The export value of consumer-oriented products has more than quadrupled since 1990, and now makes up more than one-half of all export sales**.

  In 2005, export sales were $26.2 billion reaching almost the peak record of 2001.

Chart A2.4
Agriculture and Agri-Food Export Sales, 1990-2005

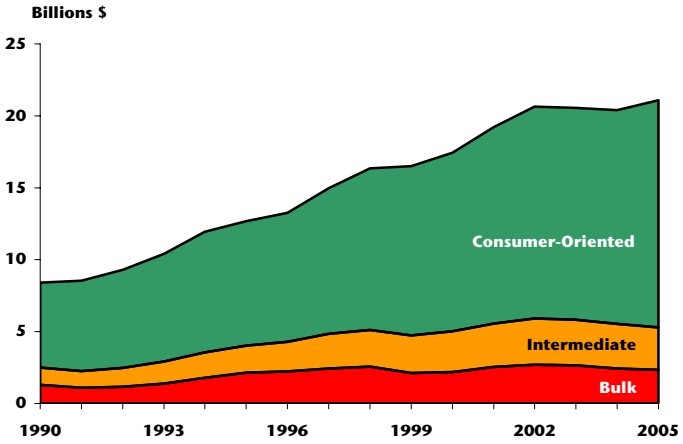


Source: Statistics Canada and AAFC calculations.

- **Consumer-oriented products also make up the majority of Canadian agriculture and agri-food imports,** accounting for 75% of the total in 2005.

  Consumer-oriented products have roughly maintained a 70% share over the last decade.

Chart A2.5
Agriculture and Agri-Food Import Purchases, 1990-2005



Source: Statistics Canada and AAFC calculations.

Both volume of production and price affect annual fluctuations in trade growth

- **The observed growth in Canadian agriculture and agri-food exports between 1991 and 2001 is attributable to both price and volume growth.** In 2002, however, the price increase was not sufficient to offset reduced grain supplies available for exports.

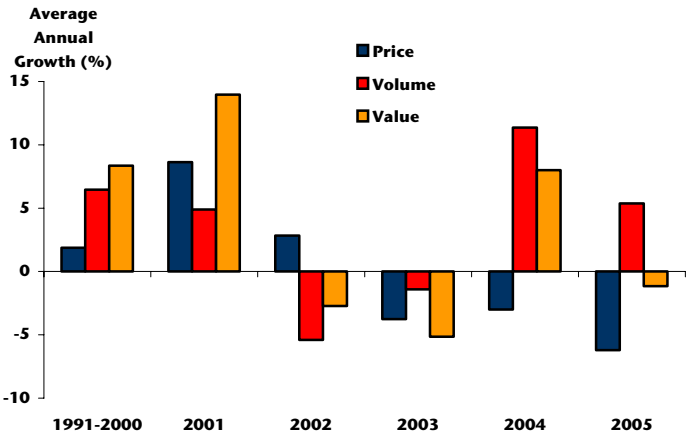
  In 2003, the decline in the value of exports was augmented by BSE-related export restrictions and the appreciation of the Canadian dollar.

  In 2004, the export volume of grains and red meats was large enough to offset the price decrease.

  In 2005, despite the increase of live animal exports, poor prices for grains and oilseeds contributed to the decrease of value.

Chart A2.6

Agriculture and Agri-Food Export Sales, Price and Volume Growth, 1991-2005



Source: Statistics Canada and AAFC calculations.

- **Most of the increase in agriculture and agri-food import purchases in the 1990's was due to volume growth.** Import volume grew at an average annual rate of 5.9% in the 1990's while price increased at an average annual rate of 1.6%.

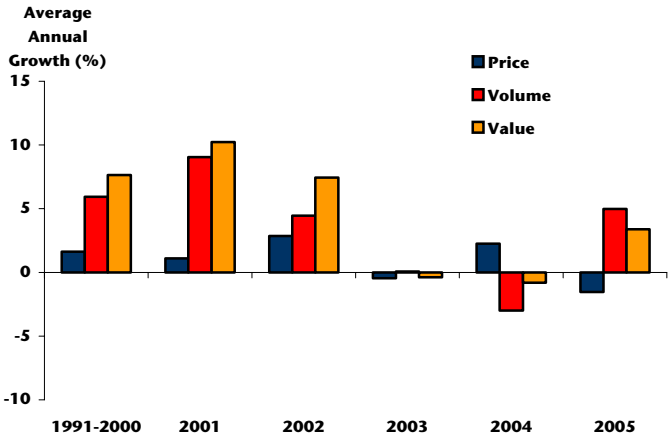
  In 2003, import value fell, partly due to the increased value of the Canadian dollar.

  In 2004, despite an overall price increase, the low volume of grains and red meats contributed to the decrease of value.

  In 2005, the increase in the volume of red meats and fruits and nuts was sufficient to offset the price increase.

Chart A2.7

Agriculture and Agri-Food Import Purchases, Price and Volume Growth, 1991-2005



Source: Statistics Canada and AAFC calculations.

Product composition of export sales is different than that of import purchases

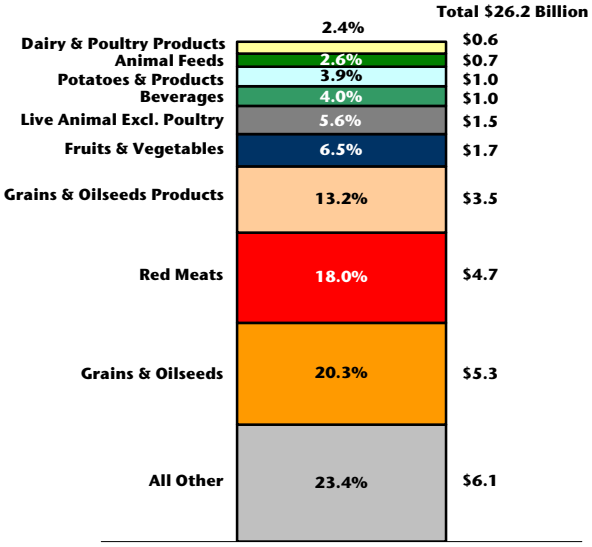
- **The composition of Canadian export sales is varied.** Grains and oilseeds and their products account for one-third of the total value of agriculture and agri-food exports.

  Live animals and red meats account for almost 24%.

  Dairy and poultry products account for less than 3% of the total value of agriculture and agri-food exports.

Chart A2.8

Commodity Composition of Export Sales, 2005



Source: Statistics Canada and AAFC calculations.

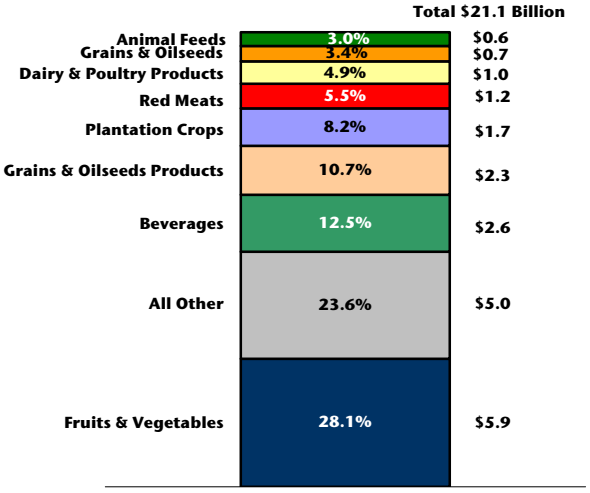
- **The commodity mix of raw commodity imports is different than that for exports.** For example, consider the grains category. While wheat and barley make up the bulk of Canadian grain exports, rice and corn comprise most of the Canadian grain imports.

  In contrast, the same types of consumer-ready products are both exported and imported (e.g., baked goods, soups, prepared meals, etc.).

  The most important category of imports in 2005 was fruits and vegetables, with over a 28% value share, followed by beverages and grains and oilseeds products.

Chart A2.9

Commodity Composition of Import Purchases, 2005



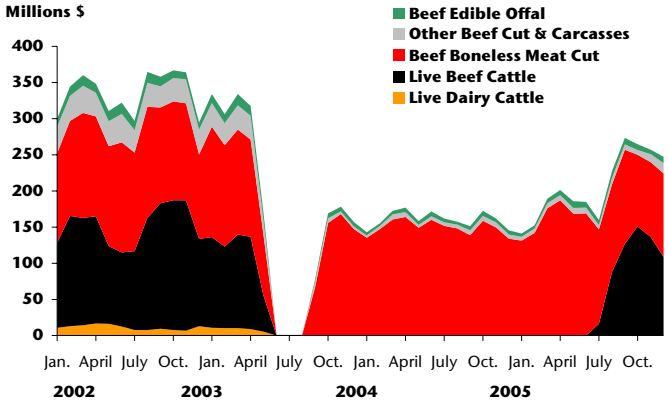
Source: Statistics Canada and AAFC calculations.

Recovery is underway in live cattle and beef export sales after having been severely affected by BSE in 2003

- **In July 2005, the U.S. border was re-opened to live cattle and bison less than 30 months, increasing the export sales. Since then, other countries, such as New Zealand and Japan have reopened their borders to Canadian beef.**

Chart A2.10

Export Sales of Live Cattle and Beef to all Countries, January 2002 to December 2005



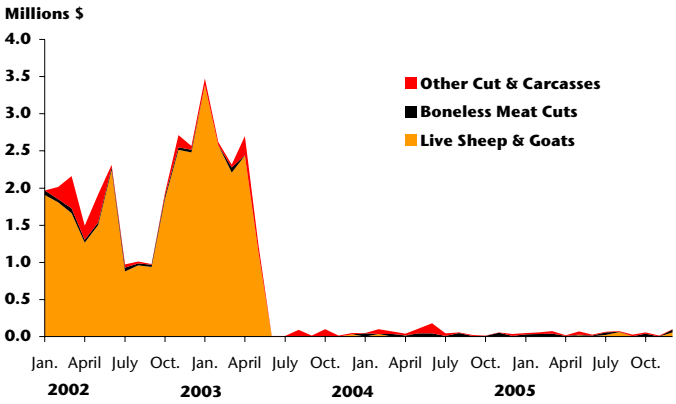
Source: Statistics Canada and AAFC calculations.

- **In spite of the partial lifting of restrictions on live sheep and goats under 12 months in July 2005, exports have not rebounded as much as in the beef sector as the bulk of exports are traditionally live animals over 12 months for breeding.**

  Continued trade restrictions between Canada and the U.S. of older animals has caused downward price pressures. But Asian markets provided a key outlet for the cattle industry by paying premium prices for cuts that had little domestic value, such as beef tongue.

Chart A2.11

Export Sales of Live Sheep and Goats and Meat Products to all Countries, January 2002 to December 2005



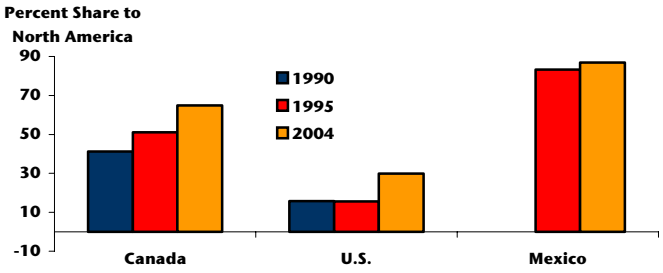
Source: Statistics Canada and AAFC calculations.

Trade is increasingly concentrated within the North American Market

- **The North American market is becoming increasingly integrated** resulting in a higher intensity of Canadian-U.S.-Mexican agri-food trade.

  Canada and Mexico are more export dependent on NAFTA countries than the U.S.

Chart A2.12
The Share of Agriculture and Agri-Food Exports of NAFTA Countries that go to Other Countries in NAFTA, 1990, 1995 and 2004

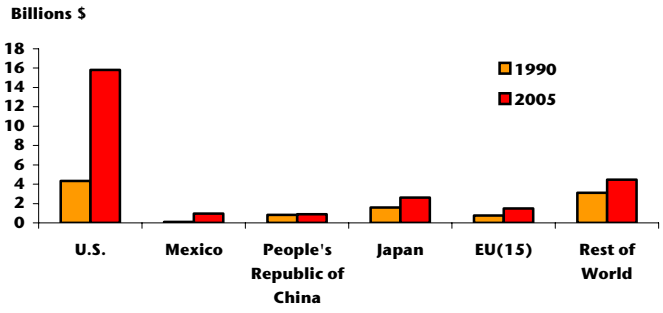


Source: Statistics Canada, Industry Canada, Global Trade Atlas and AAFC calculations.

Note: 1990 data for Mexico is unavailable.

- Agriculture and agri-food export growth sales to the U.S. have tripled since 1990, while those to Mexico have increased nine-fold.

Chart A2.13
Canadian Agriculture and Agri-Food Exports by Country, 1990 and 2005

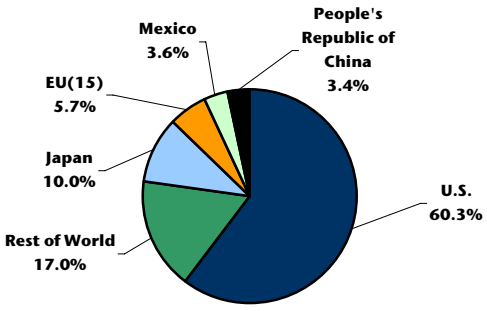


Source: Statistics Canada and AAFC calculations.

- **In 2005, the U.S. accounted for 60% of Canada's total agriculture and agri-food export sales** in comparison with a 40% share in 1990.

  The U.S. market is particularly important for consumer-oriented exports, accounting for 78% of the total export sales of these products.

Chart A2.14
Destinations of Canadian Agriculture and Agri-Food Exports, 2005



Source: Statistics Canada and AAFC calculations.

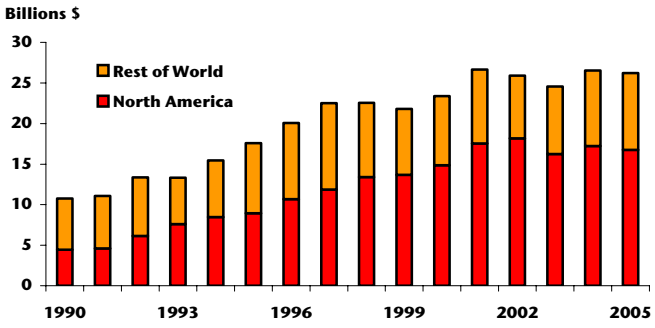
Trade with the rest of the world is holding steady

- **Agriculture and agri-food exports to the rest of the world have fluctuated between $8 and $9 billion roughly since 1995.**

  After the U.S., Japan is the next largest purchaser of Canadian agriculture and agri-food products, accounting for a 10% share in 2005, followed by the EU(15) with a 5.7% share (see Chart A2.14).

Chart A2.15

Agriculture and Agri-Food Exports to North America and Rest of World, 1990-2005

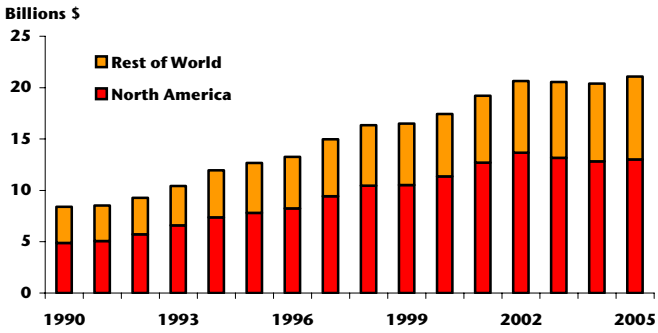


Source: Statistics Canada and AAFC calculations.

- **Imports from countries other than the U.S. and Mexico have more than doubled since 1990, while imports from NAFTA members have nearly tripled.**

Chart A2.16

Agriculture and Agri-Food Imports from North America and Rest of World, 1990-2005

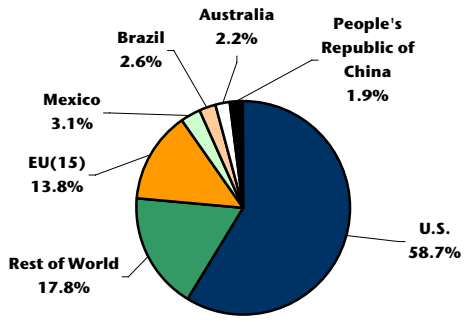


Source: Statistics Canada and AAFC calculations.

- **After the U.S., the EU(15) is Canada's main source of agriculture and agri-food imports** accounting for nearly 14% of total agriculture and agri-food imports.

Chart A2.17

Country Sources of Canadian Agriculture and Agri-Food Imports, 2005



Source: Statistics Canada and AAFC calculations.

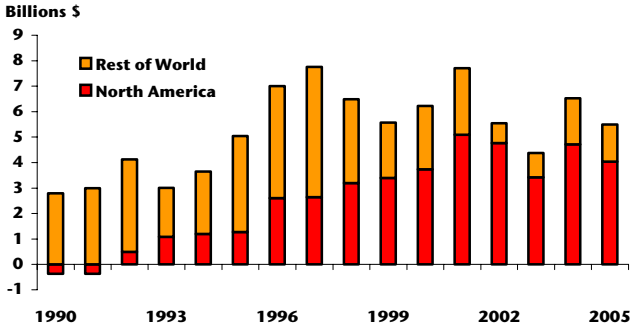
Agriculture and agri-food trade accounts for a significant part of the overall Canadian trade surplus

- **Agriculture and agri-food imports have been growing at a slower pace than exports resulting in a widening positive trade balance.** In 2005, the overall trade surplus decreased by 15.4% to $5.5 billion.

  While the trade balance with North America has been steadily increasing since the early 1990's, the trade balance with the rest of the world has fluctuated over time.

Chart A2.18

Agriculture and Agri-Food Trade Balance with North America and Rest of World, 1990-2005



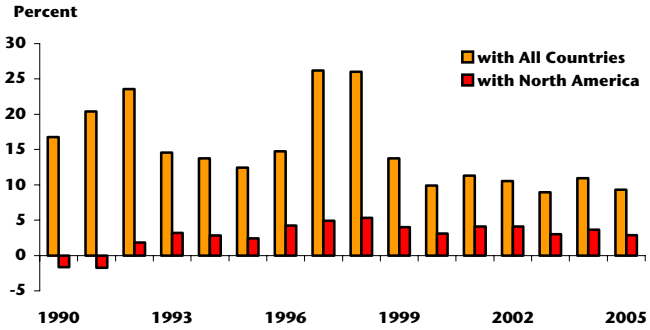
Source: Statistics Canada and AAFC calculations.

- **The agriculture and agri-food trade balance accounted for 9.3% of the total Canadian trade balance with all countries in 2005.** This trade balance share has fluctuated over time, reaching as high as 26% in 1997 and 1998.

  Agriculture and agri-food's trade balance share of the total Canadian trade balance with North America was 2.9% in 2005.

Chart A2.19

Agriculture and Agri-Food Trade Surplus' Share of the Total Canadian Trade Balance, 1990-2005

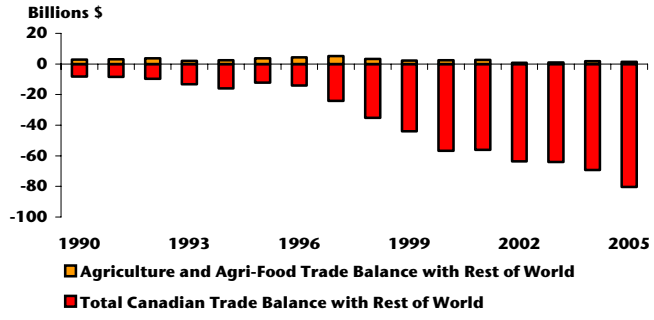


Source: Statistics Canada and AAFC calculations.

- Canada has had an overall trade deficit with the rest of the world and this has grown substantially since the mid 1990's. Agriculture and agri-food's trade surplus with the rest of the world partially offsets this total trade deficit position in the 1990's.

Chart A2.20

Agriculture and Agri-Food Trade Surplus' Offset of the Total Canadian Trade Deficit with Rest of World, 1990-2005



Source: Statistics Canada and AAFC calculations.

SECTION A3

Labour, Capital and Investment

Labour is diverse within the agriculture and agri-food system

- **The typical farmer is male, of an average age of 51.** However, the number of female farmers and farm managers are increasing. The percentage of farmers with post secondary credentials is also increasing.

  Farm employees tend to be in their late 30's and equally reflect both genders.

Chart A3.1

Labour Characteristics in Primary Agriculture by Occupation, 1995 and 2000

	Average Age		Gender (% Male)		Education (% with Post Secondary Credentials)	
	1995	2000	1995	2000	1995	2000
Farmers & farm managers	50	51	77	74	28	32
Farm supervisors & specialized livestock workers	39	38	69	63	31	35
General farm workers	36	36	65	65	20	20
Harvesting labourers	35	37	49	55	13	13
Nursery & greenhouse operators & managers	43	44	52	56	46	47
Nursery & greenhouse workers	35	35	55	44	26	23

Source: Statistics Canada.

Note: See glossary of occupations.

- The typical employee in FBT processing is in his/her late 30's or early 40's. Supervisors tend to be male, with less than half having post secondary credentials, while labourers tend to reflect both genders equally and have less education.

Chart A3.2

Labour Characteristics in FBT Processing by Occupation, 1995 and 2000

	Average Age		Gender (% Male)		Education (% with Post Secondary Credentials)	
	1995	2000	1995	2000	1995	2000
Supervisors, FBT processing	40	40	78	75	38	40
Machine operators & related workers in FBT processing	38	39	65	65	21	24
Labourers in FBT processing	36	37	52	48	18	19

Source: Statistics Canada.

Note: See glossary of occupations.

While labour in the agriculture and agri-food sector tends to be dominated by males, labour in foodservice tends to be more female dominated

- **The food retail/wholesale industry tends to be more male dominated than in other non-food retail/wholesale industries.**

  While food retail/wholesale labour has tended to reflect more male positions, the relative number of female labourers has increased. The relative number of females to males in other non-food industries has remained relatively constant.

Chart A3.3

Labour Characteristics in Food Retail/Wholesale by Occupation, 1995 and 2000

	Average Age		Gender (% Male)		Education (% with Post Secondary Credentials)	
	1995	2000	1995	2000	1995	2000
Grain elevator operators	38	41	98	92	28	29
Butchers & bakers	36	37	61	57	31	29
Retail trade supervisors*	37	36	46	45	37	34
Cashiers*	29	29	14	14	24	22

Source: Statistics Canada.

Note: See glossary of occupations.
*Reported statistics also reflect values for workers in non-food related activities.

In the foodservice industry lower level positions, such as food counter attendants and kitchen helpers, are dominated by women.

Chart A3.4

Labour Characteristics in Foodservice by Occupation, 1995 and 2000

	Average Age		Gender (% Male)		Education (% with Post Secondary Credentials)	
	1995	2000	1995	2000	1995	2000
Restaurant & foodservice managers*	40	41	57	53	41	42
Food service supervisors	34	31	37	34	40	31
Chefs & cooks	35	35	55	57	29	30
Occupations in food & beverage service	30	29	23	23	28	27
Food counter attendants, kitchen helpers & related occupations	26	28	28	35	16	15

Source: Statistics Canada.

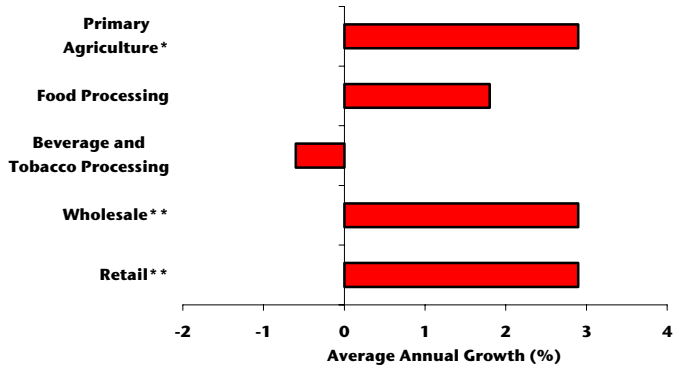
Note: See glossary of occupations.
*Reported statistics also reflect values for accommodation service managers.

Primary agriculture maintains moderate productivity growth despite a slowdown in Canadian economic growth

- **The annual average multifactor productivity (MFP) growth in primary agriculture and in food processing have been 3% and 2%, respectively, between 1997 and 2003.**

Chart A3.5

Multifactor Productivity Growth in the Agriculture and Agri-Food System 1997-2003



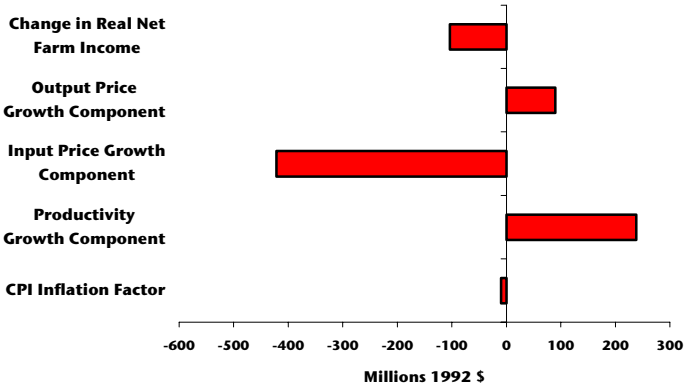
Source: Statistics Canada.

Note: *Also includes forestry, fishing and hunting.
**Encompasses both food and non-food retail/wholesale activities.

- **There have been persistent declines in real net income earned by Canadian farmers since the mid-1980's.** A change in real net farm income is comprised of four components: output price change, input price change, productivity growth and changes in the level of consumer price index - the latter component is the degree to which general price inflation reduces the spending power of farm households. Between 1985 and 2004, real net farm income decreased by an average of $104 million per year ($1992). Contributions of the four components to this change are as follows: output prices increased slightly over this period, adding about $90 million annually; input prices increased substanially over this period, taking away about $422 million annually; partial factor productivity growth was positive, adding about $238 million annually; and the consumer price inflation had a negative impact of about $10 million per year. So, in spite of positive annual contributions from output prices and productivity growth, net farm income fell, on average, because input price increases overwhelmed these positive effects.

Chart A3.6

Canadian Net Farm Income Growth Decomposition 1985-2004



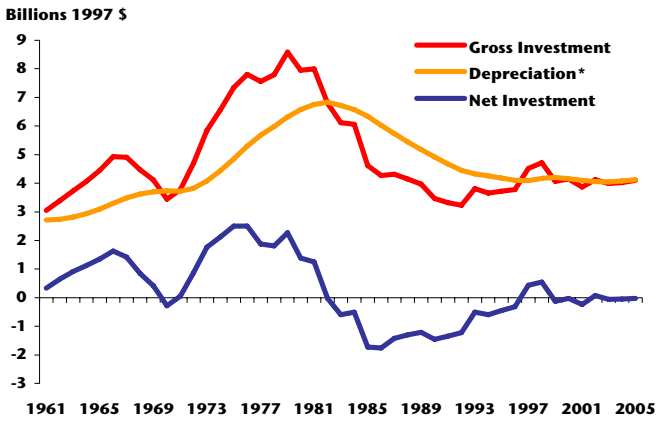
Source: AAFC calculations.

Capital stock in primary agriculture has declined since the 1980's

- **Primary agriculture began a period of rationalization in the late 1980's after the rapid investment growth of the 1970's.**

  The investment decline reflected several different factors, the most important of which was a signficant drop in commodity prices combined with higher interest rates and the restructuring that was occurring in agriculture production. Farms were consolidating, allowing more efficient use of machinery and equipment, as evidenced by large productivity gains.

Chart A3.7
Investment in Primary Agriculture, 1961-2005



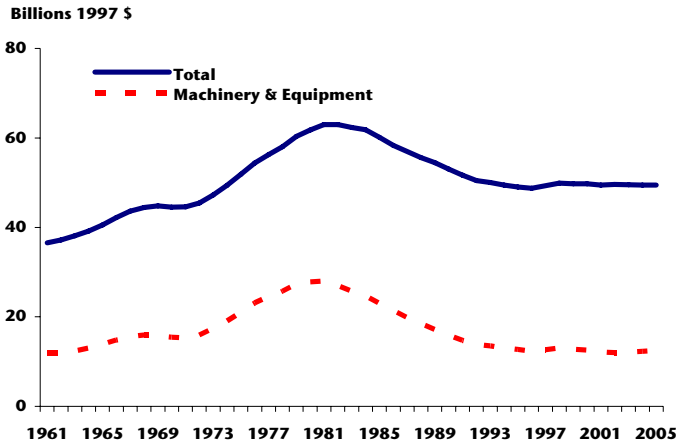
Source: Statistics Canada.

Note: Geometric (infinite) depreciation.

- **Most of the decline in capital stock in primary agriculture has been with respect to farm machinery and equipment.** Since the mid-1990's, total capital stock has stabilized at around $50 billion (1997$), and machinery and equipment at around $12 billion (1997$).

  Capital stock in U.S. primary agriculture has undergone a similar investment cycle to that of Canada.

Chart A3.8
Capital Stock in Primary Agriculture, 1961-2005



Source: Statistics Canada.

Foreign Direct Investment (FDI) is increasing

- **FDI is a critical source of capital for the growth of the agriculture and agri-food system.** FDI benefits both the investing firm and the host country. FDI provides the investing firm with market access and allows it to achieve economies of scale. The host country benefits through technology transfer and increased competition, which can lower food costs for consumers.

  For example, as international food processors and retailers invest in Canada, they are securing access to the North American market and bringing their own procurement, distribution and merchandizing systems.

Chart A3.9

Top Global Food Retailers with Operations in Canada, 2005

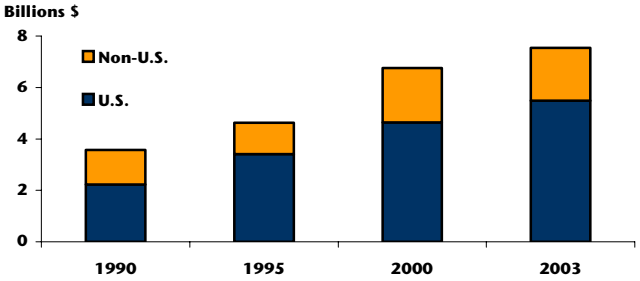
World Rank	Company	Global Sales (Billions US $)
1	Wal-Mart Stores, U.S.	285.2
8	Costco, U.S.	47.1
13	AEON, Japan	38.8
16	Safeway, U.S.	35.8
17	Ito-Yokado, Japan	33.5
21	Tengelmann, Germany	29.8

Source: Supermarket News, Top 25 Worldwide Food Retailers.

- **Accumulated FDI from U.S. sources in Canadian food processing has more than doubled since 1990 and now accounts for roughly three-quarters of total FDI in food processing.** This underestimates the true importance of FDI from U.S. sources. Official FDI statistics do not take into account any reinvestments in the Canadian-based plants from retained earnings.

Chart A3.10

Accumulated FDI in Canadian Food Processing by Country of Origin, 1990-2003



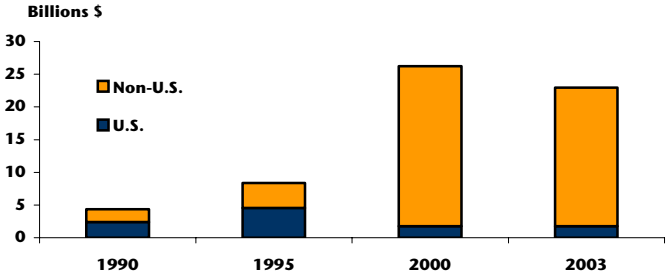
Source: Statistics Canada and AAFC calculations.

Note: SIC-C classification system.

- The huge increase in FDI from non-U.S. sources in beverage processing between 1995 and 2003 reflects in part the purchase of Seagrams by Vivendi SA and Labatts by Interbrew of Belgium.

Chart A3.11

Accumulated FDI in Canadian Beverage Processing by Country of Origin, 1990-2003



Source: Statistics Canada and AAFC calculations.

Note: SIC-C classification system.

Outward investment is contributing to the system's international focus

- **Canadian firms have also been expanding abroad, bringing their technology and management to other countries.** Often these investments are critical to expanding global market opportunities

  For example, McCain Foods has more than 55 production facilities on six continents[4].

Chart A3.12

Locations of McCain Foods International Plant Facilities, 2005

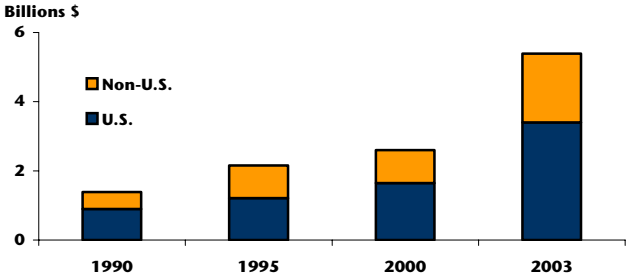
Company	Locations of International Plant Facilities
McCain Foods	Argentina
	Australia
	Belgium
	France
	Mexico
	Netherlands
	New Zealand
	Poland
	South Africa
	United Kingdom
	United States

- **More Canadian outward investment is flowing to the U.S. market.** Accumulated U.S. direct outward investment in food processing has increased by $2.5 billion since 1990.

  But Canadian food processing is also rapidly expanding beyond the North American market, with outward investment to the rest of the world doubling in the last year.

Chart A3.13

Accumulated Outward Investment in Food Processing by Country of Destination, 1990-2003



Source: Statistics Canada and AAFC calculations.

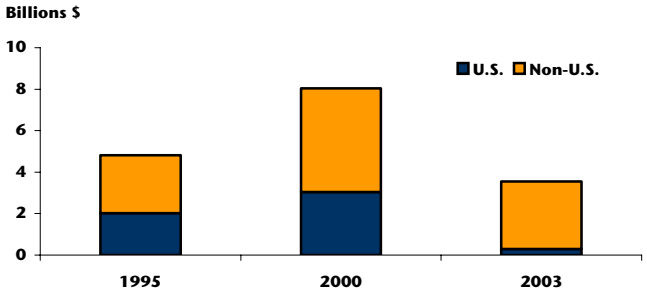
Note: SIC-C classification system.

- **Beverage processing has also been focussing beyond the North American market.**

  However, the merger between Molsons and Coors will lead to a drop in total accumulated outward investment in 2005.

Chart A3.14

Accumulated Outward Investment in Beverage Processing by Country of Destination, 1995-2003



Source: Statistics Canada and AAFC calculations.

Note: SIC-C classification system.

SECTION A4

Innovation

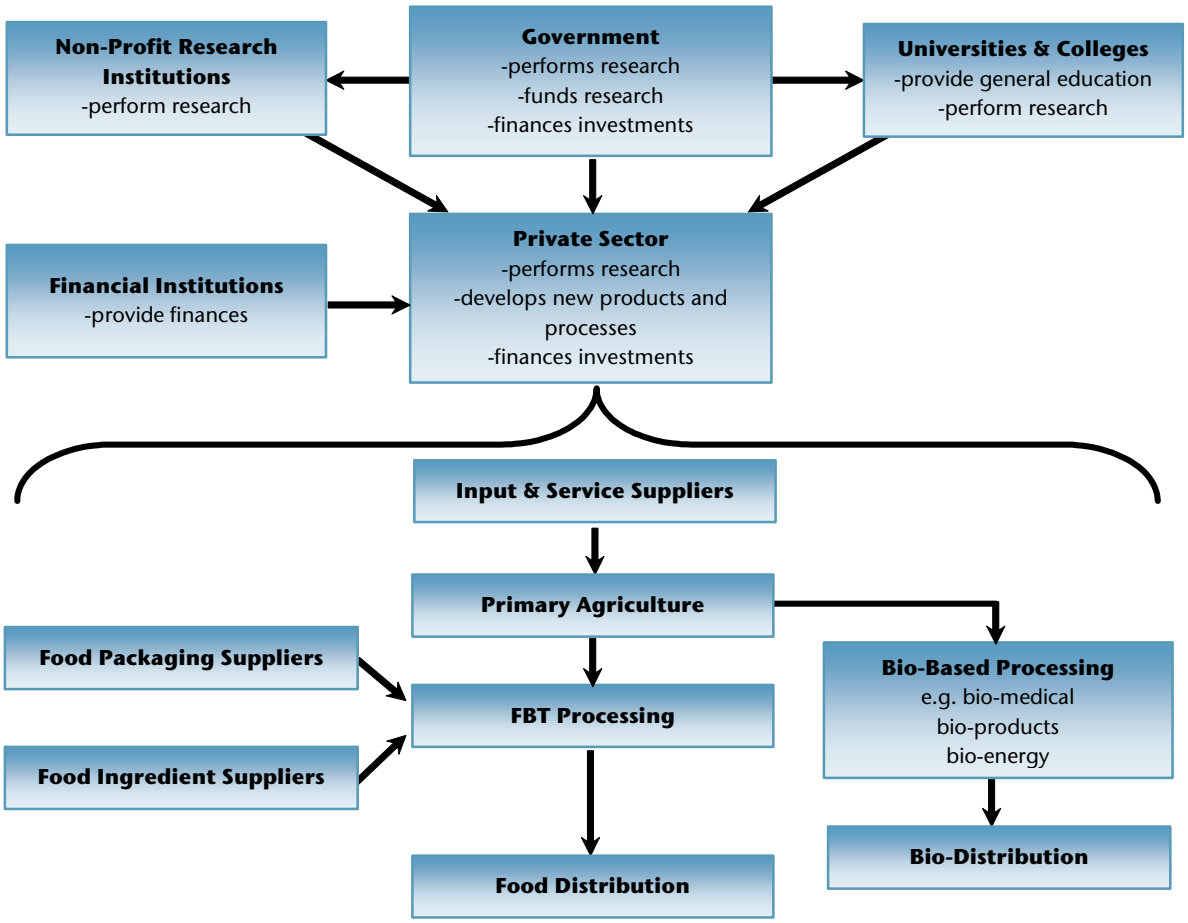
Innovation has helped to make the agriculture and agri-food system highly productive

- **Innovation is a key competitive strategy of the agriculture and agri-food sector.** Innovation involves the introduction of something new that creates value. It can be a new product, a new process, or even a new way of organizing, financing or managing a business or it can be a significant modification of an existing product or process.

  The agriculture and agri-food innovation system extends beyond the traditional supply chain, encompassing other industry players, such as food packaging and ingredient suppliers and bio-based industries.

  Financial institutions, angel investors, venture capitalists, universities and colleges, and the federal and provincial governments also play key roles in the innovation system.

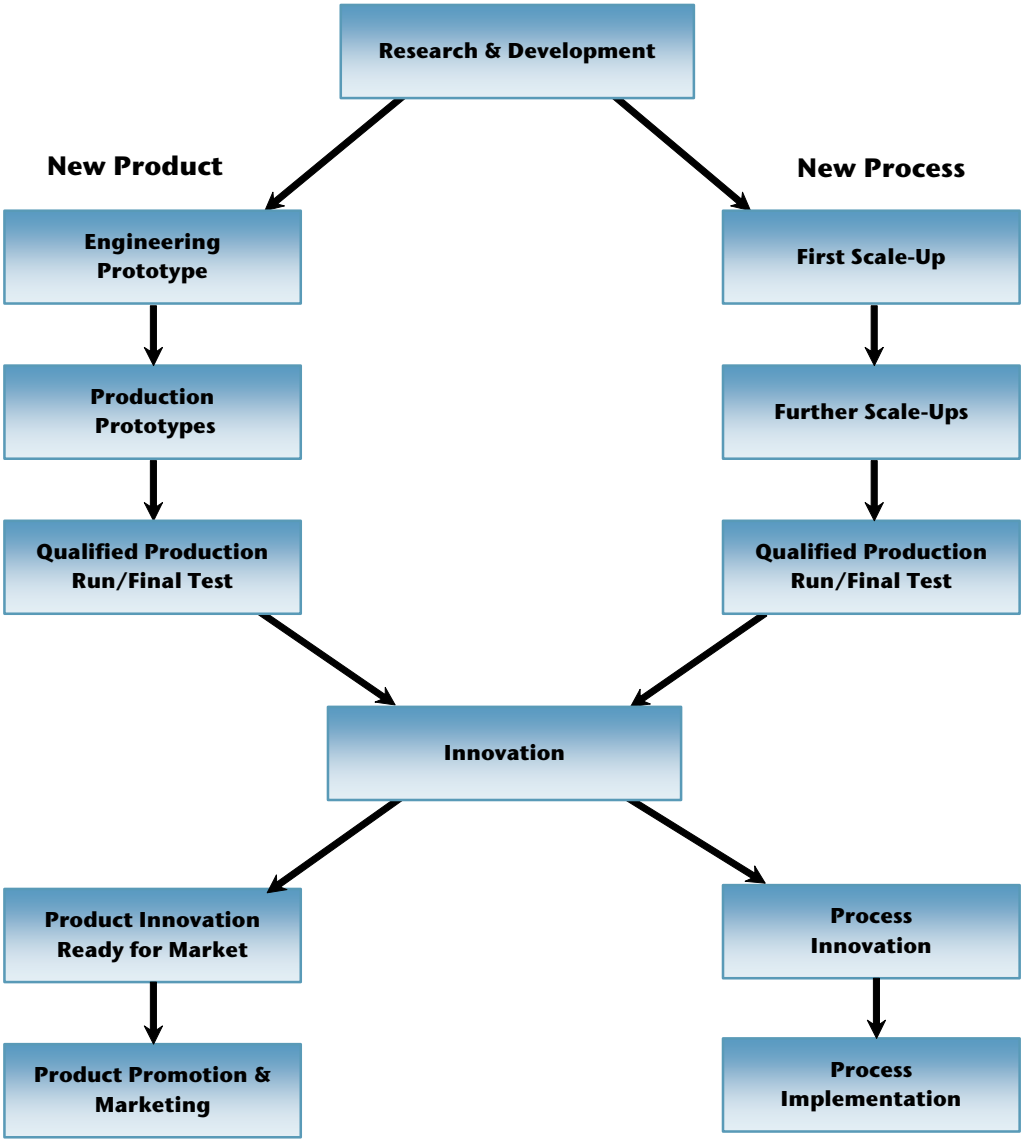
Chart A4.1
The Agriculture and Agri-Food Innovation System



Innovation involves much more than just Research and Development (R&D)

- **R&D is only the beginning of a complicated, and often high risk, innovation process** that takes the results from the laboratory, creates products/technology mock-ups and runs them through production tests.

Chart A4.2
Steps in Agriculture and Agri-Food Innovation



R&D expenditures are increasing but remain lower than for general manufacturing

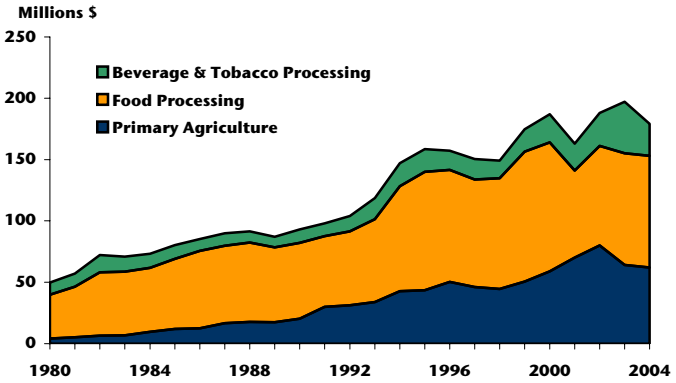
- **R&D expenditures by the agriculture and agri-food sector have been increasing over time.**

  The R&D expenditures in primary agriculture have increased from $4 million to $62 million between 1980 and 2004.

  The R&D expenditures in food processing have increased from $36 million to $91 million between 1980 and 2004.

Chart A4.3

Private Industry's R&D Expenditures in the Agri-Food Sector, 1980-2004



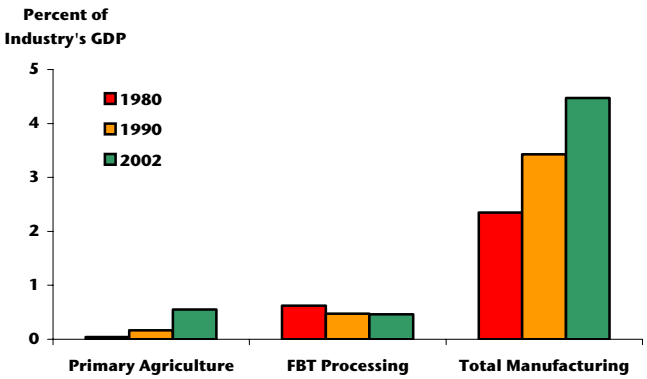
Source: Statistics Canada.

Note: 1) 2003 and 2004 figures are preliminary.
2) This includes all R&D expenditures made by private industry regardless of whether the sources of funds were self-financed, government grants/contracts or from other companies.

- **The intensity of R&D expenditures in the agriculture and agri-food sector is much lower than for total manufacturing.**

Chart A4.4

Private Industry's R&D Expenditures as a Share of GDP, 1980, 1990 and 2002



Source: Statistics Canada.

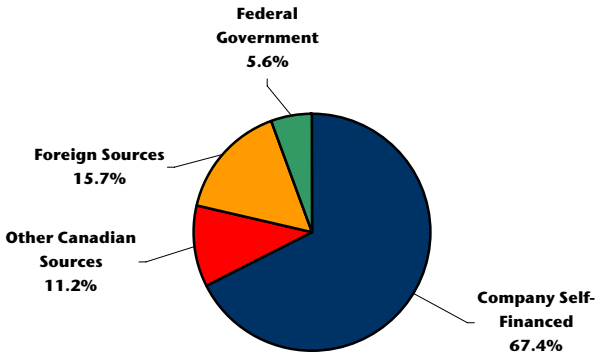
Note: This includes all R&D expenditures made by private industry regardless of whether the sources of funds were self-financed, government grants/contracts or from other companies.

Governments are large contributors to innovation expenditures in private firms

- **The federal and provincial governments give R&D grants and contributions to private industry,** as well as carrying out R&D themselves and helping to fund R&D in universities and non-profit research institutions. Section C contains further discussion regarding government R&D funding.

Chart A4.5

Sources of Funds for Private Industry's R&D Expenditures in Primary Agriculture, 2003



Source: Statistics Canada.

Note: 1) This data also incorporates the forestry, fishing and hunting sectors.
2) Other Canadian sources includes funding from other companies and provincial governments.

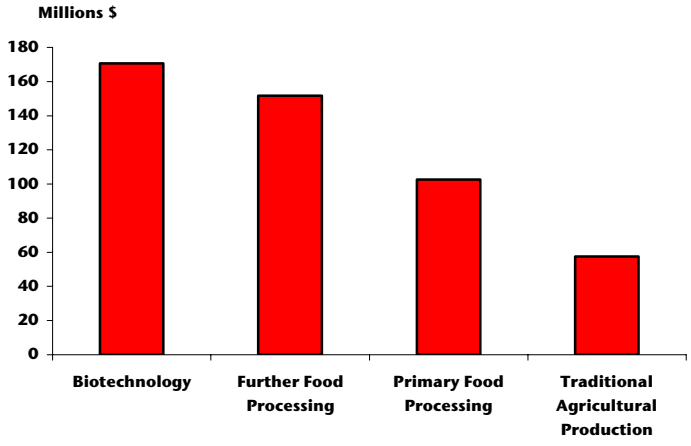
- **Venture capital funds specializing in the agriculture and agri-food sector tend to be largely government-sponsored, rather than private industry-sponsored.** A large part of government funding focuses on fostering economic development[5].

  Since 1996, the agriculture and agri-food sector has received almost half a billion dollars in venture capital investments, $40 million alone in the first three-quarters of 2003.

  The majority of venture capital funding is focussed on biotechnology. This includes the development of biopesticides, genetically modified organisms (GMOs), nutraceuticals and human and animal pharmaceuticals.

Chart A4.6

Venture Capital Investments in Agricultural-Related Enterprises by Sector, January 1996 - September 2003



Source: MacDonald and Associates, 2002.

A number of food processing establishments are investing in R&D and innovating

- About 45% of food processing establishments undertook R&D activities between 2001 and 2003.

  R&D activity varies by industry with establishments in the fruit, vegetable preserving and specialty food products industry most likely to undertake R&D.

Chart A4.7
Food Processing R&D by Industry, 2001-2003

Industry	% of Establishments
Animal Food	29.5
Grain & Oilseed	58.8
Sugar & Confectionery	57.6
Fruit, Vegetable Preserving & Specialty Food	62.8
Dairy	57.6
Meat (Excl. Poultry)	38.0
Poultry Processing	59.9
Seafood	24.9
Bakeries & Tortilla	47.7
Other Food	59.2
Total Food Processing	**45.1**

Source: Statistics Canada, Innovation in the Food Processing Industry Survey, 2004.

- About 37% of product and 23% of process innovations that were new to North America were introduced by establishments between 2001 and 2003.

  There are variations across industries with fruits, vegetable preserving and specialty food products; sugar and confectionery more likely to introduce product and process innovation.

Chart A4.8
Food Processing Innovation by Industry, 2001-2003

Industry	% of Establishments	
	Product	Process
Animal Food	29.4	12.9
Grain & Oilseed	32.2	29.5
Sugar & Confectionery	47.3	41.8
Fruit, Vegetable Preserving & Specialty Food	54.6	35.8
Dairy	43.1	27.0
Meat (Excl. Poultry)	31.5	15.4
Poultry Processing	43.8	15.4
Seafood	15.6	15.0
Bakeries & Tortilla	45.7	22.8
Other Food	42.9	27.8
Total Food Processing	**36.8**	**22.5**

Source: Statistics Canada, Innovation in the Food Processing Industry Survey, 2004.

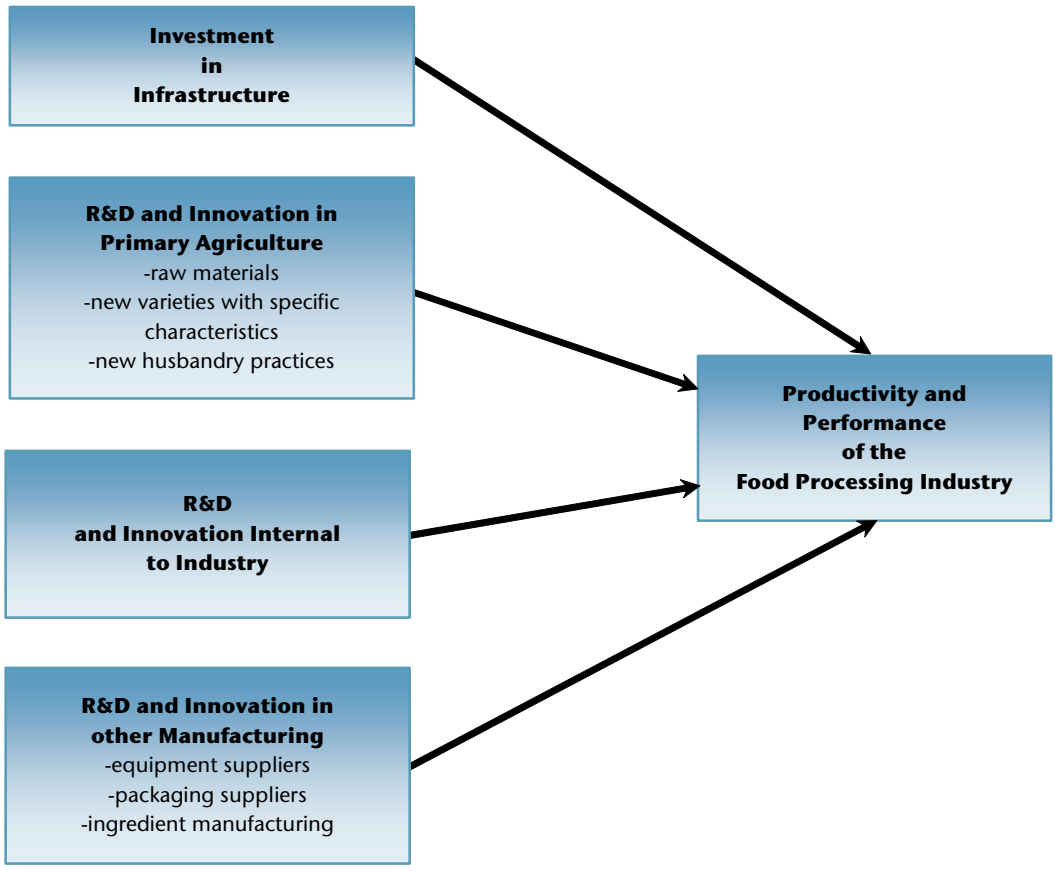
There are several sources of technical change and innovation in food processing

- Investment in infrastucture has proven to benefit innovation and productivity growth.

  R&D and Innovation in primary agriculture through new crop varieties also filters down to productivity growth in food processing.

  The development of new ingredients, new equipment and new ways of packaging helps innovation and productivity growth in food processing.

Chart A4.9
Sources of Technical Change and Innovation in Food Processing



Food processing establishments' ability to innovate is impeded by several factors

.

- Those food processing establishments surveyed reported that the major impediment to innovation in food processing is lack of internally generated cash flow.

  Difficulty in negotiating clear intellectual property rights is the least important impediment.

Chart A4.10
Impediments to Innovation, 2001-2003

Factor	% of Innovating Establishments Indicating Medium or High Importance
Lack of internally generated cash flow	42.2
Long gestation period of innovation	37.4
Insufficient flexibility in regulations or standards	37.3
Shortages of skilled workers	37.1
Lack of marketing capability	36.3
Lack of retail acceptance or access to distribution channels	29.1
Lack of external equity funding	26.0
Lack of debt financing	25.2
Lack of idea champions	24.1
Corporate/management resistance to innovation	15.8
Difficulty in negotiating clear intellectual property (IP)	9.3

Source: Statistics Canada, Innovation in the Food Processing Industry Survey, 2004.

- Firms overcome some of their impediments through govenment support and collaboration.

  The most important sources of government support are R&D tax credits and R&D grants.

Chart A4.11
Sources of Government Support, 2001-2003

	% of Establishments	
Source of Support	Use	Medium or High Importance
R&D tax credits	68.6	44.0
Government R&D grants	42.6	20.6
Government-supported training programs	40.8	12.9
Government financing support	38.5	17.4
Government research facilities	36.0	12.4
Export development assistance	32.7	8.5

Source: Statistics Canada, Innovation in the Food Processing Industry Survey, 2004.

- Food manufacturing establishments are more likely to collaborate with food ingredient suppliers for product innnovation, and equipment suppliers for process innovation.

Chart A4.12
Collaboration for Innovation, 2001-2003

	% of Establishments	
Partner Group	Product	Process
Food ingredient suppliers	40	14
Packaging suppliers	27	23
Raw agricultural product suppliers/organizations	22	9
Food retailers/wholesalers	22	5
Equipment suppliers	20	37
Consultants	17	18
Commercial laboratories or R&D enterprises	15	7
Foodservice operators	14	3
Universities and colleges	12	6
Federal/provincial government research facilities	8	5
Competitors	5	3
Private research institutions	4	2

Source: Statistics Canada, Innovation in the Food Processing Industry Survey, 2004.

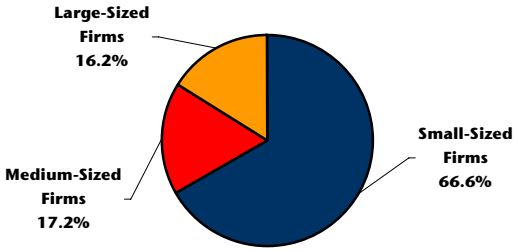
Some establishments are beginning to diversify into bioproduct production and development

As agricultural producers continue to face downward pressure on farm income, the industry continually searches for innovative products such as bioproducts that may provide an excellent market opportunity for effective diversification in managing competitive global pressures.

- According to the Bioproduct Development Survey in 2003, there were 232 firms across Canada developing bioproducts and employing nearly 7,800 people in bioproduct development. About 67% of these firms were small, with fewer than 50 employees. Another 17% had between 50 and 149 employees, the remaining 16% of firms had more than 149 employees.

Chart A4.13

Distribution of Firms Producing or Developing Bioproducts in Canada by Firm Size, 2003



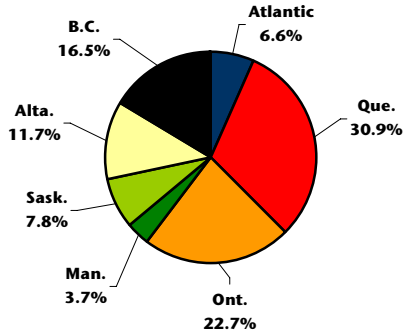
Source: Statistics Canada.

Note: Large-sized firms are those with 150 or more employees, medium-sized are those with 50 and 149 employees and small-sized are those with less than 50 employees.

- About 50% of bioproduct firms are located in Quebec and Ontario. The Prairie provinces accounted for 23% of firms and British Columbia 17%. The Atlantic provinces accounted for the remaining 7% of firms.

Chart A4.14

Distribution of Firms Producing or Developing Bioproduct by Province, 2003



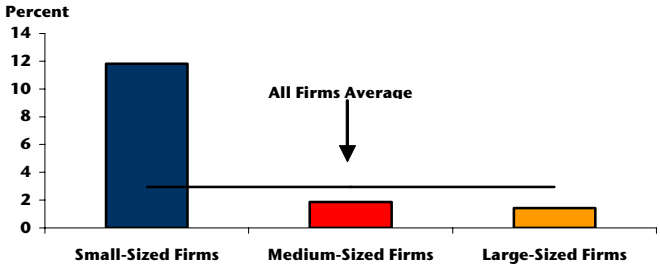
Source: Statistics Canada.

- Bioproduct firms are investing in R&D. Average R&D investments per firm in 2003 was $1 million with $400,000 of this devoted to bioproduct R&D.

  R&D intensity, measured as bioproduct R&D divided by bioproduct revenues averaged 3% for bioproduct firms, is highest for small-sized firms at 11.8% versus only 1.9% and 1.4% for medium and large-sized firms, respectively.

Chart A4.15

Bioproduct Firm R&D Intensity, 2003



Source: Statistics Canada.

Note: Large-sized firms are those with 150 or more employees, medium-sized are those with 50 and 149 employees and small-sized are those with less than 50 employees.

Development of functional foods and nutraceutical (FFN) products is also another innovative way for the industry to diversify

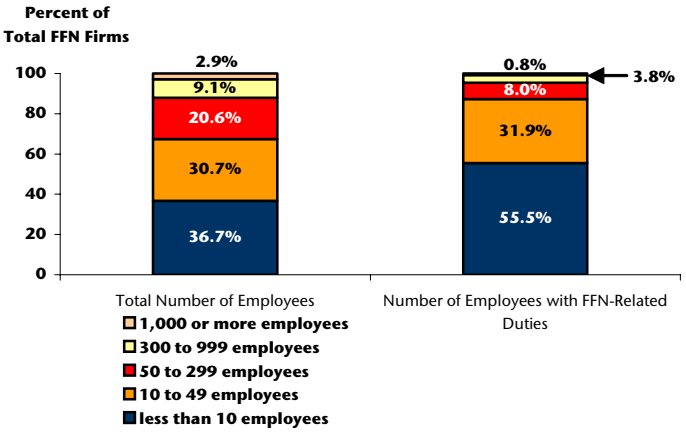
- **The majority of firms developing FFN products are small, but there are some large players in terms of both revenue and workforce.**

  According to the FFN Survey, two-thirds of the firms have less than 50 employees.

  About 12% had 300 or more employees. There are a few very large players (3%) reporting 1,000 or more employees.

Chart A4.16

Distribution of FFN Firms by Number of Employees, 2002



Source: Statistics Canada.

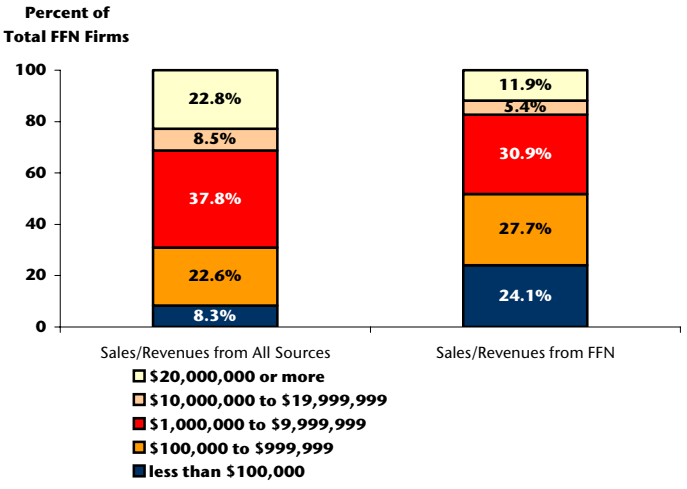
Note: Includes permanent, seasonal, casual and contract employees.

- **Firms in the Canadian functional food and nutraceutical (FFN) industry vary widely in terms of total revenue.**

  Thirty percent of the firms reported total earnings from all sources exceeding $10 million in 2002, another 40% reported earnings between $1 to $10 million and the remaining 30% reported earnings of less than $1 million.

Chart A4.17

Distribution of FFN Firms by Total Revenue, 2002



Source: Statistics Canada.

SECTION B

The Agriculture and Agri-Food System's Components

SECTION B1

Consumers

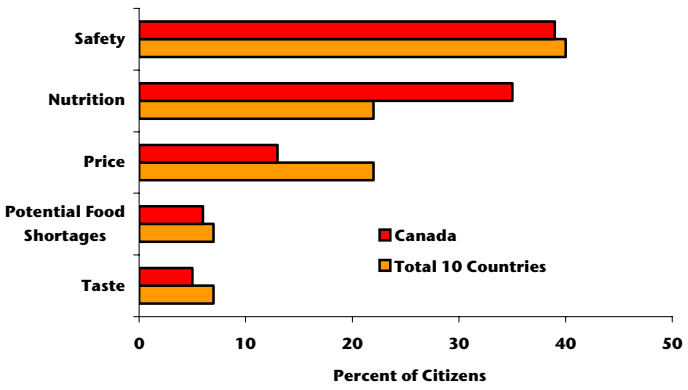
Quality is important to consumers

- **Consumers in Canada and other countries take a number of factors into consideration when making their food choices including the food's nutritional value, freshness, safety, taste and price.**

  Canadians tend to rate food safety as an important issue, in comparison to other countries which rate nutrition as more important and price and taste as less important when choosing food.

Chart B1.1

Most Important Factors in Consumers' Food Choices, 2004



Source: GlobeScan Inc., "Food Issues Monitor" 2004.

Note: The 10 countries include Argentina, Canada, China, Czech Republic, France, Germany, Italy, Mexico, UK, and the U.S.

- **Most Canadians have a high degree of trust in Canada's food regulatory system and are confident that it will protect them from foodborne illnesses**[6]**.**

  Canadians tend to be less concerned about food safety issues than do citizens in other countries. Nevertheless, a fairly large percentage of Canadians are still concerned about tampering and poisoning (59%), chemical pesticides (54%), and bacterial contamination (51%).

Chart B1.2

Consumers' Food Safety Related Concerns, 2004

Percent of Citizens Who are Very Concerned		
	Total 10 Countries	Canada
Tampering/Poisoning	61%	59%
Chemical Pesticides	59%	54%
Bacterial Contamination	53%	51%
Disease from Animal	52%	48%
Poor Nutritional Quality	47%	45%
Irradiation of Foods	45%	40%
Artificial Preservatives	43%	38%
GMOs	43%	42%

Source: GlobeScan Inc., "Food Issues Monitor" 2004.

Note: The 10 countries include Argentina, Canada, China, Czech Republic, France, Germany, Italy, Mexico, UK, and the U.S.

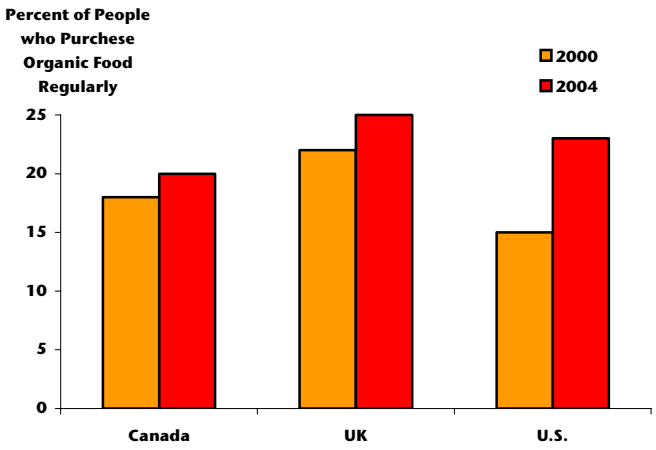
Consumers interest in organic foods is changing over time

- **Consumers in Canada and other countries are regularly buying more organic foods.**

  Canadians' purchase frequency of organic food has increased two percentage points in the last four years. This is a small increase but may indicate that consumers are more interested in the alternative quality attributes organic foods offer such as not using chemicals, fertilizers and hormones.

  The demand for organic food in the U.S. market is growing faster. Between 2000 and 2004 the percentage of people who purchased organic food regularly increased by eight percentage points.

Chart B1.3
Organic Food Purchaser, 2000 and 2004



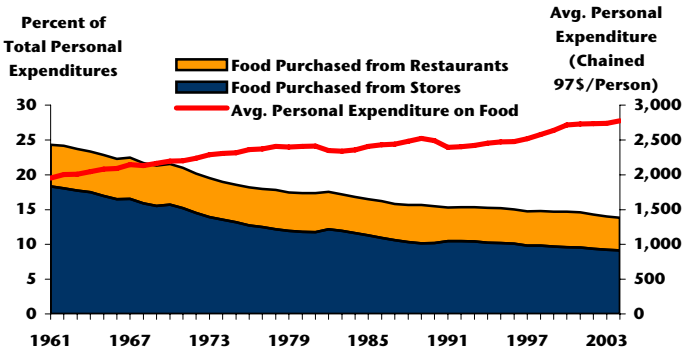
Source: GlobeScan Inc., "Food Issues Monitor" 2004.

For the average Canadian, food expenditure share is declining

- **Although the average personal food expenditure has increased, its share in total personal expenditure purchases has been declining for the past 40 years.**

  This has resulted from a decline in the share of food purchased from stores, while food purchased from restaurants maintained its share of personal expenditures.

Chart B1.4
Average Personal Expenditures on Food and the Share in Total Expenditures, 1961-2004

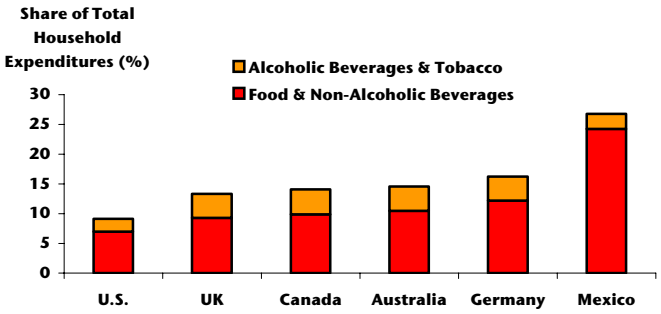


Source: Statistics Canada and AAFC calculations.

- **In 2003 the household expenditure share of food and non-alcoholic beverages in Canada was just under 10% with alcoholic beverages and tobacco accounting for another 4%.**

  Among the selected OECD countries, Canada has the third lowest total household expenditure share for food, beverages and tobacco, ranking behind the U.S. at 9% and the UK at 14%.

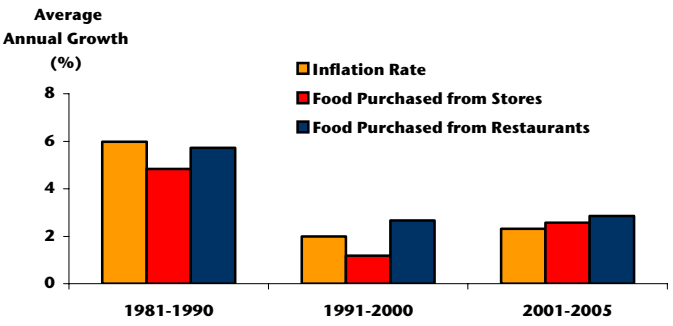
Chart B1.5
The Household Expenditure Share of Food, Beverage and Tobacco in Selected OECD Countries, 2003



Source: OECD.

- **Over the last 25 years, the rate of retail food price increases has in general been lower than inflation, except for 2005 where food price increases exceeded inflation, while foodservice price increases have matched and sometimes even exceeded inflation**.

Chart B1.6
Consumer Price Indices for Food and All Goods and Services, 1981-2005



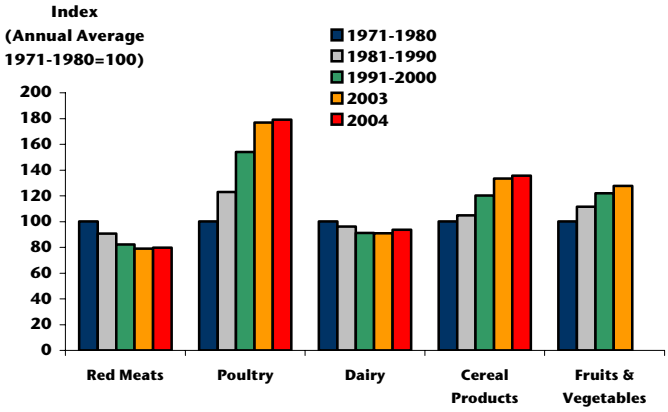
Source: Statistics Canada and AAFC calculations.

The average Canadian diet is changing over time

- **Relative to the 1970's people are eating less red meats, but more poultry, cereal products and fruits and vegetables.**

  Canadian per capita red meat consumption has been steadily declining since 1976. Although Canadians continue to eat beef, per capita beef consumption in 2004 dropped by 4% as people responded to higher beef prices especially in premium cuts of beef.

Chart B1.7
Per Capita Food Disappearance by Major Food Group, 1971-2004



Source: Statistics Canada and AAFC calculations.

Note: 2004 data for fruits & vegetables disappearance is unavailable.

- **The average Canadian consumes more wheat flour, fluid milk and fresh fruits and vegetables than the average American, but consumes significantly less meat and meat substitutes, such as eggs and cheese.**

  For example, while the average American consumes around 103 kg of beef, pork and poultry meat and 253 eggs every year, the average Canadian consumes 78 kg of beef, pork and poultry meat and 188 eggs.

  Canadians drink more coffee and tea than Americans, but less soft drinks.

Chart B1.8
Comparison of Per Capita Food Disapppearance in Canada and the U.S. by Commodity, 2003

	Canada	U.S.
Beef (kg)	23	29
Pork (kg)	19	23
Chicken (kg)	32	43
Turkey (kg)	4	8
Eggs (number)	188	253
Fluid Milk (litre)	85	82
Cheese (kg)	12	14
Fresh Fruits (kg)	65	55
Fresh Vegetables (kg)	135	122
Wheat Flour (kg)	70	63
Oil & Fats (kg)	32	36
Soft Drinks (litre)	111	176
Coffee (litre)	105	92
Tea (litre)	73	29

Source: Statistics Canada and USDA, Economic Research Service.

SECTION B2

Food Distribution

(Retail/Wholesale and Foodservice)

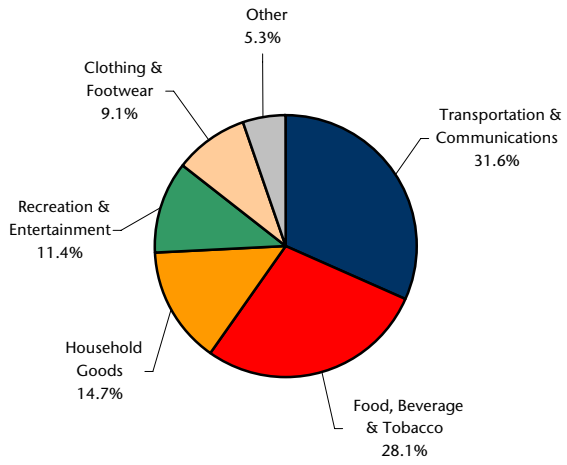
Food distribution is a major part of Canada's consumer goods and services sector

- **In 2004 Canadians spent $132 billion (or 18% of their total personal expenditures) on food, beverage and tobacco (FBT) products purchased from stores ($96 billion) and through foodservice ($36 billion).**

  FBT expenditures represent the second largest consumer good expenditure category.

Chart B2.1

Distribution of Personal Expenditure on Goods, 2004

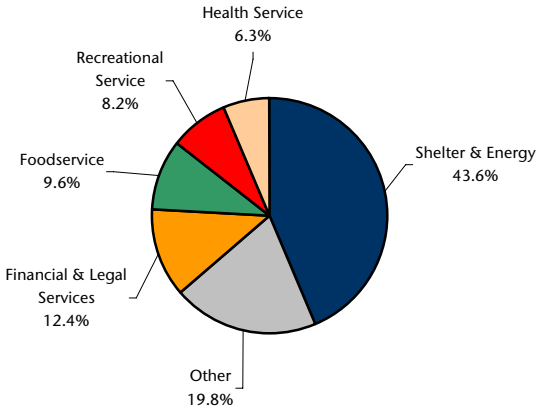


Source: Statistics Canada.

- **Foodservice is the the third largest consumer service expenditure category.**

Chart B2.2

Distribution of Personal Expenditure on Services, 2004



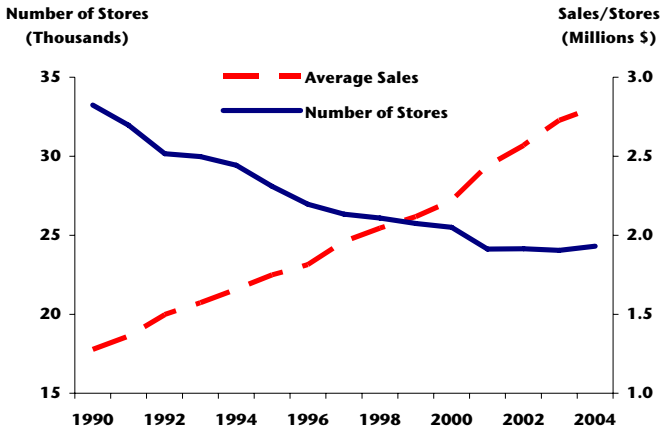
Source: Statistics Canada.

Food retailing is becoming more international and consolidated with increasingly larger operations

- **Significant store rationalization has occurred during the past decade,** with a move to larger operations. Although the total number of food stores has stabilized at approximately 24,000 stores, chain stores are increasing their number of branch and franchise stores in Canada. In 2005, Loblaws had around 1,072 corporate/franchise stores, and Sobeys around 1,310 stores.

  In 2005, Metro Inc. acquired A&P Canada making Metro the third largest food retailer in Canada, behind Loblaws and Sobeys.

Chart B2.3
Number of Canadian Food Stores and Average Sales,1990-2004

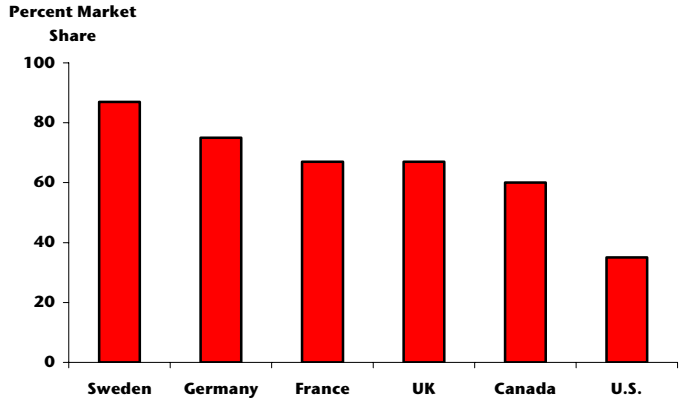


Source: Canadian Grocer, Statistics Canada and AAFC calculations.

- **The five largest food retailers in Canada account for about 60% of national grocery sales, up from 50% a decade ago, while the share of independent retailers has gone down from 47% to 39% over the same period.**

  Some European countries have higher levels of retail food store concentration than Canada, while the U.S. has a lower level overall. However, on a regional basis, food retail concentration in the U.S. is often high.

Chart B2.4
Market Share of Top 5 Food Retailers, Selected Countries, 1997-1999



Source: AAFC calculations based on Dobson Consulting, (1999) and USDA sources.

Canadian food retailers rank among North America's top food retailers

- Loblaws, Sobeys, Metro and Overwaitea rank by sales as #6, #15, #20 and #39, respectively, in Supermarket News' (SN) "North American Top 75 Food Retailer" list.

  Loblaws, Sobeys, Alimentation Couche-Tard, Metro and Overwaitea also rank among the top global general merchandise retailers, ranking #41, #71, #82, #139 and #212 respectively in Deloitte's 2006 "Top 250 Global Retailers" list.

Chart B2.5
The Ranking of Canadian Food Retailers, 2006

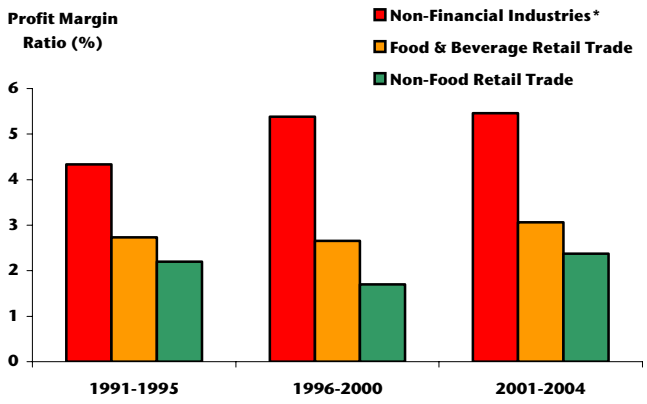
Food Retailer	Major Banners	SN's Top 75 North American Food Retailers		Deloitte's Top 250 Global Retailers	
		Rank	Sales (Billions US$)	Rank	Sales (Billions US$)
Loblaws Companies Ltd.	Loblaws; Atlantic Superstore; Fortinos; Provigo, Your Independent Grocer; Zehrs Markets	6	24.0	41	20.2
Sobeys	Sobeys; IGA, Price Choppers	15	11.1	71	9.6
Metro	Metro; Marché Richelieu; Super C; Loeb	20	5.9	139	4.5
Overwaitea Food Group	Overwaitea Foods, Save-On-Foods, Urban Fare	39	2.7	212	4.4

Source: Supermarket News (2006) and Deloitte (2006).

- **Canadian food and beverage retailers report relatively stable profit margins that are above non-food retailers but below the overall non-financial sector.**

  Since the early 1990s, food and beverage retailers have seen profit margins hover around 2.7% annually while non-food retailers have experienced profit margins around 2.2% per year. The total non-financial sector, which includes all sectors except financial services, experienced a rise in profit margins to over 5% since 1991.

Chart B2.6
Average Profit Margin Ratio for Food and Beverage Retailers, 1991-2004



Source: Statistics Canada and AAFC.

Note: See glossary for definition of the profit margin ratio and non-financial industries.

Lines between food retail and non-food retail, food wholesale and food processing are becoming blurred

- **Lines between food and non-food retailers are becoming blurred** as department stores, pharmacies and gas stations are increasingly selling food items while traditional food retailers/wholesalers have expanded their non-food selections.

Chart B2.7
Food Retail Channel Share, 2004

	%
Food and beverage stores	87.1
General merchandise stores	8.5
Gas stations and automotive dealers	2.5
Drug stores	1.4
Other	0.3

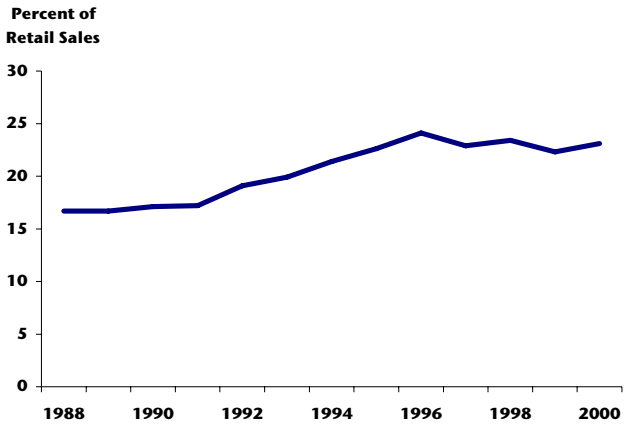
Source: Statistics Canada, Quarterly Retail Commodity Survey, Special Tabulation.

- **Lines between food retail and upstream industries are also becoming harder to distinguish.**

  Food retail and wholesale operations are largely integrated with large retailers owning their own wholesale operations.

  More and more food retailers are manufacturing their own private labels to better respond to consumers' cost sensitivities and/or specific quality demands and to offer increased product differentiation.

Chart B2.8
Private Label Penetration, 1988-2000



Source: Canadian Grocer Executive Report 2002 and the Globe and Mail 1998.

Most meals are still eaten at home, but foodservice is an increasing component of household expenditures

- **Almost 70% of all Canadian meals are prepared and eaten at home.** Commercial foodservice accounts for around 10% of all meals.

Chart B2.9

Where Canadians Eat Their Meals, 2005

	% of Meals
In home – from retail	67
At a restaurant	8
Skipped meals	8
Carried from home	8
All other away-from-home	7
In-home–from restaurants	2
In home - home meal replacement	1

Source: Canadian Restaurant and Foodservices Association.
(Sourced from Eating Patterns in Canada Report 2005, NPD Group Canada Inc.)

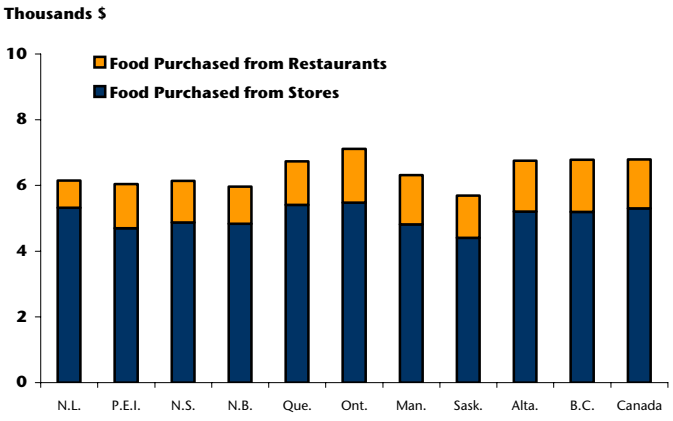
- **The average Canadian family visits a restaurant for a meal or snack approximately 520 times per year and spends about one-fifth of their total household food expenditures on these meals and snacks**[7].

  Residents of Manitoba, British Columbia, Ontario and Alberta spend a larger share of their food expenditures on restaurant meals than the residents of other provinces.

  Provincial sales tax does not explain these differences as there is no provincial sales tax on restaurant meals except in Alberta and Ontario where only restaurant meals under $4.00 are exempt.

Chart B2.10

Household Spending on Food by Province, 2003



Source: Statistics Canada and AAFC calculations.

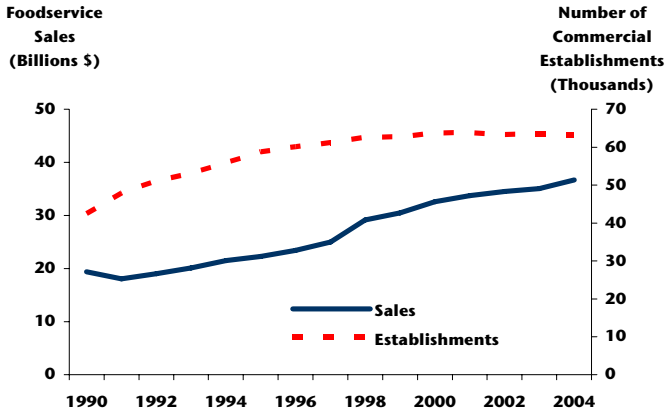
Note: Food purchased from stores includes board paid to private households.

Foodservice sales are growing over time

- **Commercial foodservice sales have increased significantly since 1990, while the number of establishments have stabilized at mid-1990 levels.**

  In 2004, there were around 63,300 commercial foodservice establishments in Canada, of which one-third were in Ontario.

Chart B2.11
Commercial Foodservice Sales and Number of Establishments, 1990-2004



Source: Canadian Restaurant and Foodservice Association and Statistics Canada.

- **When Canadians eat out, they tend to prefer more to less service.** Nearly half of sales in commerical foodservice is spent at full service restaurants.

  Other and non-commercial foodservice sales account for around 22% of total foodservice sales.

Chart B2.12

Market Share by Foodservice Category, 2005

	%
Commercial Foodservice	**78**
Full-service restaurants	37
Limited-service restaurants	30
Contract and social caterers	6
Pubs, taverns and nightclubs	5
Other and Non-Commercial Foodservice	**22**
Accomodation foodservice	10
Institutional foodservice	6
Retail foodservice	2
Other foodservice	4

Source: Canadian Restaurant and Foodservices Association and AAFC calculations.

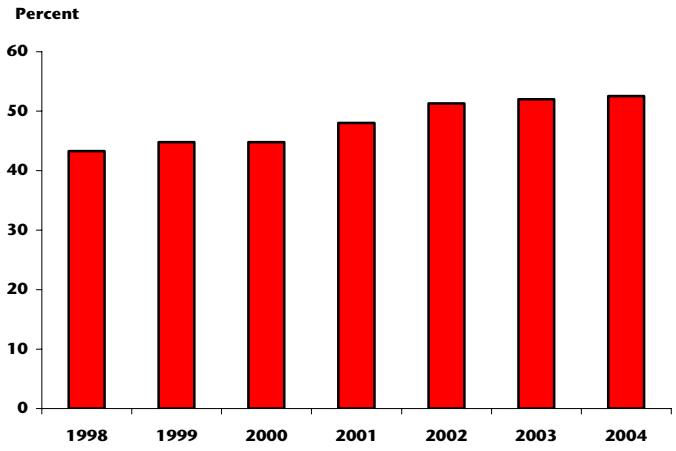
Note: 2005 figures are preliminary.

Foodservice is becoming increasingly concentrated, but a large share is still operated by independent proprietors

- **Commercial foodservice remains quite fragmented with 62% of locations owned by independent retailers rather than chains.** But concentration is increasing as chain restaurant companies continue to expand.

  In 2004, the top 50 foodservice companies accounted for 52.5% of commercial foodservice sales, up nine percentage points from 1998.

Chart B2.13
Top 50 Foodservice Companies' Share of Commercial Foodservice Sales, 1998-2004

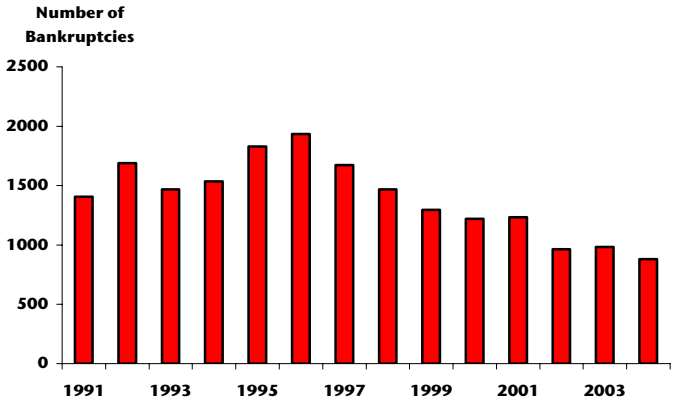


Source: Canadian Restaurant and Foodservices Association.

- **Commercial restaurant bankruptcies were down 10% in 2004 compared to 2003.**

  The Canadian Restaurant and Foodservice Association reports that the average profit margin for foodservice operators was 3.6% in 2004 . Food and beverage accounted for 37.5% of total foodservice operators costs and labour for another 31%[8].

Chart B2.14
Commercial Restaurant Bankruptcies, 1991-2004



Source: Canadian Restaurant and Foodservice Association, Quarterly InfoStats.

SECTION B3

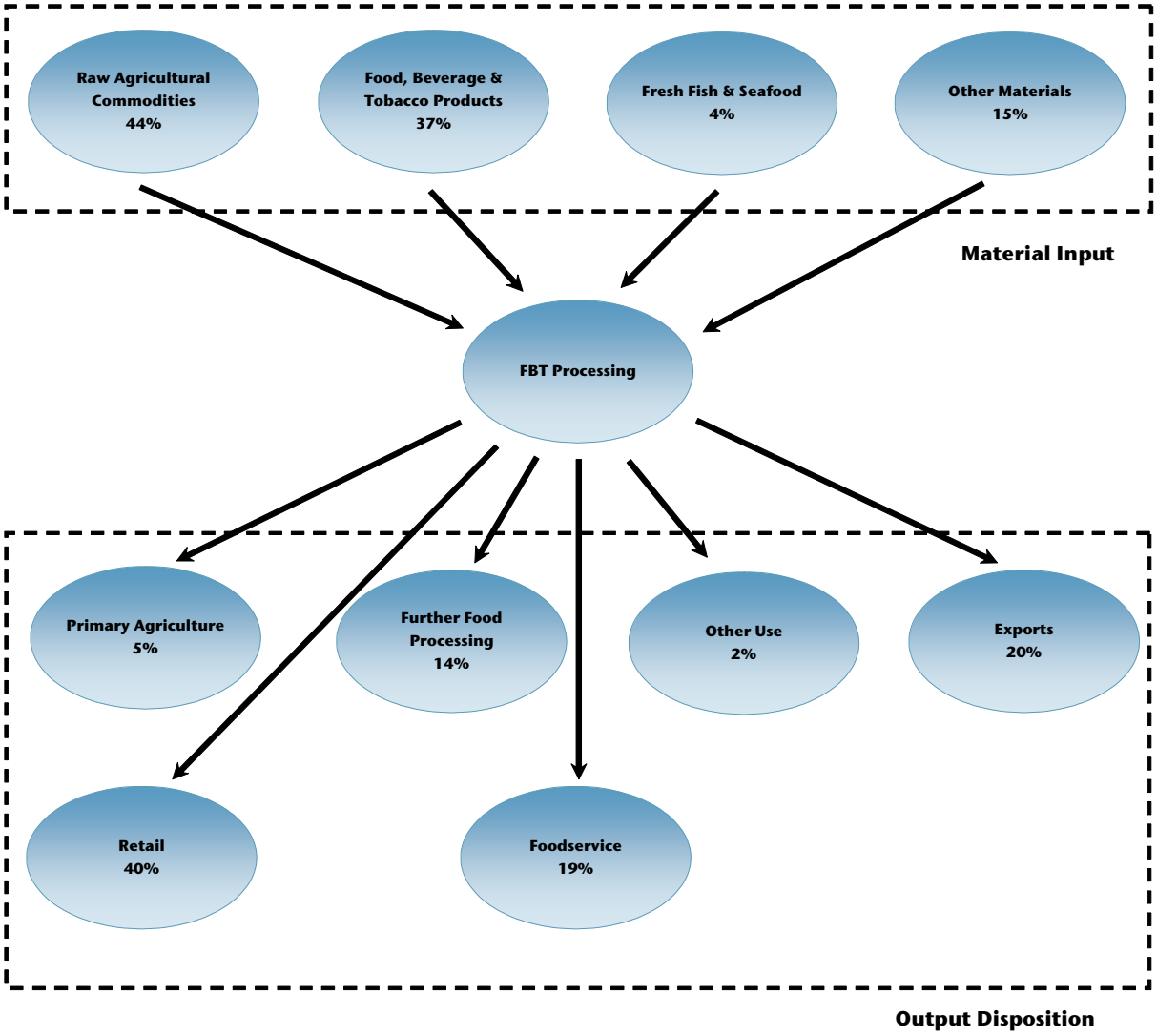
Food, Beverage and Tobacco (FBT) Processing

Food, beverage and tobacco (FBT) processing is a chain of industries

- **FBT processing is a chain of industries ranging from primary processors, such as flour mills and abattoirs, to further processors, such as bakeries and meat canneries.**

  Raw agricultural commodities and fresh fish and seafood make up 50% (or $19 billion) of the total value of material input into FBT processing. Food, beverage and tobacco products that go into further processing, make up another 37% (or $14 billion). The remaining 13% of input value is largely packaging materials, energy, chemical additives, and equipment.

Chart B3.1
Food Processing Input Composition and Output Disposition, 2002



Source: Statistics Canada and AAFC calculations.

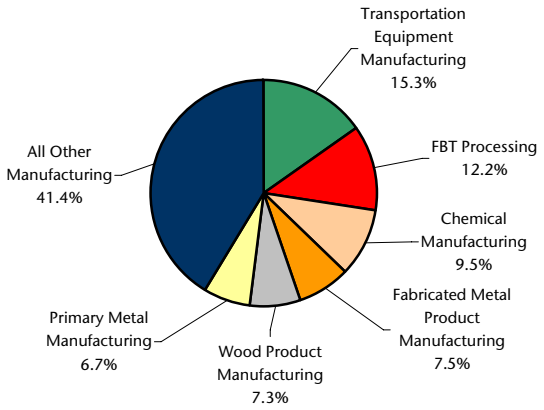
It is an important part of the manufacturing sector

- **FBT processing is the second largest contributor to total manufacturing GDP in Canada, following transportation equipment manufacturing**.

  In 2004, FBT processing's share of manufacturing GDP was 12% (food processing accounting for nearly 10% of this share).

Chart B3.2

Distribution of Total Manufacturing GDP by Sector, 2004

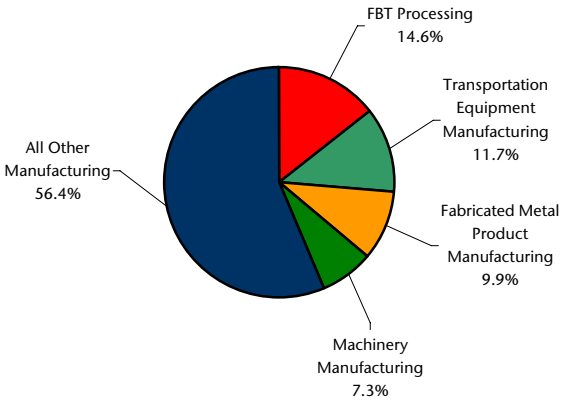


Source: Statistics Canada.

- **FBT processing is the largest manufacturing employer,** accounting for nearly 15% of total manufacturing employees.

Chart B3.3

Distribution of Total Manufacturing Employment by Sector, 2004



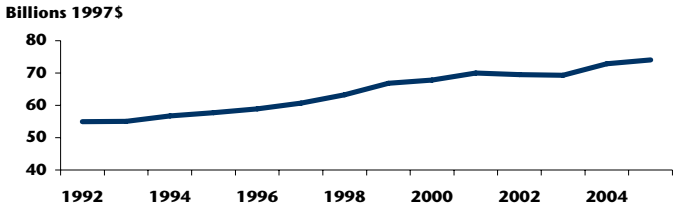
Source: Statistics Canada.

Output continues to grow, but at a lower rate

- **The total value of FBT processing shipments in 2005 was $80.3 billion**.

  FBT processing shipments have increased by $33 billion since the early 1990's.

Chart B3.4
Value of FBT Processing Shipments, 1992-2005

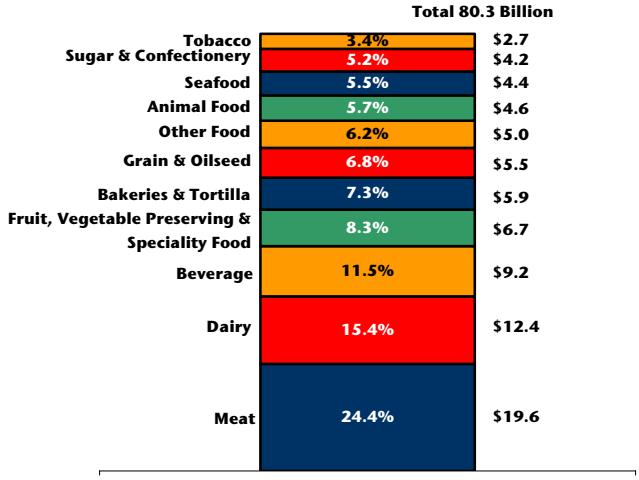


Source: Statistics Canada.

- **The largest FBT processing industry is meat products manufacturing, followed by dairy products manufacturing and beverage manufacturing.**

  FBT processing is the largest manufacturing industry in seven provinces. It is the second largest in Ontario and British Columbia and the third largest in Alberta.

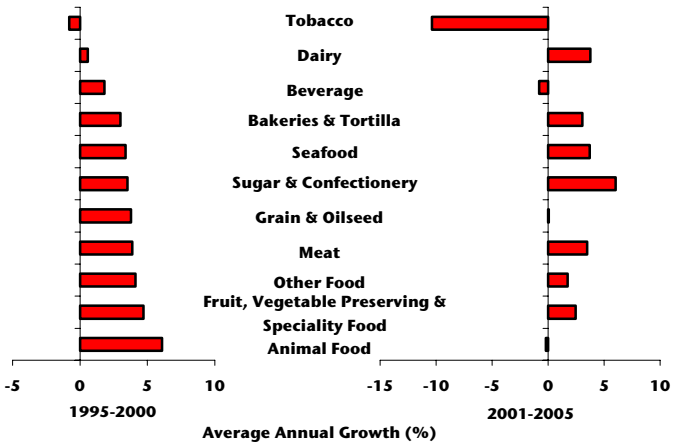
Chart B3.5
Value of FBT Processing Shipments, 2005



Source: Statistics Canada.

- **Most food processing industries have experienced a slowdown in average annual growth relative to the late 1990's.** The notable exceptions are sugar and confectionery, and dairy processing industries.

Chart B3.6
Growth in Shipment Value in Real Dollars by FBT Processing Industry, 1995-2005



Source: Statistics Canada and AAFC calculations.

Large scale firms account for half of the output

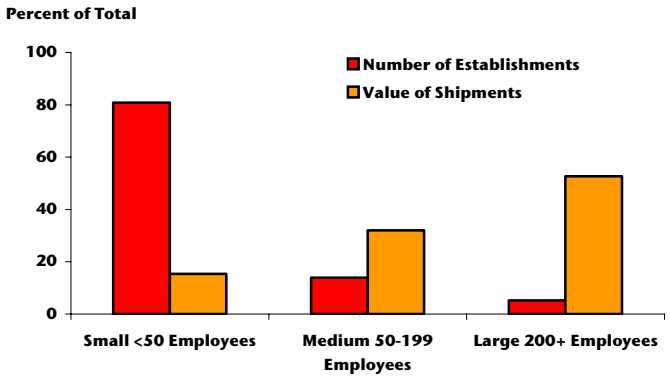
- **In 2003 there were 5,900 FBT processing establishments across Canada,** each producing at least $30,000 in sales.

  Large FBT processing establishments produce the bulk of output. In 2003, they comprised only 5% of the total number of establishments but accounted for 53% of the value of shipments.

  In contrast, small establishments comprised 81% of the total number of establishments but only accounted for 15% of the total value of shipments.

Chart B3.7

Distribution of FBT Processing Shipments and Number of Establishments by Employment Size, 2003



Source: Statistics Canada.

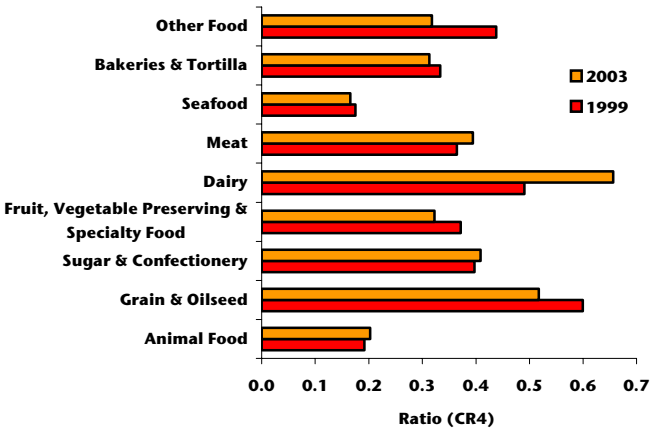
- **Concentration ratios in the food processing industry have been declining with the exception of meat and dairy industries.**

  Those industries that have experienced rising concentration ratios have also seen an increase in the number of mergers and acquisitions by foreign multinationals in the last ten years, such as in the meat and dairy industries.

  Those industries that have experienced falling concentration ratios, have seen an increase in the number of players and new entrants, such as in Grains and Oilseeds.

Chart B3.8

Concentration Ratio in Food Processing, 1999 and 2003



Source: Statistics Canada.

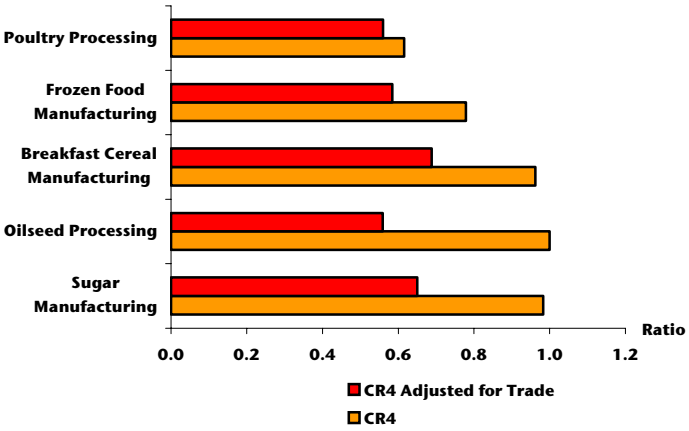
While Canadian food processing is fairly concentrated, once imports are taken into consideration, concentration ratios decline

- **Many of the food processing sub-sector industries have high concentration ratios (CR4), with the top four firms of such sub-sector industries accounting for up to 80% of total industry sales.**

  Once these ratios are adjusted for trade, concentration ratios decline.

Chart B3.9

Concentration Ratios of Select Food Processing Industries, 2001



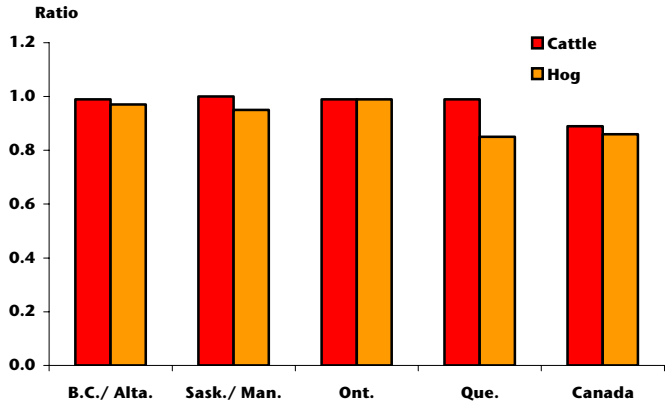
Source: Statistics Canada, Measuring industry concentration in Canada's food processing sectors 1990-2001, by Darryl Harrison and James Rude.

- **On a regional basis, the CR4s can be higher than the national ratios, as witnessed by the animal slaughtering industries in various provinces**.

  Concentration ratios (CR4) for most regions in Canada are close to one.

Chart B3.10

Regional Concentration Ratios (CR4) for Animal Slaughtering, 2002



Source: AAFC, Cattle Slaughter Statistics for Federal Abattoirs.

FBT processing is becoming more international in scope

- **Most of the large establishments are owned by firms that are multinationals.**

  Canadian companies rank among these global manufacturers.

Chart B3.11
Top Global Food Manufacturers, 2004

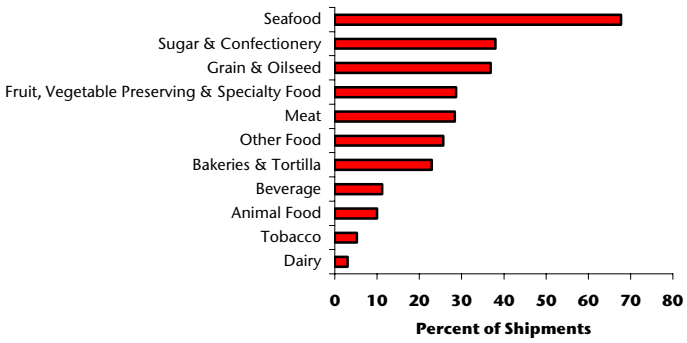
Rank	Company	Headquarters	Global Sales (Billions US$)
1	Nestlé	Switzerland	61.6
2	Archer Daniel Midland	U.S.	36.2
3	Kraft Foods	U.S.	31.0
4	Unilever	England / Netherlands	29.9
5	Cargill	U.S.	27.3
48	McCain Foods	Florenceville, Canada	4.7
69	Maple Leaf Foods	Toronto, Canada	3.2
72	George Weston	Toronto, Canada	3.1
89	Saputo	Montreal, Canada	2.5

Source: Food Engineering, October 2004.

- **About three-quarters of all FBT processing shipments are destined for Canadian consumers and the rest are exported.** However, some sub-sectors are more export-oriented than others. For example, two-thirds of seafood products are exported and only 3% of dairy products are exported.

  In 2005, Canadian processed products were exported to 186 countries, with 80% of the total going to just two markets - the U.S. (70%) and Japan (10%).

Chart B3.12
FBT Processing Export Intensities, 2005

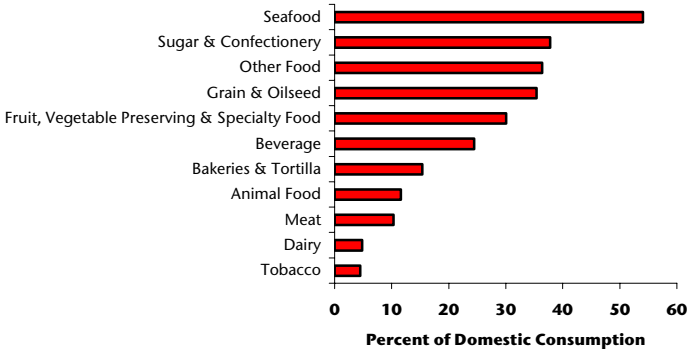


Source: Statistics Canada and AAFC calculations.

- **FBT processors compete with imports for domestic sales.** On average, food, beverage and tobacco product imports account for 20% of the domestic market.

  In general, the sub-sectors with the highest and lowest export intensities also have the highest and lowest import intensities, respectively.

Chart B3.13
FBT Processing Import Intensities, 2005



Source: Statistics Canada and AAFC calculations.

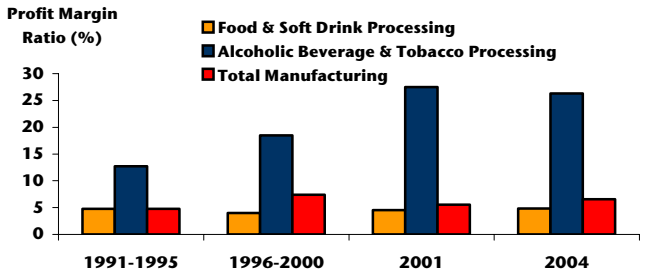
FBT processing has lower profit margins but higher rates of return than manufacturing in general

- **Alcoholic beverage and tobacco processing consistently had substantially higher profit margin ratios than general manufacturing,** while food processing has had slightly lower profit margin ratios.

  The profit margin ratio indicates management's ability to generate earnings from the principal business activities of a firm.

Chart B3.14

Profit Margin Ratio of Selected Industries, 1991-2004



Source: Statistics Canada.

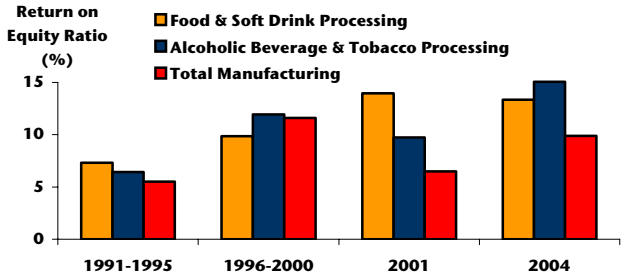
Note: See glossary for definition of the profit margin ratio.

- **In 2004, food and soft drink processing had a higher return on equity ratio than general manufacturing.**

  The return on equity ratio measures the level of return to the owners/investors and is another indicator of profitability.

Chart B3.15

Return on Equity Ratio of Selected Industries, 1991-2004



Source: Statistics Canada.

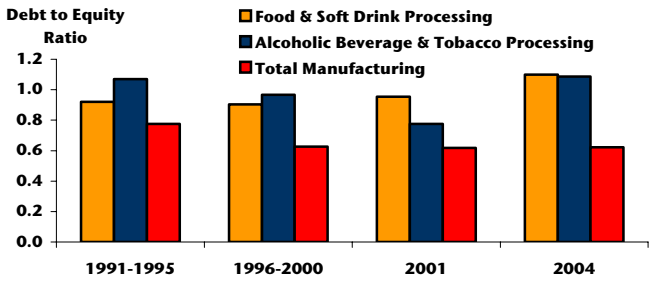
Note: See glossary for definition of the return on equity ratio.

- **FBT processing tends to be more highly leveraged than general manufacturing according to the debt to equity ratio.**

  This ratio compares the relative size of debt to resources invested by the owners. It indicates the extent to which a firm relies on borrowed funds to finance its operations.

Chart B3.16

Debt to Equity Ratio of Selected Industries, 1991-2004



Source: Statistics Canada.

Note: See glossary for definition of the debt to equity ratio.

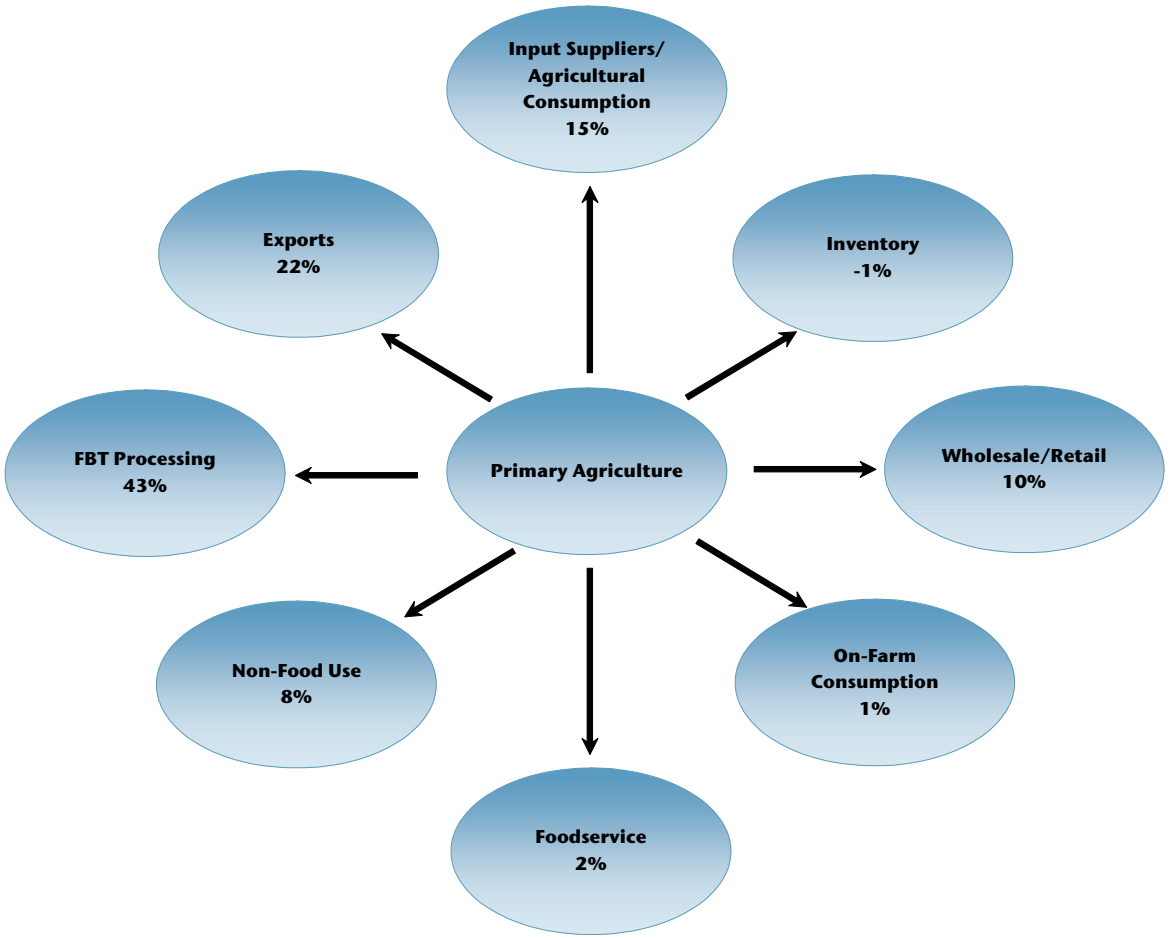
SECTION B4

Primary Agriculture

Agricultural producers have direct links to all the stages in the supply chain

- Agricultural producers have many alternative marketing choices. In 2002, 22% of farm production was exported directly, 43% went to food processing (some of which was also exported), 10% to food distribution and another 15% was consumed within primary agriculture.

Chart B4.1
Disposition of the Value of Agricultural Production, 2002



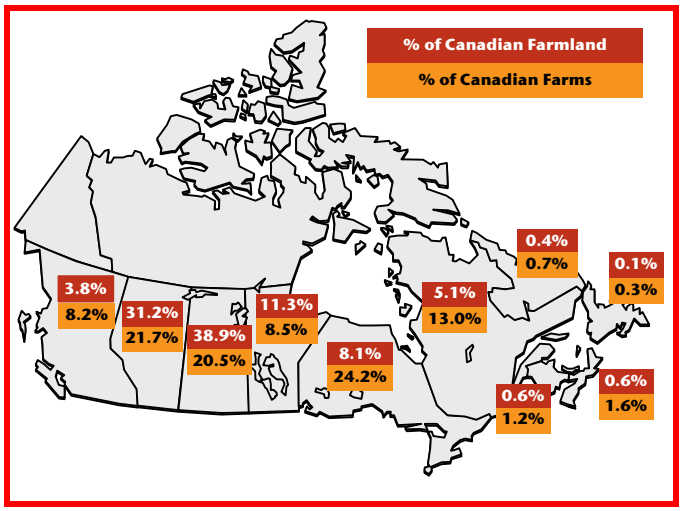
Source: Statistics Canada and AAFC calculations.

Production is very diverse across regions of Canada

- **In 2001 there were 167 million acres of farmland in use across Canada.**

  The Prairie provinces account for 137 million acres or roughly 81% of total farmland. British Columbia, Ontario and Quebec account for another 29 million acres or 17%. The remaining 2% of farmland is located in Atlantic Canada.

Chart B4.2
Provincial Shares of Farmland and Farms, 2001



Source: Statistics Canada.

- **Farm size varies across Canada depending in large part on commodity specialization and geographic characteristcs of regions.**

  The average farm size in Ontario, where farming is more intensive, is around 230 acres. The average farm size in Saskatchewan, where farming is more extensive, is nearly six times this size or 1,300 acres.

  There are more farm operators than there are farms because of partnerships and other joint ownership arrangements.

Chart B4.3
Number and Size of Farms, 2001

	Farmland (Thousands Acres)	Farms (#)	Average Farm Size (Acres)	Farm Operators (#)	Farm Employment (#)
Canada	**166,802**	**246,923**	**676**	**346,195**	**293,000**
N.L.	100	643	156	780	600
P.E.I.	646	1,845	350	2,455	3,700
N.S.	1,006	3,923	256	5,080	6,500
N.B.	959	3,034	316	3,895	5,700
Que.	8,444	32,139	263	47,385	58,000
Ont.	13,507	59,728	226	85,015	75,400
Man.	18,784	21,071	891	28,795	25,500
Sask.	64,904	50,598	1,283	66,275	44,000
Alta.	52,059	53,652	970	76,195	49,900
B.C.	6,393	20,290	315	30,320	23,500

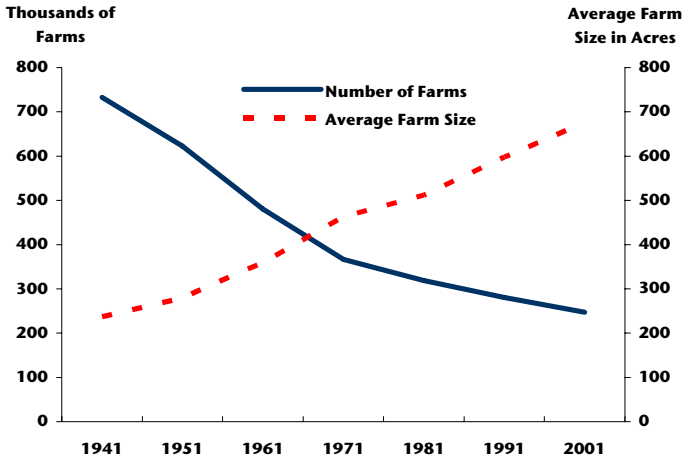
Source: Statistics Canada.

Note: Farm operators are those who are involved in the day-to-day operation of a farm. Employment is recorded by major work activity. Thus, if a farm operator relies on off-farm work for a significant portion of his/her income, he/she is not considered to be in farm employment.

Increasing scale of operation and consolidation is the general trend

- **Over the last 60 years farm size has been steadily increasing,** and the average farm size is now 676 acres. The increase in size reflects in part economies of scale associated with a change to more capital-intensive technologies.

Chart B4.4
Number and Size of Farms in Canada, 1941-2001

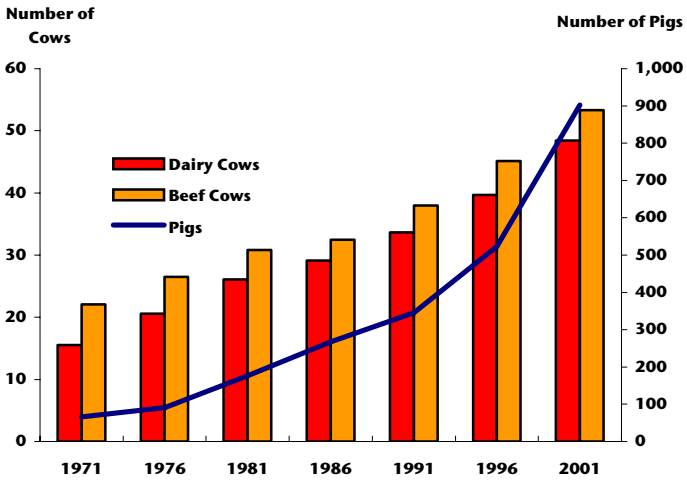


Source: Statistics Canada.

- **Farm size is also increasing in terms of herd size.**

  The average number of dairy cows per farm has more than tripled over the last 30 years while the average number of pigs per farm has increased more than tenfold.

Chart B4.5
Average Herd Size, 1971-2001



Source: Statistics Canada and AAFC calculations.

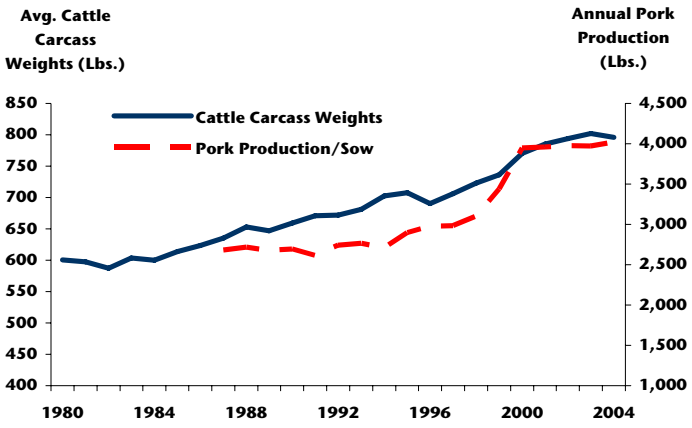
Technological change and improved management are leading to higher yields

- **Livestock yields have increased over time as a result of genetics, biotechnology and better management practices.**

  Over the last 20 years cattle carcass weights have increased by 33%.

  Larger litter sizes, more litters per year, and heavier carcass weights have resulted in a 49% increase in pork production per sow since 1990.

Chart B4.6
Livestock Yields, 1980-2004



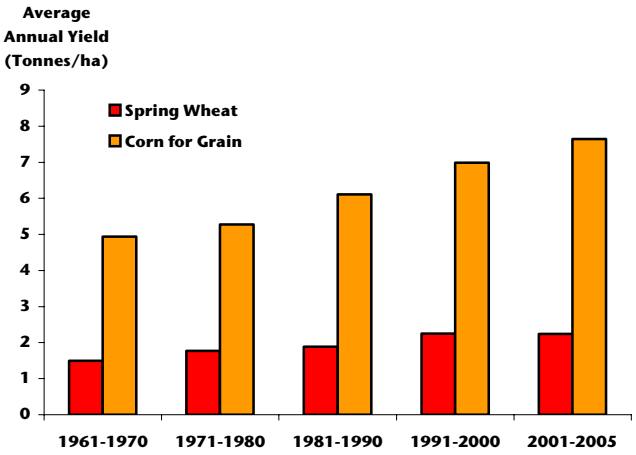
Source: Canadian Beef Grading Agency for cattle carcass weights and Statistics Canada for pork production per sow.

Note: Data for pork production begins in 1987.

- **Crop yields have also shown steady growth as a result of plant breeding.**

  Yields have been set back over the last few years because of adverse growing conditions such as droughts and grasshopper infestations, especially in the wheat growing regions of western Canada.

Chart B4.7
Spring Wheat and Corn Yields, 1961-2005



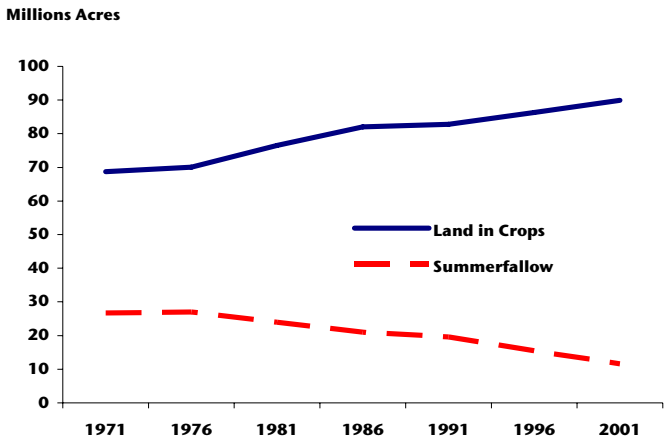
Source: Statistics Canada.

Improved management technologies are reducing the need for summer-fallow

- **Over the last 30 years there has been a strong decline in summerfallow area in the Prairies and a corresponding increase in cropland.**

  The decline in summerfallow has been enabled by the adoption of improved land management and farming techniques.

Chart B4.8
Land Use, 1971-2001



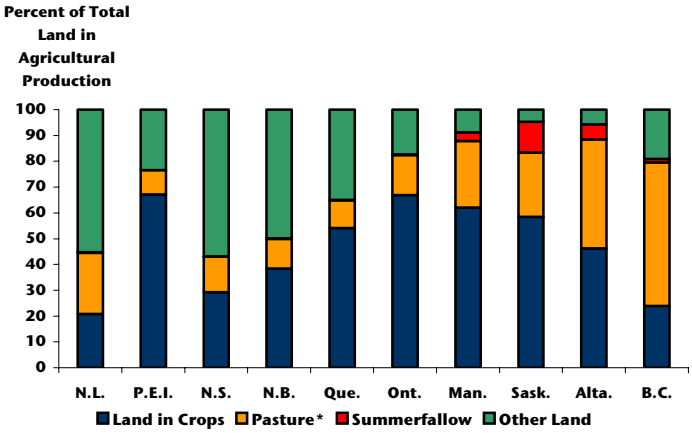
Source: Statistics Canada.

- **In 2001, 90 million acres of farm land were in cultivation, 12 million in summerfallow and another 12 million in tame pasture.** The remaining 53 million acres were marginal pasture as well as woodlots, swamps, bogs and land for the farm homestead.

  In percentage terms, Prince Edward Island and Ontario have the most area in crops relative to their total farmland. Alberta and British Columbia have the most area in tame and natural pasture, and Saskatchewan and Alberta, the most area in summerfallow.

  The use of summerfallow in eastern Canada is very small, less than half of one percent of total farmland.

Chart B4.9
Land Use, 2001



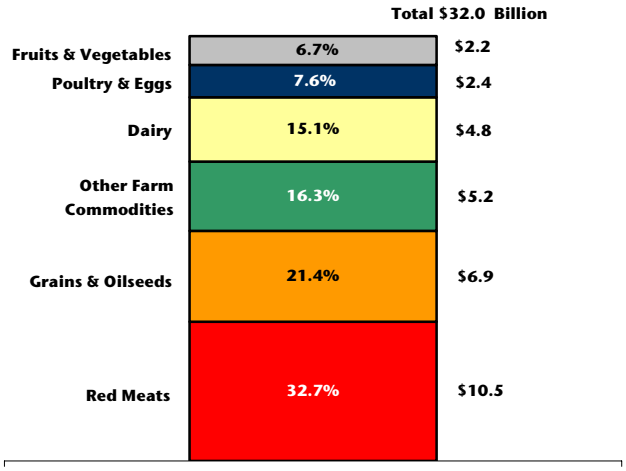
Source: Statistics Canada.

Note: *Includes tame pasture (i.e. cultivated) and marginal pasture (i.e. non-cultivated).

Canada produces a diverse set of commodities and the mix varies across the country

- **In 2005, red meats, grains and oilseeds and dairy were the most important commodities, contributing close to 70% of total farm market receipts**.

Chart B4.10
Farm Market Receipts by Commodity, 2005



Source: Statistics Canada.

- **The importance of the different commodity groups varies from region to region.**

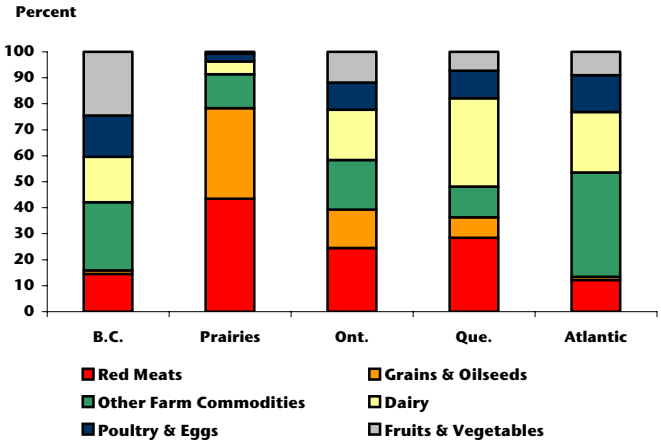
  In British Columbia, market receipts are balanced across a range of commodities, but the most important are fruits and vegetables and floriculture and nursery.

  In the Prairies, red meats and grains and oilseeds currently account for almost 80% of market receipts.

  Red meats also usually dominate in Ontario while dairy market receipts in Quebec have greater importance.

  In Atlantic Canada, potatoes and dairy are the most important commodities.

Chart B4.11
Regional Farm Market Receipts by Commodity Share, 2005



Source: Statistics Canada.

Producers market a significant proportion of farm production through co-operatives

- **In 2003, co-operatives marketed $8.9 billion worth of Canadian agricultural products.**

Co-operatives are used by farmers to market their products collectively. Close to 300 agricultural marketing co-operatives are incorporated in Canada, representing close to 87,000 memberships and more than 27,000 employees. In 2003, about 40% of dairy production, over half of poultry and egg production and almost 30% of honey and maple production were marketed through co-operatives in Canada.

Co-operative marketing revenues have decreased in recent years due to divestitures and demutualizations in the sector. In 2000, the Saskatchewan Wheat Pool, the largest of the agricultural co-operatives, divested its interest in three livestock operations. In 2001, Agrifoods International Cooperative Ltd., a large dairy co-operative, sold most of its processing facilities to a private company. Also in 2001, Agricore Co-operative merged with United Growers Limited (UGG) to become a private company - Agricore United.

The growing season of 2003 was negatively affected by a severe drought which particularly impacted the grains and oilseeds sector in western Canada.

Chart B4.12
Farm Production Sales by Co-operatives, 2003

Rank	Co-operative Sales (Millions $)	Co-operatives' Market Share (%)
Dairy	3,177	39
Cattle & hogs	2,032	22
Poultry & eggs	1,458	57
Grains & oilseeds	1,082	22
Fruits & vegetables	233	8
Honey & maple	138	28
Total	**8,885**	

Source: Co-operatives Secretariat and Statistics Canada.

Note: 1) Market share is calculated at the farm gate level.
2) The total of Co-operative sales includes other marketing revenues.

Some sectors are heavily export-oriented, while others are not

- **Grain and oilseed producers have always been very export-dependent.**

  In 2002 grain producers earned 33% of their cash receipts from the export market, down from a share of around 50% in 2001. The drop in the export share of grain cash receipts was due to reduced supplies available for export because of the drought. 2003 showed a rebound to 40% as a result of increased grain production. However in 2004, the export share of grain and oilseeds cash receipts was slightly lower than 2003 because of higher stocks and domestic use.

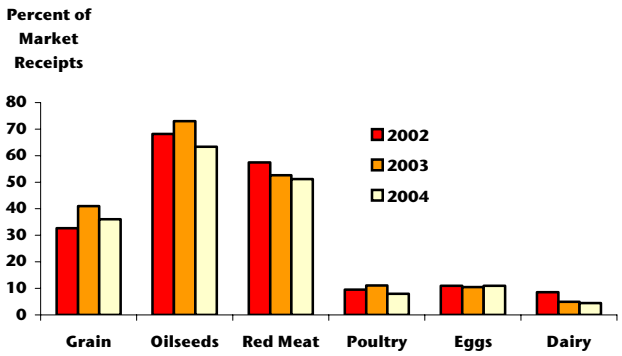
  The export dependency of red meat producers nearly doubled over the last decade. However, the export share fell slightly in 2003 and 2004 as a result of BSE.

  The export share of poultry dropped slightly in 2004 as a result of the avian influenza outbreak in British Columbia.

  The 2002 World Trade Organization (WTO) ruling on Commercial Export Milk (CEM) coupled with the WTO subsidized export limits have contributed to the drop in dairy export dependency since then.

Chart B4.13

Portion of Farm Market Receipts from Export Sales, 2002, 2003 and 2004



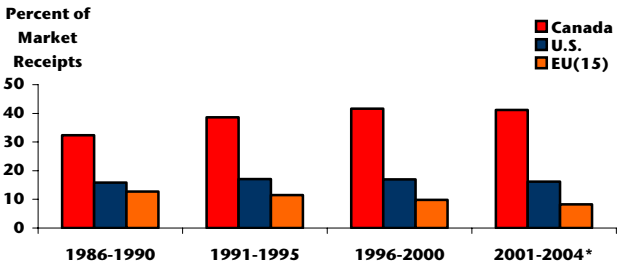
Source: Statistics Canada and AAFC calculations.

Note: Export dependency is calculated in terms of volume to avoid export and farmgate price differentials.
Grain and oilseeds export dependency is calculated on a crop year basis and dairy on a dairy year basis.

- **Overall, Canada's agricultural producers are significantly more export-oriented than are U.S. and EU(15) agricultural producers.**

Chart B4.14

Portion of Farm Market Receipts from Export Sales for Canada, the U.S. and the EU(15), 1986-2004



Source: Statistics Canada, OECD and AAFC calculations.

Note: Export dependency is calculated as a value of production weighted average of the export dependencies of the following commodities - wheat, coarse grains, oilseeds, beef, pork, dairy and poultry. These commodities cover about 50% of the EU(15)'s total farm production, 60% of the U.S.'s total of the farm production and 75% of Canada's total farm production.
*EU(15) average only available for 2001-2002.

Producers are diversifying their production mix

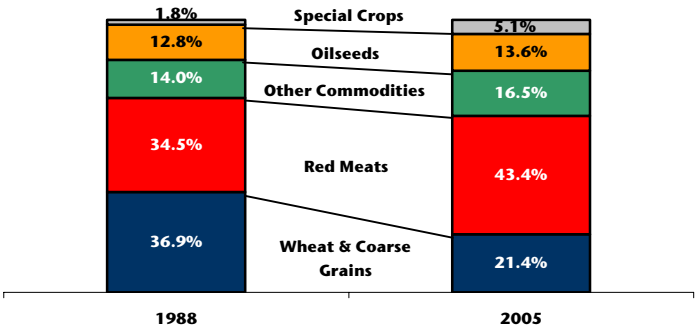
- **Producers are diversifying their production mix in order to increase their value added and to spread risk.**

  In the Prairies, grain's share of market receipts has dropped from 37% in 1988 to around 21% in 2005, with a corresponding rise in the shares of red meats and special crops.

  Declining grain prices and domestic policy reforms such as the elimination of the *Western Grain Transportation Act* in 1995 have enabled the region to become more competitive in producing hogs and feeding cattle, due to the availability of feed grains.

Chart B4.15

Evolution of Prairie Farm Market Receipts by Commodity, 1988 and 2005



Source: Statistics Canada and AAFC calculations.

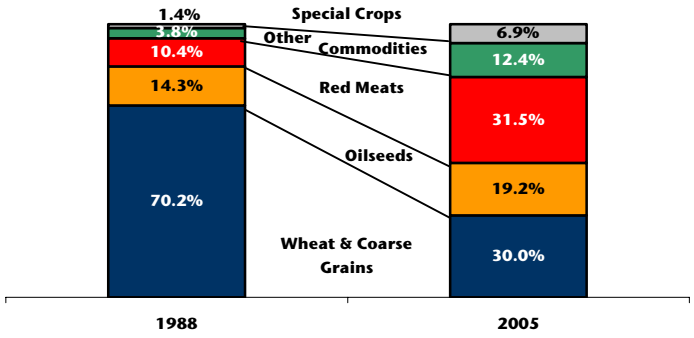
- **In terms of commodity export earning shares, diversification away from grain in the Prairies has been even more dramatic.**

  The increase in share for red meats is notable, increasing steadily until the BSE situation in 2003.

  The export share of wheat has declined significantly from 70% in 1988 to 30% in 2005.

Chart B4.16

Evolution of Prairie Export Earnings by Commodity, 1988 and 2005



Source: Statistics Canada and AAFC calculations.

- **Organic production has also been increasing. Over the last six years, the number of certified organic producers has increased by around 70% and the number of acres under organic production has tripled**.

Chart B4.17

Number of Certified Organic Growers, 1999-2004

	1999	2000	2001	2002	2003	2004
Number of certified producers	2,321	2,981	3,236	3,120	3,317	3,670
Number of farms in transition	304	312	>277	>390	>250	>258
Number of acres under organic production	>455,800	>839,250	>1,064,000	1,181,921	1,261,959	1,481,360

Source: Canadian Organic Growers Inc., Organic Statistics 2004, CANADA and The Canadian Organic Grower magazine, various issues.

Farm market receipts crept up in 2005

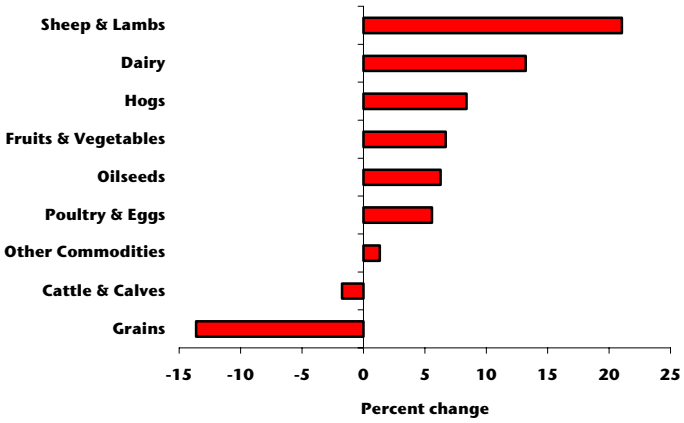
- **Farm market receipts in 2005 were higher by 4% relative to the previous five-year average.**

  Due to the reopening of the U.S. border to live ruminants in July 2005, cattle and calf exports recovered some of the damage from BSE but market receipts ended 2005 at 2% below the previous five-year average (see Charts A2.10/ A2.11)

  Relative to the previous five-year average, receipts for grains and oilseeds were down by 14% due to downward pressure on prices from abundant grain supplies and a strong Canadian dollar.

Chart B4.18

Farm Market Receipts by Commodity 2005 Relative to Five Year Average



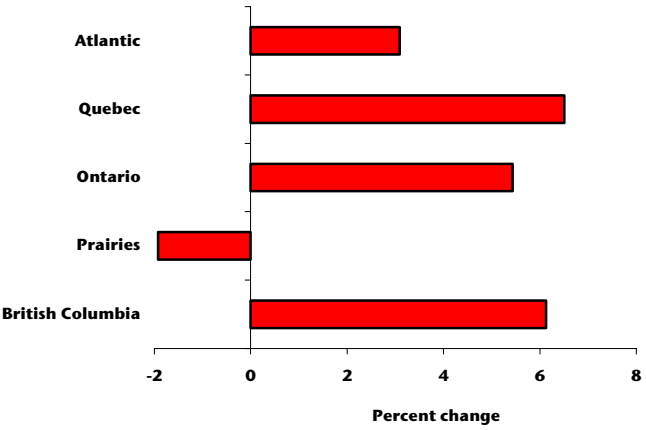
Source: Statistics Canada.

- **On a regional basis, the Prairies have seen the least recovery in market receipts due to the lingering effects of BSE and low grain prices.**

  British Columbia experienced relative growth in 2005 due to the province's healthy fruit and vegetable sector and the recovery of the poultry sector from the 2004 outbreak of avian flu.

Chart B4.19

Regional Farm Market Receipts, 2005 Relative to Five Year Average

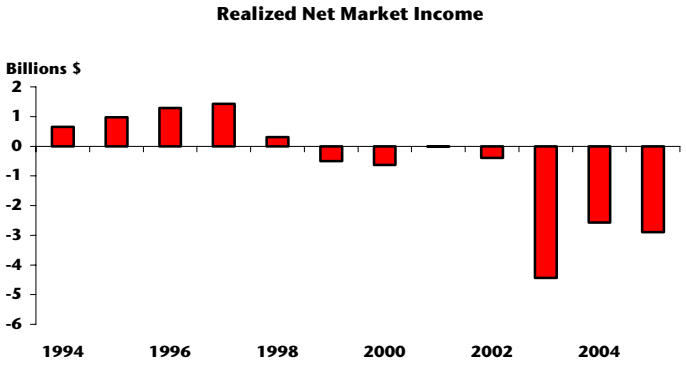


Source: Statistics Canada.

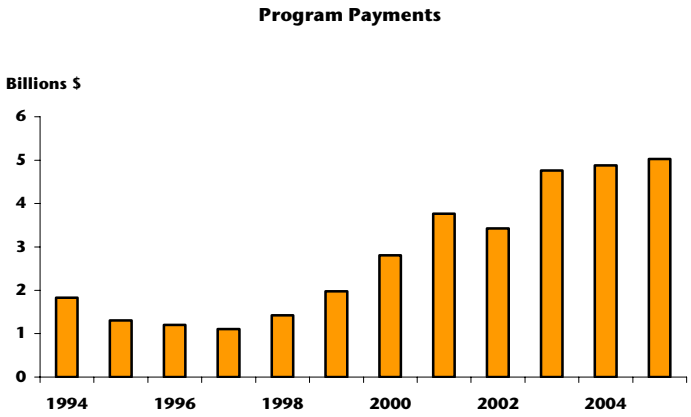
Program payments help to cover low market incomes

- **Realized net market income increased between 2003 and 2005, but there was still a net loss for farmers.** This reflects ongoing difficulties with BSE, poor grain quality and higher world petroleum prices.

Chart B4.20
Total Realized Net Farm Income, 1994-2005

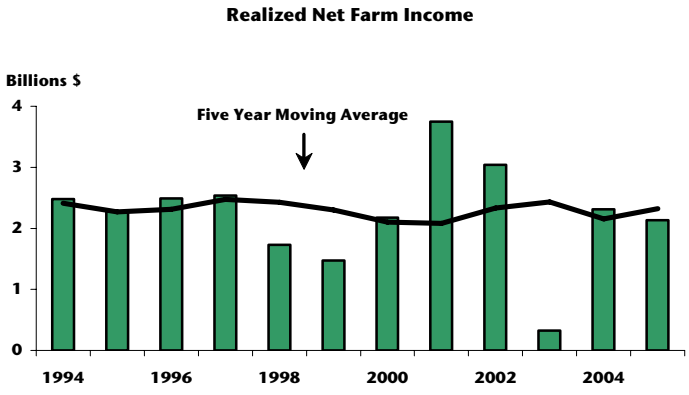


- Program payments reached an all-time high of $5 billion in 2005.



- **Realized net income for primary agriculture as a whole was $2.1 billion in 2005.**

  However, income situations vary by individual producers depending on their commodity specialization, size of operation and financial situation.



Source: Statistics Canada and AAFC.

Farm family income tends to be comparable to that of non-farm families

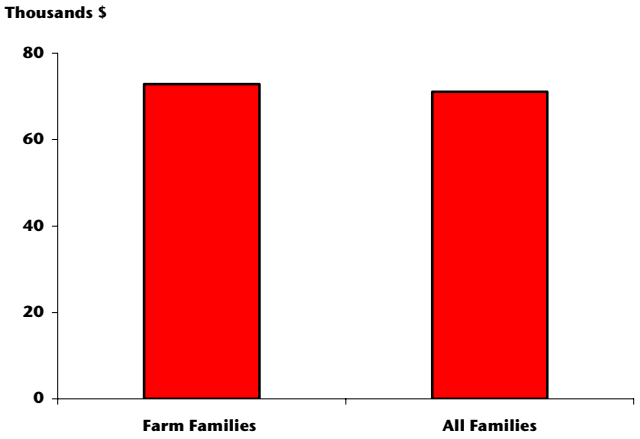
- **In most years, average farm family income is comparable to the average income received by non-farm families.**

  In 2003, the average total income from all sources for a farm family was $72,791 compared to $71,016 received by the average Canadian family.

  Small and medium-sized farms tend to have income slightly below the average of non-farm families, while families on large-sized farms tend to have income above the average.

  Farm family income is the sum of the total income of the farmer and his/her family members. It includes income from both farm and off-farm sources.

Chart B4.21
Average Family Income, 2003

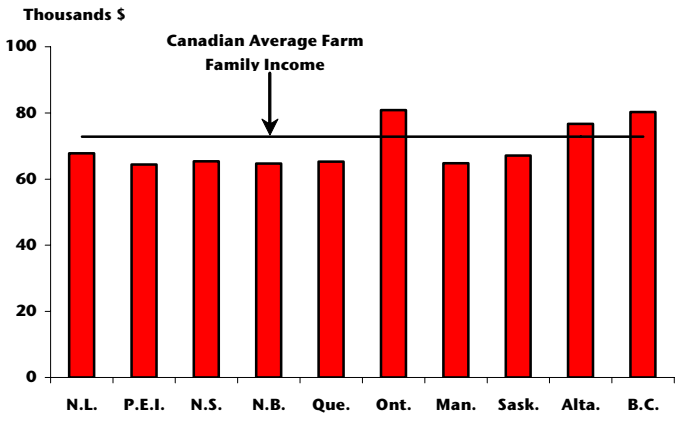


Source: Statistics Canada.

- **Farmers in Ontario, Alberta and British Columbia had, on average, incomes above the Canadian average.**

Chart B4.22

Average Farm Family Income by Province, 2003



Source: Statistics Canada.

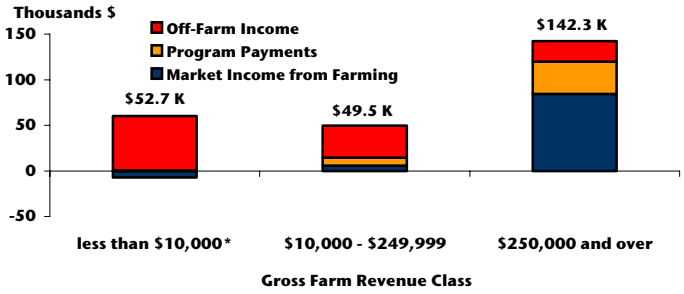
Off-farm income accounts for a significant amount of farm family income

- **In 2003 off-farm income, on average, contributed 79¢ of each dollar earned in total family income**.

  Small and medium-sized farm families do not have the scale of operation for farm income to contribute significantly to total family income. For these farm families, off-farm income is even more important in determining their standard of living, accounting for almost all of their family income.

Chart B4.23

Average Income of Farm Families by Source of Income, 2002



Source: Statistics Canada and AAFC calculations.

Note: 2000 data are used for the less than $10,000 revenue class.

- **British Columbia farm families report the largest proportion of off-farm income at 86%, followed by Alberta at 85% and Ontario and Newfoundland and Labrador at 81%.**

  A considerably smaller proportion of total family income came from the off-farm sources for farm families in Quebec and Manitoba at 62% and 71% respectively.

Chart B4.24

Off-Farm Income and Net Operating Income of Farm Families by Province, 2003

	Off-Farm Income	Net Operating Income	Off-Farm Income as a Percentage of Total
CANADA	57,328	15,463	78.8%
N.L.	54,837	13,003	80.8%
P.E.I.	48,981	15,438	76.0%
N.S.	48,248	17,101	73.8%
N.B.	45,151	19,566	69.8%
Que.	40,604	24,662	62.2%
Ont.	65,613	15,192	81.2%
Man.	45,960	18,842	70.9%
Sask.	53,256	13,890	79.3%
Alta.	65,359	11,341	85.2%
B.C.	68,863	11,389	85.8%

Source: Statistics Canada.

- **Low income measure (LIM) is defined as half (50%) of median family income adjusted for family size and composition.**

  On aggregate, regardless of the source of income, only 15% of all farm families exhibited income below LIM.

  The share of families with negative net farm income and above LIM has increased from 23% to 35%.

Chart B4.25

Distribution of Farm Families, 2003

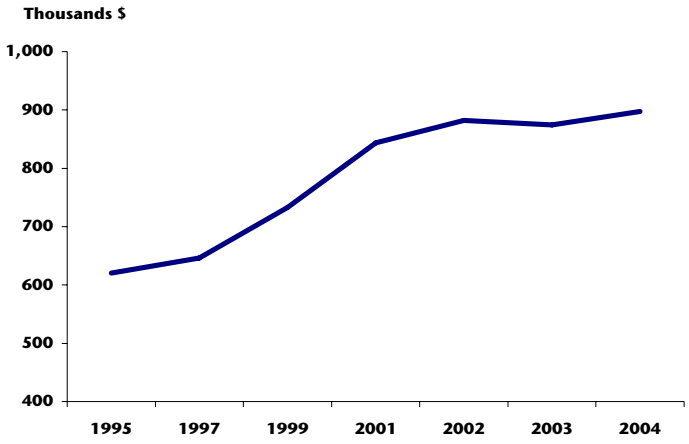
	NFI (%)		
Total Family Income	**Negative**	**Positive**	**Total**
Below LIM	8.0	7.0	15.0
Above LIM	35.0	50.0	85.0
Total	43.0	57.0	100.0

Source: Statistics Canada, Longitudinal Administrative Databank (LAD).

Net worth of farm households is higher than that of average Canadian households, and is increasing over time

- **Farm total net worth continued to increase over the last few years after a slight decline in 2003.** In 2004 the average farm's total net worth was $898,000, up 3% from 2002.

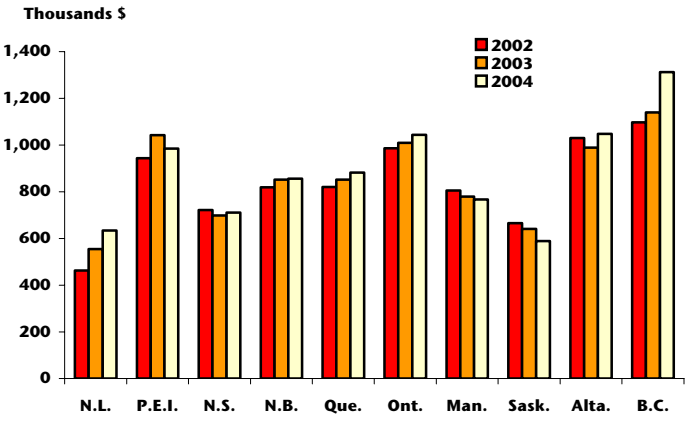
Chart B4.26
Average Farm Total Net Worth, 1995-2004



Source: Statistics Canada and AAFC.

- **The trend in net worth varied among the provinces.** In Manitoba, Saskatchewan and Prince Edward Island net worth declined, while in central Canada and British Columbia the upward trend of recent years continued.

Chart B4.27
Average Farm Total Net Worth by Province, 2002, 2003 and 2004



Source: Statistics Canada and AAFC.

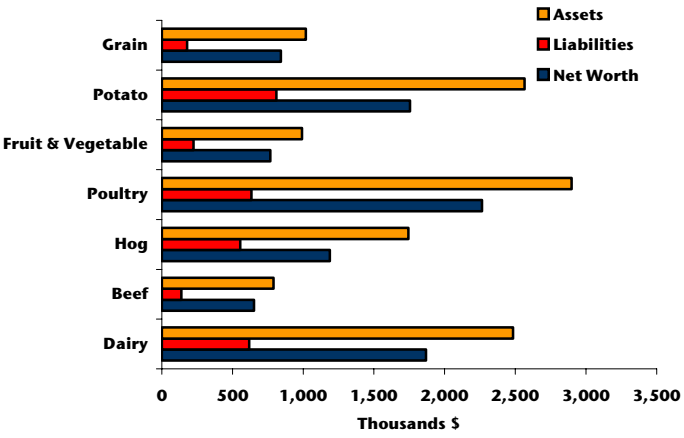
Farm net worth varies across sectors

- **On average, poultry, dairy, potato and hog farms have the highest net worth (ranging from $1.2 to $2.3 million in 2004).**

  On average, potato farms carry the largest debts ($810,000 per farm) followed by poultry, dairy and hog farms ($630,000, $620,000 and $560,000 respectively).

Chart B4.28

Average Assets, Liabilities and Net Worth by Farm Type, 2004

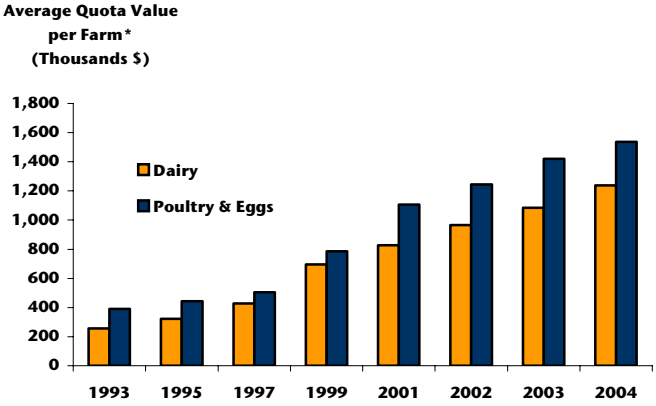


Source: Statistics Canada and AAFC.

- **Quota holdings in the supply managed industries have grown significantly in recent years.** In 2004 the average dairy farm had around $1.2 million worth of quota, and the average poultry farm around $1.5 million, accounting for 50% and 53% of total farm assets respectively.The trend is caused by the increase in the value of quota per animal and the increase in the number of animals per farm.

Chart B4.29

Average Quota Holdings of Supply Managed Farms, 1993-2004



Source: Statistics Canada and AAFC.

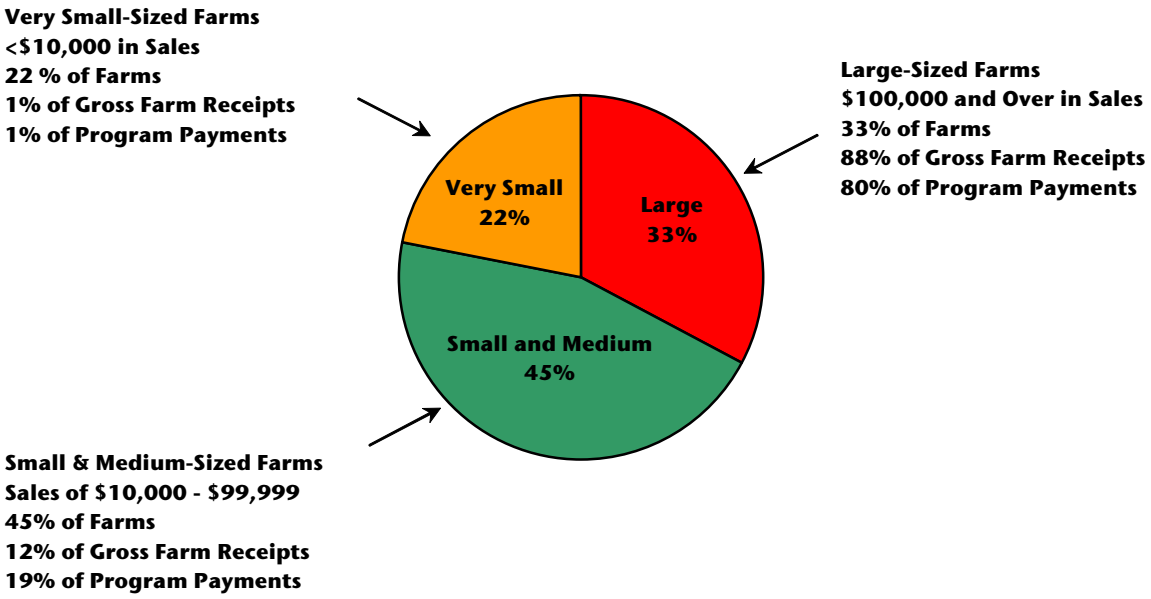
Note: *Market Value.

Large farms account for the vast majority of production

- **While only one-third of census farms are large-sized (sales $100,000 and over), they account for nearly 90% of farm production and receive 80% of agricultural program payments.**

  Small and medium-sized farms account for nearly half of all farms in Canada, but account for only 12% of production and receive most of the remaining 20% of program payments.

Chart B4.30
Distribution of Canada's 247,000 Farms by Gross Farm Receipts, 2001



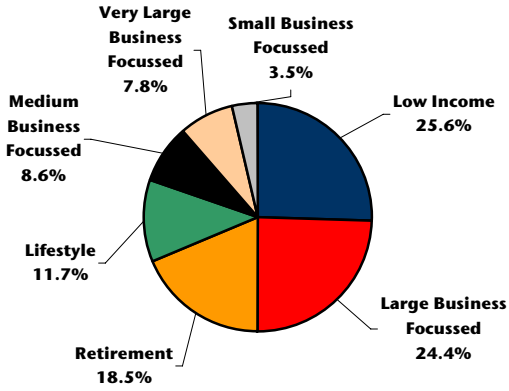
Source: Statistics Canada.

Different people farm for different reasons

- **Farms can also be classified based on the age, business motivation and financial situation of the farm operators.**
  - Almost one-third of farms are retirement and lifestyle farms.
  - Another 37% are low income farms, with total family income less than $35,000.
  - The remaining farms can be further categorized according to their scale of operation, ranging from small-sized to very large-sized farms.

Note: This classification has changed from previous years, and therefore the distribution is not comparable with previous years.

Chart B4.31
Distribution of Farms with $10,000 in Gross Farm Receipts or more by Typology Group, 2004



Source: Statistics Canada and AAFC.

Note: Farms with $10,000 and more in gross revenues.

	Typology	Definitions
$10,000 - $249,999	**Retirement (small)**	Family farms (gross revenues of between $10,000 and $249,999) Oldest operator is 60 years or older and receiving pension income No children involved in the day-to-day operation of the farm
	Lifestyle	Small sized family farms (gross revenues of $10,000 to $49,999) and off-farm income of $50,000 plus
	Small Business Focussed	Gross farm revenues $10,000 to $49,999 and total family income of $35,000 plus
	Medium Business Focussed	Gross farm revenues $50,000 to $99,999 and total family income of $35,000 plus
	Large Business Focussed	Gross farm revenues $100,000 to $249,999 and total family income of $35,000 plus
	Low Income (small)	Family farms (excl. retirement and lifestyle) with total family income below $35,000
$250,000 and Over	**Retirement (large)**	Same as above but gross revenues of $250,000 and above Oldest operator is 60 years or older and receiving pension income No children involved in the day-to-day operation of the farm
	Larger Business Focussed	Gross farm revenues $250,000 to $499,999 and total family income of $35,000 plus
	Very Large Business Focussed	Gross farm revenues of $500,000 and above
	Low Income (large)	Family farms (excl. retirement) with total family income below $35,000

Farm income varies by typology within the same revenue class

- **Average net operating income (gross farm revenues - total expenses) for the under $250,000 group in 2004 was $6,375 and $106,696 for the $250,000 plus revenue class.**

The retirement farms in both revenue classes generate positive net operating income. Retirement farms in the $250,000 plus sales class earn one of the highest net operating incomes of all farm groups.

The lifestyle and low income farms reported farm losses in 2004.

Chart B4.32
Farm Typology Data, 2004

Gross Revenue Class	Typology	Number of Farms	Gross Farm Revenue** (A)	Tot. Farm Expenses (B)	Family Share of GVT Payments** (C)	Family Share of Net Market Income*** (D)	Farm Wages and Salaries (E)	Off Farm Income (F)	Total Family Income (G=C+D+E+F)
$10,000 - $249,999	Retirement (small)	27,002	55,531	51,842	6,616	-3,147	1,743	29,861	35,073
	Lifestyle	18,295	25,285	33,051	3,201	-10,921	823	90,456	83,559
	Low Income* (small)	34,804	79,415	87,970	10,546	-19,072	2,051	13,493	7,018
	Small Business Focussed	5,462	27,710	20,265	4,259	2,945	868	37,471	45,543
	Medium Business Focussed	13,426	71,754	60,251	8,806	2,302	2,404	61,637	75,149
	Large Business Focussed	21,899	166,241	124,425	17,277	23,300	7,918	40,509	89,004
	Total	120,889	78,430	72,055	9,299	-3,237	2,845	40,121	49,027
$250,000 and over	Retirement (large)	2,008	571,522	490,253	41,780	35,664	18,835	29,796	126,076
	Low Income* (large)	5,420	624,087	699,955	41,219	-108,560	15,055	13,758	-38,528
	Larger Business Focussed	16,403	346,752	262,190	26,387	52,756	18,145	32,298	129,586
	Very Large Business Focussed	12,208	1,156,516	934,843	51,705	137,146	46,318	24,007	259,177
	Total	36,039	675,290	568,593	38,052	56,129	27,262	26,562	148,005

Source: Statistics Canada and AAFC.

Note: * Low income farms include those with family income under $35,000 (excl. retirement and lifestyle).

**Gross farm revenues includes governments payments.

*** Family share is based on family's percent ownership of the farm.

Performance varies among farm operators

- **Financial performance varies among farm operators, even among producers operating the same size farm with the same commodity specialization.** These variations in performance are consistent over time.

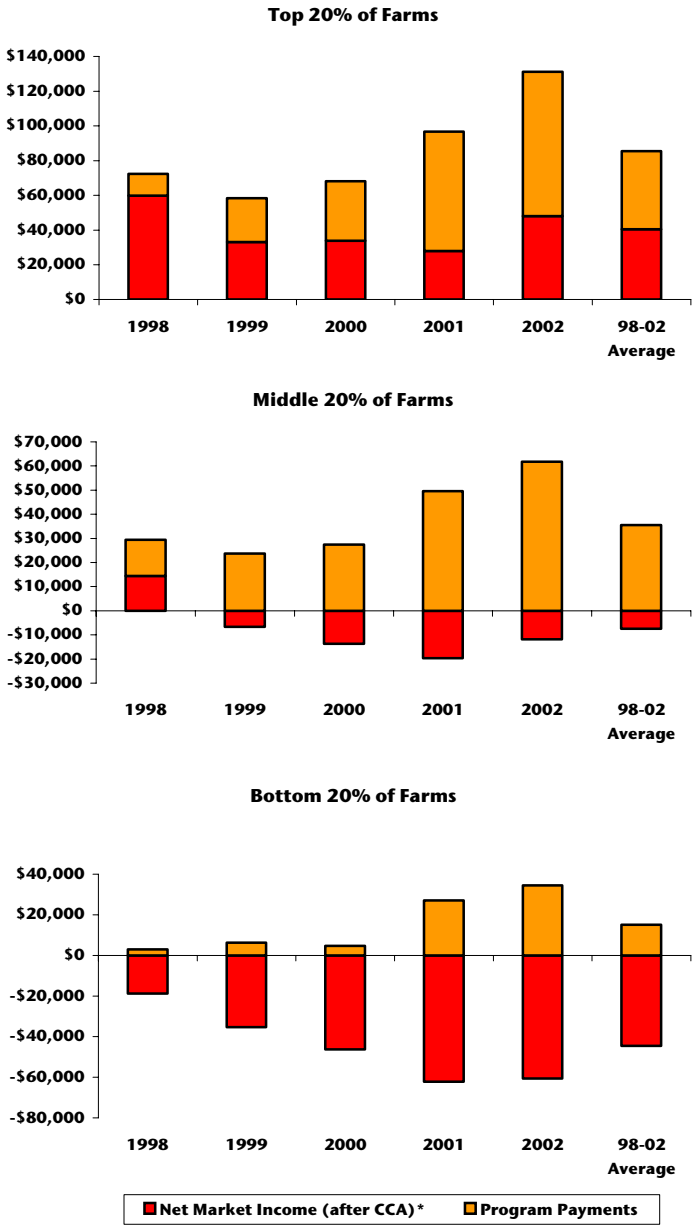
  Top performers are consistently profitable, regardless of market conditions. Most of their income comes from the market.

  The middle performers are sometimes profitable, but, on average, have negative net market income, and have depended on program payments for survival in recent years.

  The bottom performers consistently lose money on their operations, and rely heavily on large government payments.

Chart B4.33

Net Income of Large Canadian Grain and Oilseed Farms, 1998-2002



Source: NISA Database.

Note: *CCA - Capital Cost Allowance.
Farms were ranked according to their average net income over the five-year period. The three samples on which the chart analysis is based were drawn from this average ranking. Data for the individual producers in each sample were then collated for each of the five years.

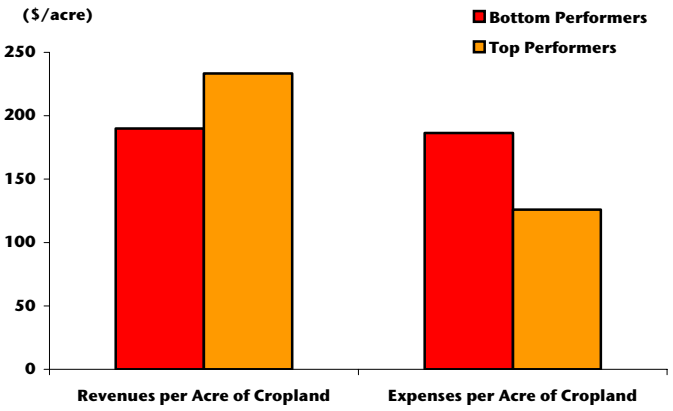
Higher revenues and better cost control are the difference between top and bottom performers

- **Top managed farms maximize revenues and at the same time control costs.** Top performing crop farms had higher revenues per acre of cropland and lower expenses than bottom performing farms.

  Note: Classification of top and bottom performers based on margin (net operating income/gross farm revenue). For this graph only, large farms are those with gross farm revenue of $100,000 - $500,000 and family income of $35,000 and over. Such farms are located in Saskatchewan, Manitoba, and Alberta.

Chart B4.34

Revenues and Expenses for Prairie Large Business Focussed Grain & Oilseed Farms, 2004



Source: Statistics Canada and AAFC.

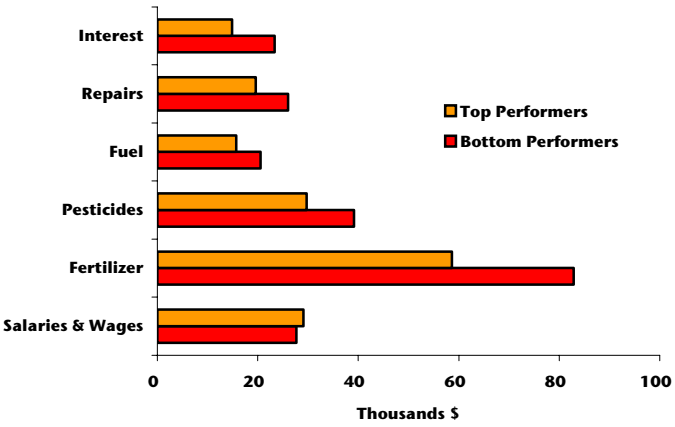
Note: Top and bottom performers are the top and bottom 20% respectively.

- **Cost control tends to reduce all types of expenses of the farm operation**.

  The top performers report lower average expenses than bottom performers.

Chart B4.35

Selected Average Expenses of Manitoba Large-Sized Grain & Oilseed Farms, 1998-2002



Source: NISA Database and AAFC calculations.

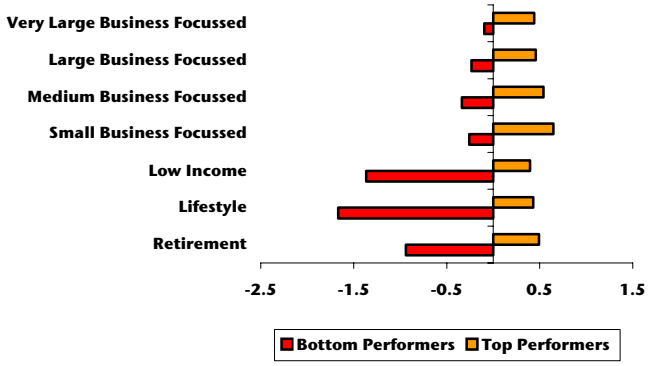
Note: Top and bottom performers are the top and bottom 20% respectively.

Small-sized farms can be as profitable as large-sized operators

- **Farm size is not a limiting factor in financial performance.** The top performers among small business focussed farms generate a gross margin ratio comparable to top performers among business focussed farms.

Chart B4.36

Gross Margin Ratios Reported by Top and Bottom Performers by Typology, 2004



Source: Statistics Canada and AAFC calculations.

Note: Gross margin ratios are calculated as the ratio of net operating income to gross farm revenue.
Top and bottom performers are the top and bottom 20% respectively.

SECTION B5

Agricultural Input and Service Suppliers

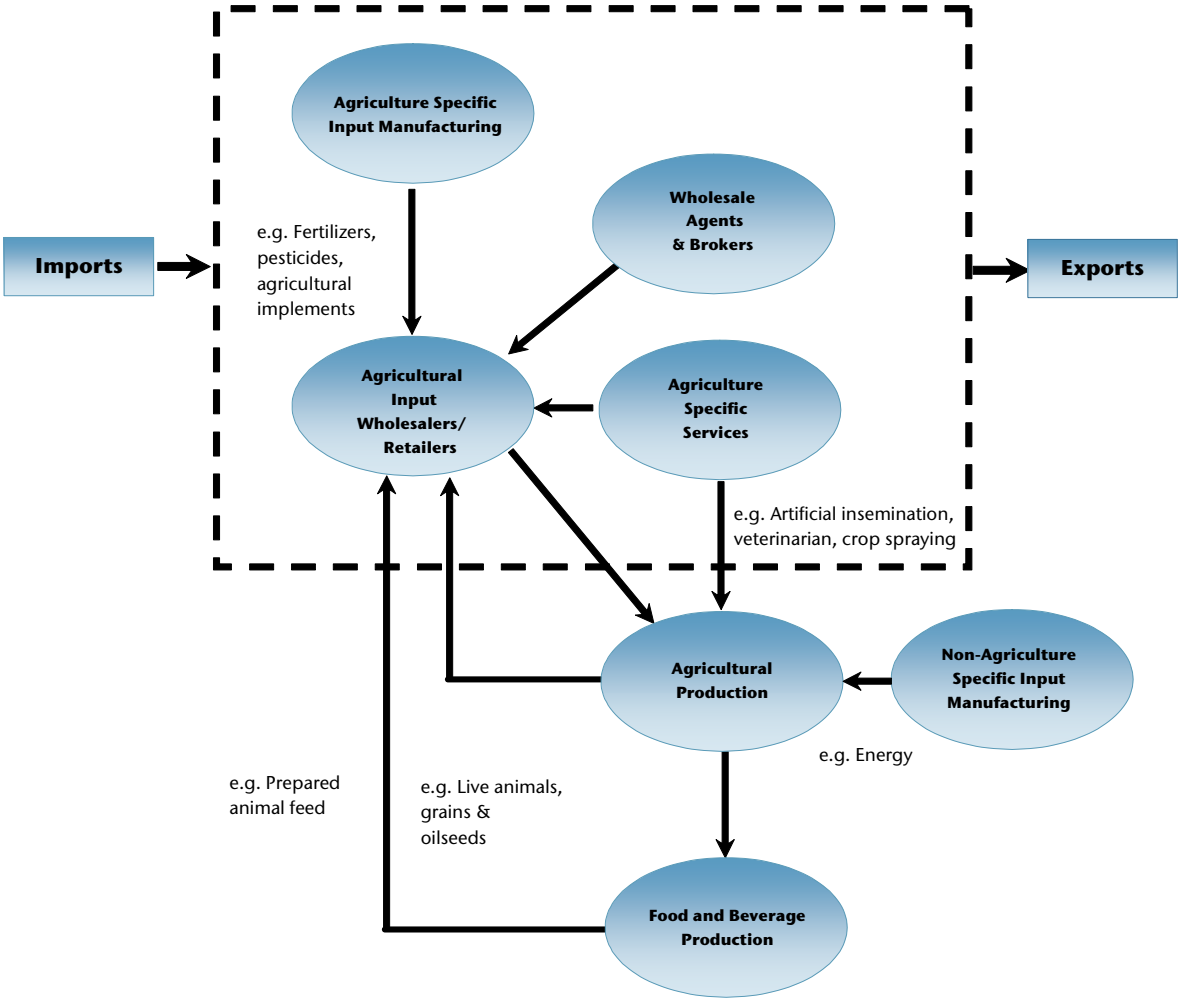
Input suppliers are a whole value chain

- **Agriculture specific input and service suppliers constitute a whole value chain within the agriculture and agri-food system and include manufacturing, service and retail/wholesale activities.** They supply and support primary agriculture, and at the same time act as buyers from downstream industries (e.g. prepared animal feed from grain and oilseed mills or feeder calves from cow calf operations).

  Agriculture specific input and service suppliers are heterogeneous. They range from multinational firms producing agricultural machinery and implements to small local businesses selling feed and pesticides, and from international commodity brokers to the next door neighbour doing custom work.

Chart B5.1

The Value Chain of Agriculture Specific Input and Service Suppliers

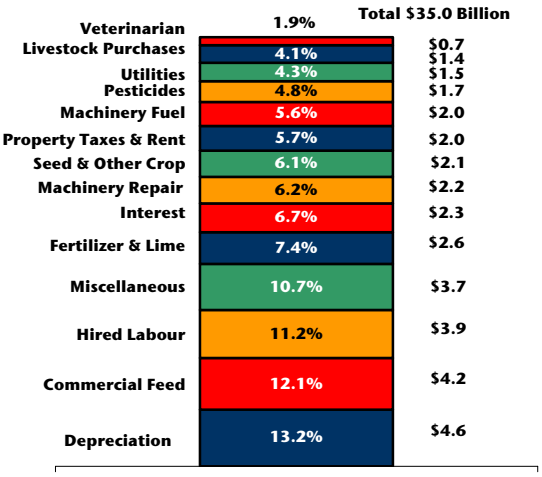


Globally, input prices have steadily increased

- **In 2005 agriculture producers spent nearly $30.4 billion on operating expenses after rebates,** and incurred another $4.6 billion in depreciation expenses.

  The largest individual expense category was for commercial feed at $4.2 billion followed by hired labour at $3.9 billion.

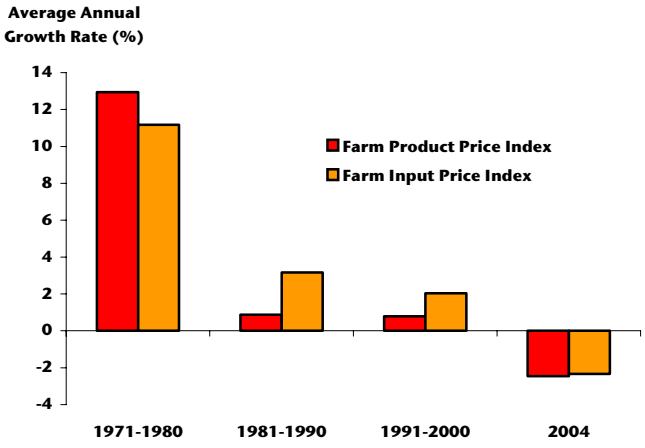
Chart B5.2
Farm Expenses, 2005



Source: Statistics Canada.

- **Since 1981, the increase in farm product prices has not kept pace with the increase in farm input prices.** The 2003 negative growth rate in product prices may be partially due to BSE.

Chart B5.3
Farm Input Price and Farm Product Prices, 1971-2004



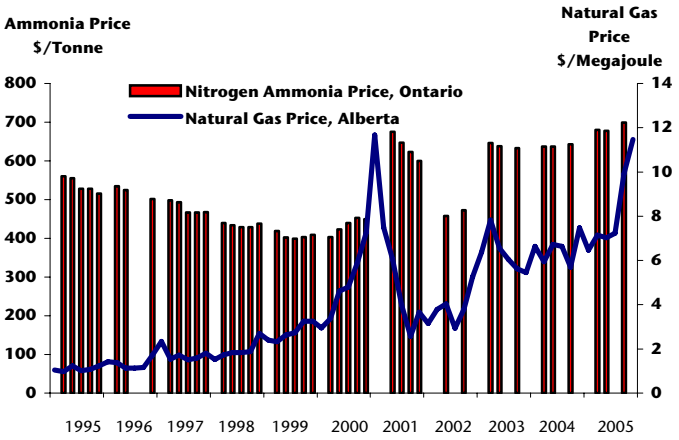
Source: Statistics Canada.

Improvements in inputs and changing agronomic techniques have contributed to rising input costs

- **The cost of nitrogen fertilizer is influenced by natural gas prices.** This is because natural gas is the main input into the production of ammonia, and ammonia in turn is the basic component used in nitrogen fertilizer manufacturing.

  This relationship, however, has not always held. In the mid-1990's strong fertilizer demand in combination with near-full industry capacity utilization kept fertilizer prices high despite low natural gas prices.

Chart B5.4
Nitrogen Ammonia & Natural Gas Prices, 1995-2005

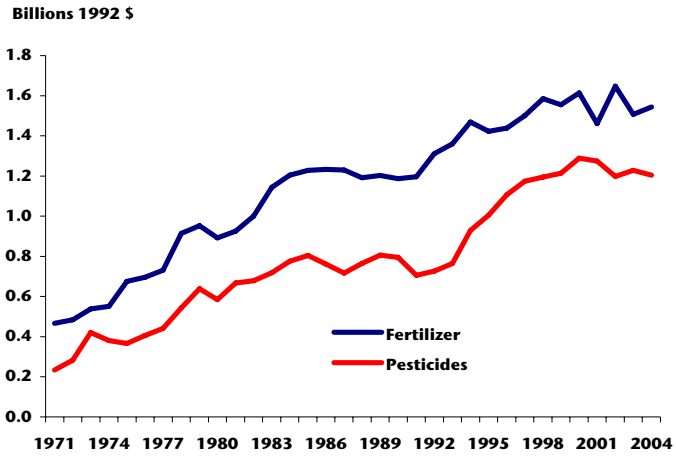


Source: Natural Resources Canada and Ridgetown College, University of Guelph.

- **Over time, agricultural producers have adopted different farming practices to either improve yields, reduce costs or differentiate their products, which are creating demand for different kinds of inputs.**

  For example, with a decrease in summerfallow and more intensive farming, chemical usage, such as fertilizer and pesticides, has been steadily growing over time.

Chart B5.5
Chemical Input Usage in Farming, 1971-2004



Source: Statistics Canada and AAFC calculations.

Farmland values reflect commodity price movements

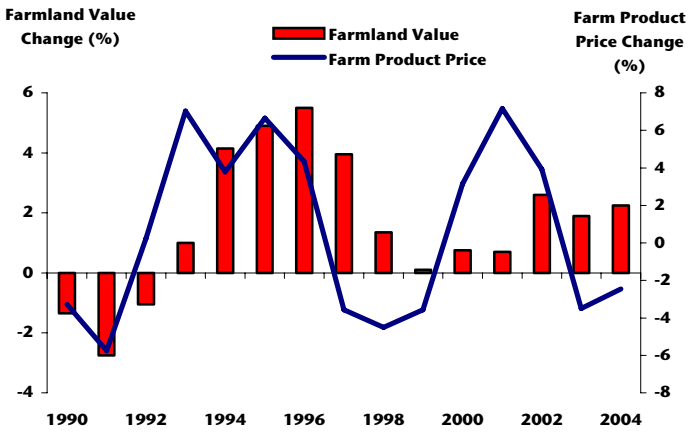
- **One of the strongest determinants of farmland value is the overall health of the agriculture sector.**

  Commodity prices and government program payments tend to become capitalized in land values because land is a fixed input.

  Other factors that affect land values include the land quality, distance from major urban centers, and general economic conditions.

Chart B5.6

Farmland Value in Canada and Farm Product Prices , 1990-2004



Source: Farm Credit Canada, Statistics Canada and AAFC calculations.

- **For example, land prices in Saskatchewan generally follow price movements in wheat with a lag.**

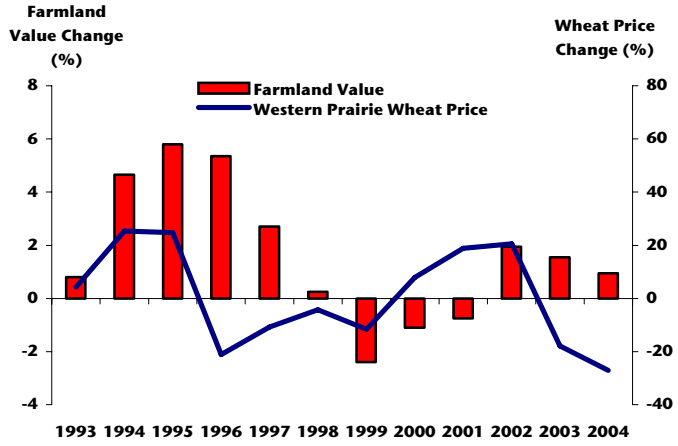
  Rising wheat prices since 2000 cushioned falling land prices, and eventually contributed to a positive increase in 2002.

  If the historical trend continues, Saskatchewan land prices in 2004 should fall in response to the fall in wheat prices in 2003.

  Saskatchewan land price recovery has lagged behind that of the rest of Canada partly due to the drought.

Chart B5.7

Farmland Value in Saskatchewan and Western Prairie Wheat Prices , 1993-2004



Source: Farm Credit Canada, Canadian Wheat Board and AAFC calculations.

Producers purchase a signficant proportion of their inputs through co-operatives

- **Market share for co-operative sales of farm petroleum has risen since 1986** primarily due to expanded operations in western Canada.

  A significant decline in co-operatives' market share is observed in fertilizer and chemical sales since 2000. The main contributing factor was the demutualization of Agricore Co-operative in 2001, which previously had sold a significant quantity of fertilizer and chemicals.

Chart B5.8
Market Shares of Co-operatives in Farm Supplies, 1986-2003

	1986	1991	1996	2001	2003
	% of Total Farm Expenditures				
Fertilizer & chemicals	31	36	35	41	21
Farm petroleum	22	29	27	32	43
Seed	23	17	17	8	6
Feed	26	25	17	15	14

Source: Co-operatives Secretariat and Statistics Canada.

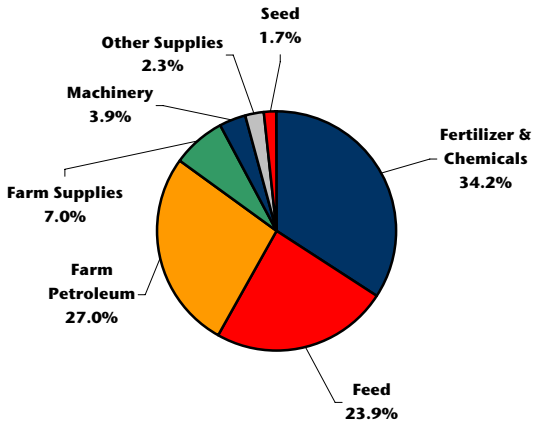
- **Total co-operative supply sales in 2003 were $5.2 billion.**

  A prolonged drought period in western Canada negatively affected the demand for farm supplies in 2003.

  Co-operatives sell a wide range of supplies from fertilizer and chemicals to feed, farm machinery, farm supplies (such as water bowls and wheelbarrows) and non-farm supplies (such as home garden seeds and clothing).

  Co-operatives of farm supplies are businesses owned by farmers which strive to provide high quality and affordable farm supplies for farmers. The surplus generated by these co-operatives is returned to farmer members thereby contributing to farm income.

Chart B5.9
Co-operative Supply Sales, 2003



Source: Cooperatives Secretariat.

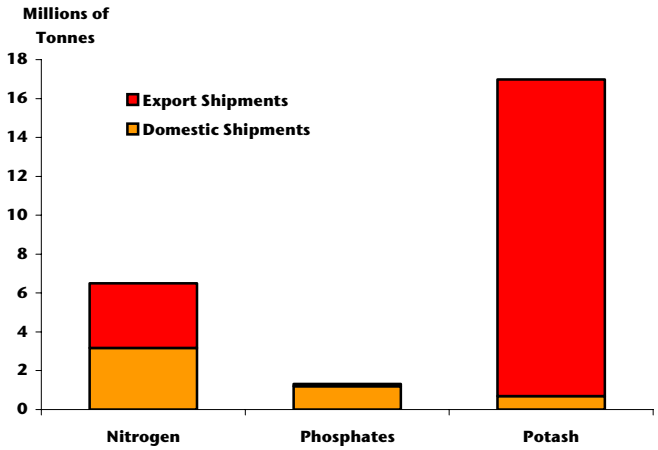
Canada is a major world producer of fertilizers

- **Canada produces about 30% of the world's potash and holds most of the world's reserves.**

  Fertilizer production is primarily located in Alberta (nitrogen and phosphate) and Saskatchewan (potash and nitrogen). Canada's only phosphate mine is located in northern Ontario but the phosphate is processed in Alberta.

  Canada exports about 95% of its potash production and about half of its nitrogen products.

Chart B5.10
Fertilizer Shipments and Exports, 2004-05



Source: Canadian Fertilzer Institute.

SECTION C

Government and the Agriculture and Agri-Food System

Government support to the agriculture and agri-food sector in 2005/06, has increased from the previous year's level

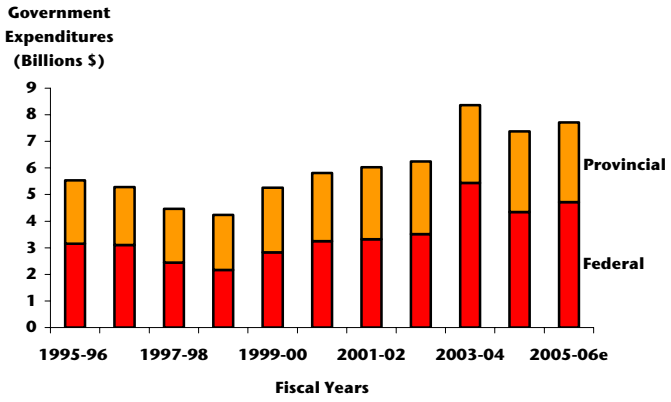
- **Federal and provincial governments provided a near record level of support to the agriculture and agri-food sector in 2005-06.**

  Total government expenditures in support of the agriculture and agri-food sector are estimated at $7.7 billion for the 2005-06 fiscal year.

  Government expenditures are estimates of the money governments spend on the agriculture and agri-food sector in a given fiscal year. They include expenditures on programs, research and inspection, general administration and management, policy, information and statistical services.

  The government fiscal year runs from April 1st through to March 31st.

Chart C1.1
Government Expenditures in Support of the Agriculture and Agri-Food Sector, 1995-96 to 2005-06 Fiscal Years

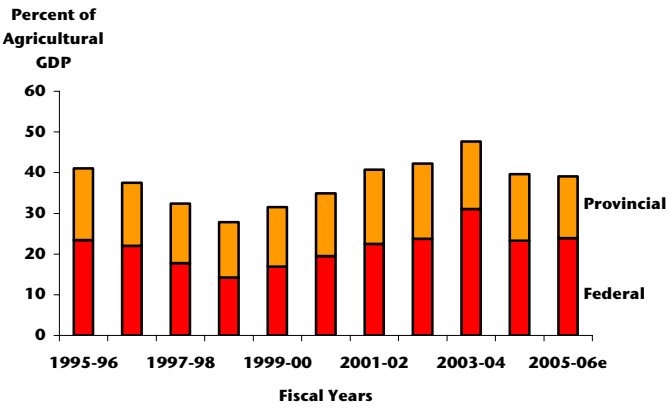


Source: AAFC.

Note: 2005-06 figures are estimates.

- In the 2005-06 fiscal year, total government expenditures in support of the agriculture and agri-food sector was estimated at 39.1% of total agricultural GDP.

Chart C1.2
Government Expenditures in Support of the Agriculture and Agri-Food Sector, 1995-96 to 2005-06 Fiscal Years



Source: AAFC.

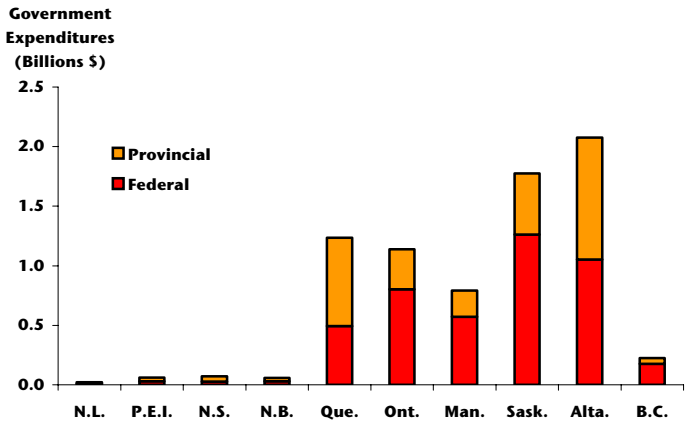
Note: 2005-06 figures are estimates.

Government support varies across provinces

- **In the 2005-06 fiscal year, total government expenditures were estimated to be higher than $1 billion for four provinces. These provinces are Alberta ($2.07B), Saskatchewan ($1.77B), Quebec ($1.23B) and Ontario ($1.13B).**

  The relative share of total government support to the sector provided by federal and provincial governments varies across provinces. Although the federal government accounts for the larger share of total support in most provinces, provincial governments provide a relatively large share of total support in the Atlantic provinces, Quebec and Alberta.

Chart C1.3
Government Expenditures in Support of the Agriculture and Agri-Food Sector by Province, 2005-06 Fiscal Year

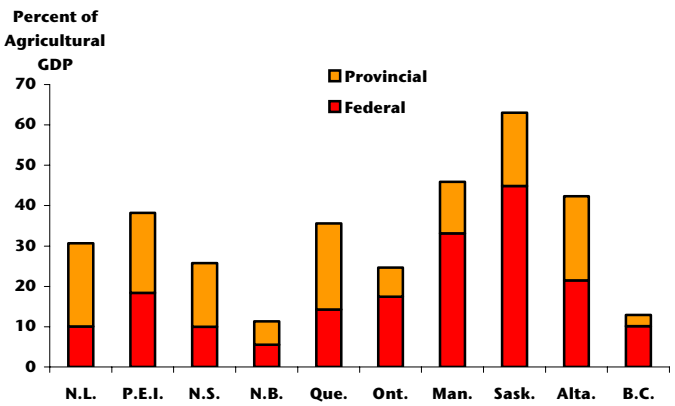


Source: AAFC.

Note: 2005-06 figures are estimates.

- **Government support, when expressed as a share of agricultural GDP, also shows variability between provinces.** On this basis, the agricultural sector in Saskatchewan, Manitoba, Alberta and Prince Edward Island, received the most government support.

Chart C1.4
Government Expenditures in Support of the Agriculture and Agri-Food Sector by Province, 2005-06 Fiscal Year



Source: AAFC.

Note: 2005-06 figures are estimates.

Program payments make up the largest portion of government support

- **In the fiscal year 2005-06, federal program payments accounted for 47% of total federal expenditures in support of the agriculture and agri-food sector, while provincial program payments accounted for 48%.**

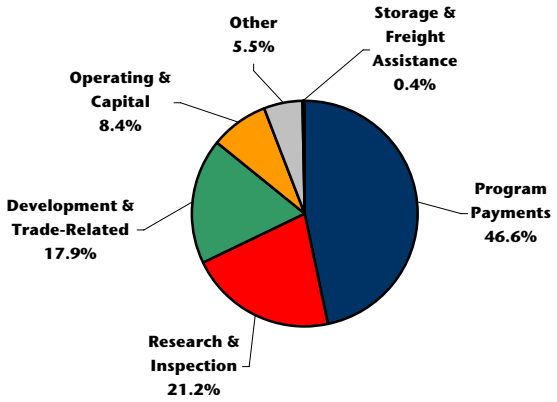
  On the federal side, research and inspection is the second largest public expenditure category accounting for 21%; at the provincial level, it is 7%. Other is the second most important category at the provincial level. This category includes expenditures related to extension, education and tax expenditures, and accounts for 23% of provincial expenditures.

  Development and trade related expenditures is the second largest category of public expenditure at the provincial level.

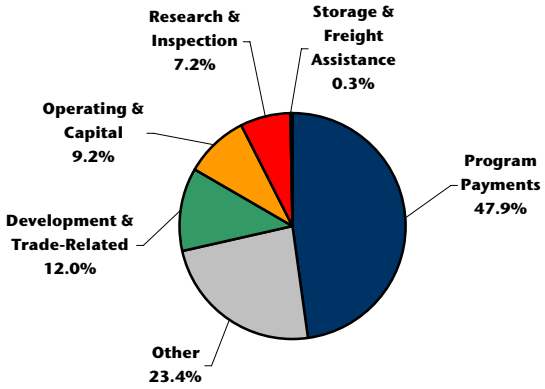
Chart C1.5

Government Expenditures in Support of the Agriculture and Agri-Food Sector by Major Category, 2005-06 Fiscal Year

Federal



Provincial



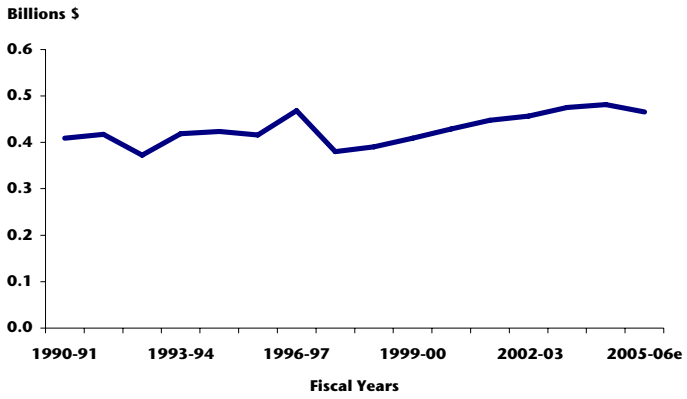
Source: AAFC.

Note: 2005-06 figures are estimates.

As a share of value of production, Canadian public research expenditures on agriculture are declining but remain higher than the U.S.

- **Total federal and provincial research expenditures on the agriculture and agri-food sector have been relatively stable over the last decade,** fluctuating between $400 and $500 million annually.

Chart C1.6
Government Research Expenditures on Agriculture, 1990-91 to 2005-06 Fiscal Years



Source: AAFC.

Note: 2005-06 figures are estimates.

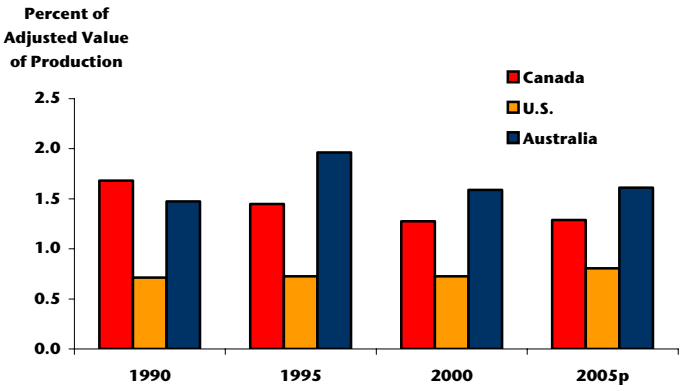
- **Public sector investment in agri-food R&D in Canada has fallen over time when measured as a share of agricultural production**.

  In contrast, public R&D support to the agri-food sector in the U.S. as a share of agricultural production have remained relatively stable over the 1990-2005 period.

  However, in 2005, Canada's share of 1.3% remains higher than the U.S.'s share of 0.8% and slightly below Australia's share of 1.6%.

  In Canada, a large part of publicly funded research is carried out by the federal government, although the government does give grants and contributions to private industry to do research. In the U.S., the majority of publicly funded research is carried out by private firms and land grant universities.

Chart C1.7
Public R&D Support to Agri-Food Sector as a Share of Adjusted Value of Production, 1990-2005



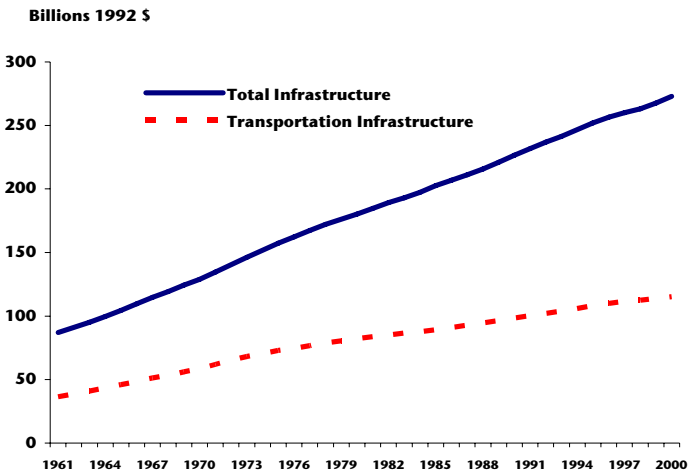
Source: OECD PSE database.

Note: 2005 figures are preliminary.

Public infrastructure investment has contributed positively to productivity growth in food processing

- **The total stock of public infrastructure* has increased in every year since 1961, but growth in this stock has slowed over time.** The annual growth rate in this stock was around 4.6% in the 1960's; since the 1980's, the growth rate has been close to 2% per year. Growth in the stock of transportation infrastructure** has similarly declined, reflecting a slow down in the expansion of road and highway systems.

Chart C1.8
Public Infrastructure in Canada, 1961-2000

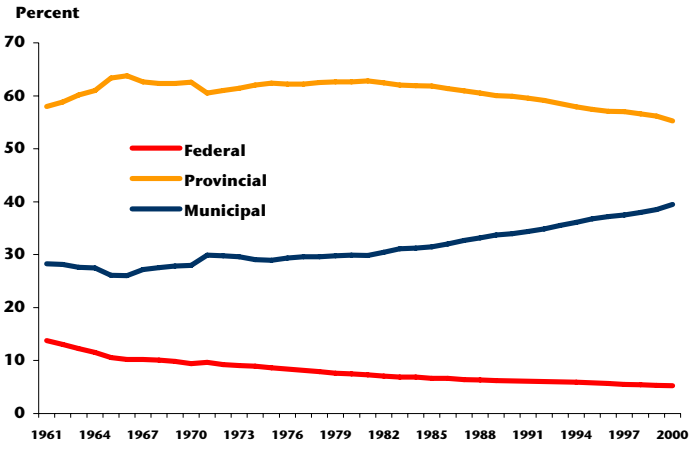


Source: Statistics Canada, National Wealth and Capital Stock Section.

- **Research shows that public infrastructure investment has had a significant positive influence on productivity growth in food processing,** reducing the cost of production and output distribution[9]. For example, the re-paving of a highway could allow processors to use their own transportation capital more effectively and could lower the cost of delivering output to consumers.

  While most transportation infrastructure is owned by provincial governments, municipal governments have been assuming an increasingly important role in the provision and improvement of local roads and highways. The federal government's share of the national stock of transportation infrastructure was only 12% in the 1960's; this share fell to only 6% in the1990's.

Chart C1.9
Transportation Infrastructure Share of each Level of Government, 1961-2000



Source: AAFC calculations.

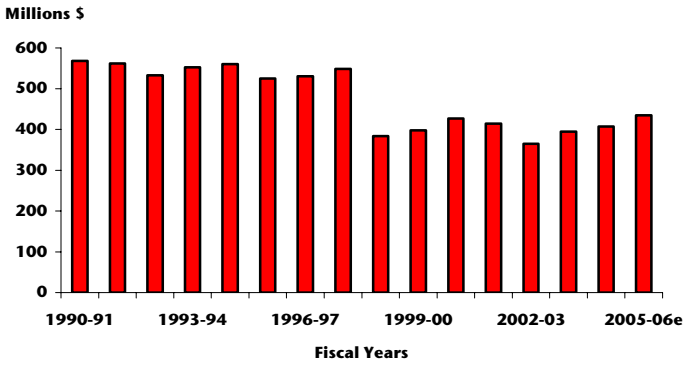
*Public infrastructure is the quantity of physical capital owned by the municipal, provincial and federal governments of Canada. This includes buildings such as schools, libraries and post offices, engineering structures such as roads and sewers, and machinery such as snow removal vehicles and ambulances.
**Transportation infrastructure is a subset of engineering structures, and includes highways, roads, streets, runways, rail track, bridges, and tunnels.

Governments also use favourable tax measures to support the agriculture and agri-food sector

- **Foregone tax revenue is an important source of government support to the agriculture and agri-food sector.**

  In fiscal year 2005-06, tax exemptions and rebates associated with primary agriculture production were valued at around $434 million. This does not include sales and income tax rebates.

Chart C1.10
Support to Farm Producers through Tax Rebates and Exemptions, 1990-91 to 2005-06 Fiscal Years

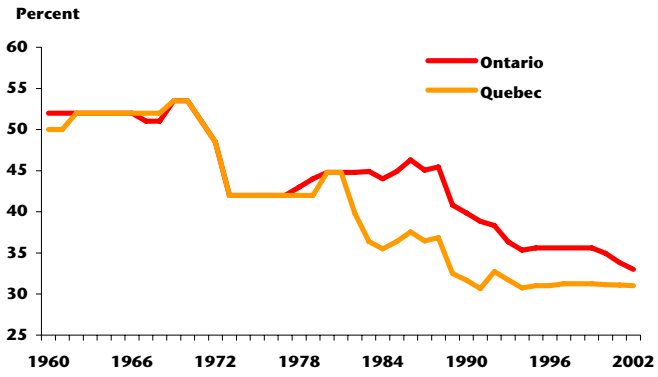


Source: AAFC.

Note: Includes fuel tax rebates, fuel tax exemptions and property tax rebates, excludes sales and income tax rebates. 2005-06 figures are estimates.

- The combined federal and provincial corporate income tax rate for manufacturing and processing* has fallen significantly in all provinces since the early 1960's. In Ontario and Quebec the rates were around 52%; by 2002, the rates in both provinces were between 33% and 31% respectively. Note that these rates apply to corporations primarily involved in food and/or beverage processing; they do not apply to incorporated farms.

Chart C1.11
Combined Federal/Provincial Corporate Income Tax Rate for Manufacturers and Processors, Ontario and Quebec: 1960-2002



Source: Cahill(2005).

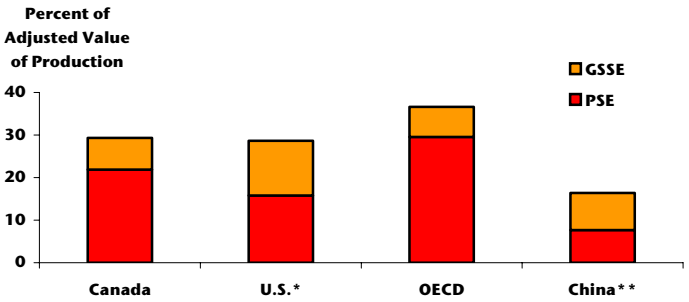
*This is (basic federal rate- federal tax abatement rate)[1+(federal surcharge rate)] -(federal manufacturer/processor credit rate)+(provincial rate for manufacturers/processors).

Support to Canadian producers in percentage PSE is comparable to the U.S. but less distortive

- **Over time, Canadian agricultural producers have become less reliant on government support.**

  Government support to the agricultural sector was about 30% of agricultural production on average for the 2003-2005 period compared to 29% for the U.S. and 37% for the OECD.

Chart C1.12
Support to Agricultural Sector, 2003-2005

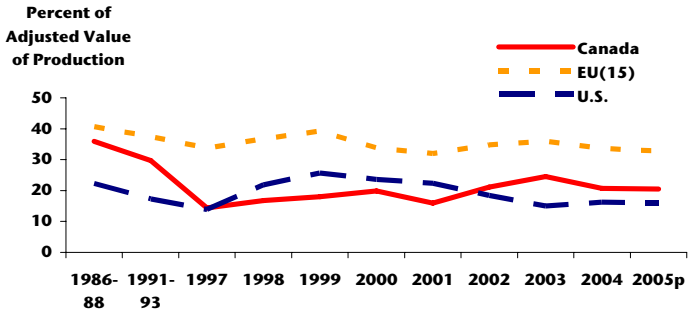


Source: OECD PSE database.
Note: * Includes foodstamps.
** 2002-2003 average.

However, over the last four years, Canadian support to producers has been higher than the U.S. mainly because of the federal and provincial governments' responses to exceptional circumstances which resulted in persistent low farm income.

In 2005, the PSE for Canada was 21% of adjusted value of production compared to 33% for the EU(15) and 16% for the U.S.

Chart C1.13
Producer Support Estimate, 1986-2005



Source: OECD PSE database.
Note: 2005 figures are preliminary.

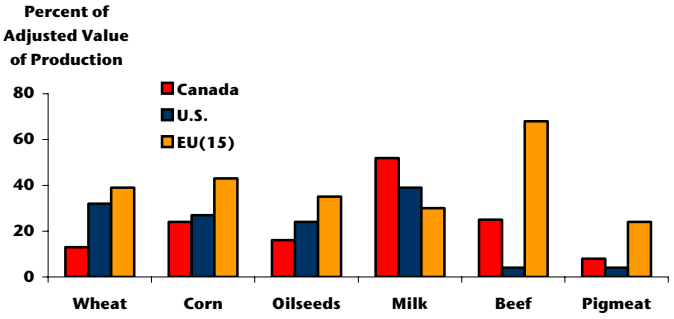
- **The support, measured by percentage PSE, varies across commodities within a country and varies across countries for a given commodity.**

  PSE for beef in Canada was relatively higher in 2004 because of the government's response to the BSE crisis, however, it is still much lower than that of the EU(15).

  While PSE for red meat is higher in Canada compared to the U.S., PSE for grains and oilseeds in Canada is lower than in the U.S.

  With the exception of the supply managed system, Canadian programs are based on a "whole farm" approach which does not mask market signals.

Chart C1.14
Producer Support Estimate by Commodity, 2004



Source: OECD and AAFC estimates.
Note: 2004 figures are estimates.

Endnotes

End Notes

1. Unless otherwise noted, component stages of the agriculture and agri-food system are defined according to the North American Industrial Classification System (NAICS). The glossary contains a detailed listing of included industries for each component stage of the system.

2. Maple Leaf Foods Inc. and/or Canada Bread Company, Limited, 2002, "Food Safety, What We Do: Our Policies and Practices."

3. Wendy's International Inc., 2003, Corporate Initiatives.

4. McCain Foods Limited, McCain Worldwide.

5. Macdonald & Associates Limited
http://www.canadavc.com

6. Ipsos Reid, New Thoughts for Food: Consumer Trends, A Presentation to the Agriculture and Agri-Food Council, November 23, 2003, presented by Joanne Karman, Senior Vice President and Managing Director, Agri-Food.

7. CREST/NPD Information Group; NPD Group Eating Patterns in Canada Report, October 2004 release; and CRFA's Foodservice Facts.

8. Canadian Restaurant and Foodservices Association, "Foodservice profit margin inches up to 3.6%", March 7, 2006 release.
http://www/crfa.ca/research/2006/foodservice_profit_margin_inches_up.asp.

9. Harchaoui and Tarkhani, "Public capital and its contribution to the productivity performance of the Canadian business sector", Economic analysis (EA) research paper series, Catalogue no. 11FOO27MIE-No. 017, Statistics Canada.

Glossary

Canadian Agriculture and Agri-Food System
The Canadian Agriculture and Agri-Food System is a value chain of industries focussed on producing agricultural and food products. It includes agricultural input and service suppliers, primary agriculture, food, beverage and tobacco processors, food retailers/wholesalers, and foodservice establishments.

Agricultural Input & Service Suppliers
Agricultural Input and Service Suppliers are composed of the following industries as defined by the North American Industrial Classification System (NAICS):

at the 4 digit level
- 1151 Support Activities for Crop Production
- 1152 Support Activities for Animal Production
- 3253 Pesticide, Fertilizer and Other Agricultural Chemical Manufacturing
- 4171 Farm, Lawn and Garden Machinery and Equipment Wholesaler-Distributors
- 4183 Agricultural Supplies Wholesaler-Distributors

at the 5 digit level
- 33311 Agricultural Implement Manufacturing

Primary Agriculture
Primary agriculture is composed of the following industries as defined by NAICS:

at the 4 digit level
- 1111 Grain and Oilseed Farming
- 1112 Vegetable and Melon Farming
- 1113 Fruit and Tree Nut Farming
- 1114 Greenhouse, Nursery and Floriculture Production
- 1119 Other Crop Farming
- 1121 Cattle Ranching and Farming
- 1122 Hog and Pig Farming
- 1123 Poultry and Egg Production
- 1124 Sheep and Goat Farming
- 1125 Animal Aquaculture
- 1129 Other Animal Production

Food, Beverage and Tobacco (FBT) Processors
FBT processors are composed of the following industries as defined by NAICS:

at the 3 digit level
- 311 Food Manufacturing
- 312 Beverage and Tobacco Product Manufacturing

Agriculture and Agri-Food Sector
The agriculture and agri-food sector is composed of all industries whose primary role is to produce food and agricultural products. It encompasses both primary agriculture and FBT processors.

Food Retailers/Wholesalers
Food retailers/wholesalers are composed of the following industries as defined by NAICS:

at the 3 digit level
- 411 Farm Product Wholesaler-Distributors
- 413 Food, Beverage and Tobacco Wholesaler-Distributors
- 445 Food and Beverage Stores

at the 5 digit level
- 41911 Farm Product Agents and Brokers
- 41913 Food, Beverage and Tobacco Agents and Brokers
- 44422 Nursery Stores and Garden Centres
- 49312 Refrigerated Warehousing and Storage
- 49313 Farm Product Warehousing and Storage

Foodservice
Foodservice is composed of the following industries as defined by NAICS:

at the 3 digit level
- 722 Food Services and Drinking Places

at the 4 digit level
- 4542 Vending Machine Operators

Food Distribution Sector
The food distribution sector is composed of all industries whose primary role is to directly provide and service the final consumer with food and agricultural products. It encompasses food retailers/wholesalers and foodservice establishments.

Commercial Foodservice
Commercial foodservice includes full service restaurants, limited service restaurants, social and contract caterers and taverns.

Full service restaurants include licensed and unlicensed fine dining restaurants, family restaurants and restaurant bars.

Limited service restaurants include cafeterias, fast-food restaurants, food courts, and take-out and delivery establishments.

Social caterers provide foodservice for special events.

Contract caterers supply foodservice to airlines, railways, institutions and at recreational facilities.

Taverns are establishments primarily engaged in serving alcoholic beverages for immediate consumption, such as pubs, cocktail lounges and nightclubs.

Food-Only Processors
Food-only processors refer to manufacturers of food where food is defined in the narrowest sense (i.e. excludes beverage and tobacco products).

Non-Food Processors
Non-food processors encompasses all industrial use of farm products other than food or animal feed consumption. It includes bio-products manufacturers as well as the more traditional non-food industries such as leather tanneries and textile mills.

Other and Non Commercial Foodservice
Other foodservice includes accommodation, institutional retail and other foodservice.

Accommodation foodservice is foodservice offered by hotels, motels and resorts.

Institutional foodservice is foodservice in hospitals, residential care facilities, schools, prisons, **factories and offices.**

Retail foodservice is foodservice operated by department stores and convenience stores.

Other foodservice includes vending machines, movie theatres, stadiums and other seasonal or entertainment operations.

Occupations

Occupations in Primary Agriculture

Farmers and Farm Managers
These manage the operations and functions of a farm. They are responsible for growing crops, raising and breeding livestock and marketing farm products.

Farm Supervisors and Specialized Livestock Workers
These supervise the work of general farm workers and harvesting labourers, carry out livestock feeding, health and breeding programs and perform general farm duties.

General Farm Workers
These plant, cultivate and harvest crops, raise livestock, maintain and repair farm equipment and buildings and operate farm machinery.

Harvesting Labourers
These assist other farm workers to harvest, sort and pack crops.

Nursery and Greenhouse Operators and Managers
These plan, organize, direct and control the activities of nursery and greenhouse staff who grow and market trees, shrubs, flowers and plants.

Nursery and Greenhouse Workers
These plant, cultivate and harvest trees, shrubs, flowers and plants, and serve nursery and greenhouse customers.

Occupations in Food Processing

Supervisors, Food, Beverage and Tobacco Processing
These supervise and co-ordinate the activities of workers who operate processing machines, and package or grade food, beverage and tobacco products.

Machine Operators and Related Workers in Food, Beverage and Tobacco Processing
These include process control and machine operators; industrial butchers and meat cutters, poultry preparers and related workers; fish plant workers; tobacco processing machine operators; and testers and graders.

Labourers in Food, Beverage and Tobacco Processing
These perform material handling, clean-up, packaging and other elemental activities related to food, beverage and tobacco processing and labour in fish processing.

Occupations in Food Distribution

Grain Elevator Operators
These purchase grain from farmers, determine the grade, quality and weight of grain delivered, and maintain records for farmers and companies.

Retail Trade Supervisors
These supervise and co-ordinate the activities of cashiers, grocery clerks and store shelf stockers.

Bakers and Butchers
Bakers prepare bread, rolls, muffins, pies, pastries, cakes and cookies and are employed in bakeries, supermarkets, catering companies, hotels, restaurants, hospitals and other institutions. Butchers and meat cutters prepare standard cuts of meat, poultry, fish and shellfish for sale in retail or wholesale establishments.

Occupations (cont'd)

Cashiers
These operate cash registers, optical price scanners, computers or other equipment to record and accept payment. They are employed in stores and restaurants.

Restaurant and Food Service Managers
These plan, organize, direct, control and evaluate the operations of restaurants, bars, cafeterias and other food and beverage services.

Food Service Supervisors
These supervise, direct and co-ordinate the activities of workers who prepare, portion and serve food. They are employed by hospitals and other health care establishments and by cafeterias, catering companies and other food service establishments.

Occupations in Food and Beverage Service
These include maîtres d'hôtel, hosts/hostesses, bartenders and food and beverage servers.

Food Counter Attendants, Kitchen Helpers and Related Occupations
These include counter attendants, food preparers, kitchen helpers, food service helpers and dishwashers.

For more information about the National Occupation Classification (NOC) please see http://www.statcan.ca/english/Subjects/Standard/soc/2001/n0cs01-menu.htm

Trade Categories

Agriculture and Agri-Food Exports
Agriculture and agri-food exports include the export of agriculture commodities, food (excluding fish and fish products), non-alcoholic beverages (including bottled water), alcoholic beverages, tobacco products, floriculture and nursery.

Agriculture and Agri-Food Imports
Agriculture and agri-food imports include the import of agriculture commodities, food (excluding fish and fish products), non-alcoholic beverages (including bottled water), alcoholic beverages, tobacco products and floriculture and nursery.

Intra-Industry Trade
Intra-industry trade is trade between two countries of the same commodity/product.

Intra-Firm Trade
Intra-firm trade are transactions between different parts of multinational firms located in different countries. It also encompasses the assigning of different product mandates to different production facilities by headquarters.

Trade Classification
Trade statistics for the agriculture and agri-food system are categorized according to the BICO classification system which separates products into three different groupings: bulk, intermediate, and consumer oriented.

- **Bulk (B)**
  Products that have received little or no processing, such as, wheat, feed grains and oilseeds.
- **Intermediate (I)**
  Products that have received some processing, but generally are not yet ready for final consumption. Examples include wheat flour, vegetable oils and slaughter animals.
- **Consumer Oriented (CO)**
  Products that require little or no additional processing and are basically ready for human consumption. Examples include dairy products, eggs, beef, fresh fruits, and floriculture, as well as canned soups,frozen meals, baby foods, etc.

Value-Added Trade
Value-added exports/imports include exports/imports of all intermediate and consumer-oriented goods.

Government Support Categories

Government Expenditures
Government spending (at all levels) on agriculture and food processing in a year, both direct and indirect, to individuals, agencies or associations.

Major Categories of Expenditures

Development, Trade and Environment Related Program Expenditures
Include administration and capital expenditures incurred by the government to work on regional development, marketing and trade, and environmental activities as well as grants and contributions issued by the government for work on these activities.

Operating and Capital Expenditures
Include government expenditures on general administration and management, and on policy, information and statistical services.

Other Expenditures
Include government expenditures on food aid and international assistance, extension, and education as well as social program payments.

Program Payment Expenditures
Include payments for income support and stabilization programs, ad hoc and cost reduction programs, crop insurance programs and financing assistance programs.

Research and Inspection Expenditures
Include administration and capital expenditures incurred by the government to perform research and inspection activities, as well as grants and contributions issued by the government for work on these activities.

Storage and Freight Assistance Expenditures
Program payments for storage and freight.

Producer Support Estimate (PSE)
A yearly measure of policy support to farm producers. It is the sum of market price support and budgetary payments to producers, expressed as a percentage of the Adjusted Value of Production.

Adjusted Value of Production (AVOP)
The value of production plus the direct transfers received by producers in the current year.

Public Infrastructure
The quantity of physical capital owned by the municipal, provincial and federal governments of Canada. This includes buildings such as schools, libraries and post offices, engineering structures, and machinery such as snow removal vehicles and ambulances.

Transportation Infrastructure
This is a subset of engineering structures, and includes highways, roads, streets, runways, rail track, bridges, and tunnels.

Census Farm
An agricultural operation with Gross Farm Receipts > $2,499 that produces at least one of the following products intended for sale: crops (field crops, tree fruits or nuts, berries or grapes, vegetables, seed); livestock (cattle, pigs, sheep, horses, exotic birds, etc.), animal products (milk or cream, eggs, wool, fur, meat), or other agricultural products (greenhouse or nursery products, Christmas trees, mushrooms, sod, honey, maple syrup products).

Concentration Ratio (CR4)
The concentration ratio is a measure of an industry's concentration level and expresses sales of a set number of the top firms in the industry as a percentage of total industry sales. CR4 is the acronym for the concentration ratio of the top four firms in the industry.

Debt to Equity Ratio
The debt to equity ratio is calculated as borrowings plus loans and accounts with affiliates all divided by total equity.

Farm Market Receipts
Farm market receipts refers to cash income from the sale of agricultural commodities, but excludes direct program payments to producers.

Farm Net Worth
Farm net worth is measured as the total assets of the farm evaluated at current market value less total liabilities.

Foreign Direct Investment (FDI)
Foreign direct investment refers to investment by non-residents in an enterprise where the non-residents own 10 percent or more of the ordinary shares or voting power in incorporated enterprises or the equivalent in unincorporated enterprises.

Gross Domestic Product (GDP)
The gross domestic product for a country is the total unduplicated value of the goods and services produced in that country during a given period.

Gross Farm Receipts
Gross farm receipts include cash income from the sale of agricultural commodities and direct program payments. They are compiled from census forms sent to all farms every five years.

Gross Margin Ratios
Gross margin ratios are calculated as the ratio of gross margin earned by a farm relative to its market revenue.

Intramural R&D Expenditures
Intramural R&D expenditures are all expenditures on research and development that are made by a particular organization in a given time frame and includes work financed by others.

Labour Productivity
Labour productivity is a measure of an industry's output per hour of labour worked.

Multifactor Productivity
Multifactor productivity measures the efficiency in use of all inputs. Its growth is calculated as the rate of growth of output less the rate of growth of all inputs.

Profit Margin Ratio
The profit margin ratio is calculated as operating profits divided by operating revenues, multiplied by 100.

Rate of Return on Long-Term Capital
The rate of return on long-term capital is calculated as operating income (without deducting either taxes or interest paid) divided by long-term capital where long-term capital is taken to be the sum of shareholders' equity and long-term debt.

Realized Net Farm Income
Realized net farm income is calculated as realized net market Income plus government program payments.

Realized Net Market Income
Realized net market income is calculated as farm market receipts plus income in kind less operating expenses and depreciation.

Return on Equity Ratio
The return on equity ratio is calculated as after-tax profit multiplied by 4, divided by total equity, multiplied by 100.

Value-added Production
Value-added production refers to products that have undergone some processing.

Non-Financial Industries

Non-Financial industries are composed of the following industries as defined by the North American Industry Classification System (NAICS)

11	Agriculture, Forestry, Fishing and Hunting
211	Oil and Gas Extraction
213	Support Activities for Mining
22	Utilities
23	Construction
31-33	Manufacturing
41	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information and Cultural Industries
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Healthcare and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
811	Repair and Maintenance
812	Personal and Laundry Service

Data Sources

Data Sources

Agriculture and Agri-Food Canada (AAFC) www.agr.gc.ca

Databases

- Net Income Stabilization Account (NISA) Database.

Publications and Papers

- Cahill, S.A., Corporate Income Tax Rate Database: Canada and the Provinces, 1960-2002, unpublished paper, Research and Analysis Directorate, Strategic Policy Branch, Agriculture and Agri-Food Canada, January, 2005.
- Co-operatives Secretariat, Co-operatives Secretariat Publications, General Publications: CO-OPERATIVES IN CANADA (2001 Data), CO-OPERATIVES IN CANADA (2000 Data) and Profile of Canadian Agricultural Cooperatives.

Economic and Market Information.

- Farm Income, "Financial Conditions and Government Assistance", Data Book, various issues.
- "Characteristics of Canada's Diverse Farm Sector".
- Farm Financial Survey (FFS).
- Farm (Family) Taxfiler Data.

Canadian Beef Grading Agency www.telusplanet.net/public/cbga

Canadian Fertilizer Institute www.cfi.ca

- Fertilizer Pricing in Canada.

Canadian Grocer Magazine www.bizlink.com/cangrocer.htm

- Jan/Feb 2001, National Market Survey, Canadian Food Store Sales, 2000.
- Feb. 2003.
- Executive Report 2002.

Canadian Organic Growers www.cog.ca

- Eco-Farm and Garden Magazine, various issues.

Data Sources (cont'd)

Canadian Restaurant and Foodservice Association www.crfa.ca

- Foodservice Facts.
- Quarterly InfoStats.

Canadian Tax Foundation www.ctf.ca

Canadian Wheat Board www.cwb.ca

Conference Board of Canada www.conferenceboard.ca

- Special Data Tabulations for AAFC.

Deloitte www.deloitte.com

Dobson Consulting. 1999. "Buyer Power and Its Impact on Competition in the Food Retail Distribution Sector of the European Union." United Kingdom.

Farm Credit Canada (FCC) www.fcc-fac.ca

- Farmland Values Report.

Food Engineering Magazine www.foodengineeringmag.com

Food and Agriculture Organization of the United Nations (FAO)

- FAOSTAT, Agriculture and Food Trade. http://faostat.fao.org

Global Trade Information Services, Inc. www.gtis.com

- World Trade Atlas.

Globe and Mail www.theglobeandmail.com

GlobeScan Inc. www.globescan.com

- Food Issues Monitor 2003, Food Issues Monitor International Report 2003.
- Food Issues Monitor 2003, Canada Tables (May 14 to May 25, 2003).

Industry Canada www.strategis.ic.gc.ca

- Strategis Trade Data Online.

Macdonald & Associates Limited www.canadavc.com

McCain Foods Limited www.mccain.com

Natural Resource Canada www.nrcan-rncan.gc.ca

Ridgetown College, University of Guelph www.ridgetownc.on.ca

Organisation for Economic Co-operation and Development (OECD) www.oecd.org

- Agricultural Policies in OECD Countries, Monitoring and Evaluation.
- SourceOECD National Accounts Database.

Statistics Canada www.statcan.ca

Databases

- CANSIM.
- Canadian International Merchandise Trade Database.
- Whole Farm Database

Publications and Papers

- 2001 Census of Agriculture, Catalogue No. 95F0301XIE, 95F0303XIE and 95F0355 XIE.
- Agriculture and Rural Working Paper Series, No. 7. "Measuring industry concentration in Canada's food processing sectors" 1990-2001. Catalogue no. 21-601-MIE -No. 070.
- Beaulieu, M. 2002. "Financial Characteristics of Acquired Firms in the Canadian Food Industry." Statistics Canada. Agriculture and Rural Working Paper Series. Working Paper No. 57.
- Canadian Economic Observer, December 2003.
- The Daily, Monday December 20, 2004. Productivity growth by industry.
- Estimates of Research and Development Personnel in Canada, 1979 to 2000, Catalogue No. 88-F0006XIE2003011.
- Farm Financial Survey, Catalogue No. 21-F0008-XIB.
- Federal government expenditures and personnel in the natural and social sciences, 1993-1994 to 2002-2003, Catalogue No. 88F006XIB2001008.
- Food Statistics Vol. 3 No.1, Catalogue No. 21-020XIE.
- Hategekimana B. and M. Beaulieu. 2002. "Genetically Modified Crops - Steady Growth in Ontario and Quebec." Statistics Canada, Agriculture Division, Vista, Catalogue No. 21-004-XIE, December 2002.
- Historical Overview of Canadian Agriculture, Catalogue No. 93-358-XPB.
- Science Statistics Vol. 28 No. 9, Catalogue No. 88-001-XIE.
- Smith, D. and M. Trant. 2003. "Performance in the Food Retailing Sector of the Agri-Food Chain." Research Paper, Catalogue No. 21-601-MIE – No. 056.

Special Data Request

- 2001 Census custom tabulation, ref: DO0413.
- Agriculture Division, Census of Agriculture 2001 .
- Balance of Payments Division.

Data Sources (cont'd)

- Bioproduct Development Survey.
- Functional Foods and Nutraceuticals Survey.
- Income and Expenditure Accounts Division.
- Income Statistics Division, Survey of Financial Security.
- Industrial Organization and Finance Division, Quarterly Financial Statistics for Enterprises.
- Innovation in the Food Processing Industry Survey, 2004.
- Input Output Division, Input Output Tables.
- Investment and Capital Stock Division, National Wealth and Capital Stock Section.
- Labour Statistics Division, Labour Force Survey (LFS).
- Manufacturing, Construction and Energy Division, Annual Survey of Manufactures.
- Science Innovation and Electronic Information Division, Survey of Innovation.

Supermarket News www.supermarketnews.com

- SN's Top 75 and Top 25.

U.S. Census Bureau www.census.gov

U.S. Department of Commerce www.bea.gov

- Bureau of Economic Analysis, Industry Economic Accounts.

United States Department of Agriculture (USDA) www.fsis.usda.gov

- Economic Research Service, Special Data Request.