# An Overview of the Canadian Agriculture and Agri-Food System

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Canada

# AN OVERVIEW OF THE CANADIAN AGRICULTURE AND AGRI-FOOD SYSTEM

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# Foreword

This 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 reviews each segment of the agri-food chain, going upstream from consumers to food distribution, food 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 the provincial economies,** providing one in eight jobs in Canada and accounting for 8.2% of total Gross Domestic Product (GDP) in 2002.

- **While primary agriculture is at the heart of the agriculture and agri-food system, the system is much more than just agricultural production.** It encompasses processing and distribution activities as well. Food processing (which includes beverage and tobacco processing) is the second largest contributor to manufacturing GDP and is the largest manufacturing employer. Food retail is the second largest consumer good expenditure category and foodservice the third largest consumer service expenditure category.

- **Changing demands of consumers, at home and abroad, 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 cost food in the world with food accounting for only a 10% share of household expenditures.

- **Each stage of the system is becoming more consolidated and larger in scale of operation.** The five largest food retailers in Canada account for about 60% of national grocery sales, up from 50% a decade ago. Large food processing establishments comprise only 5% of the total number of establishments but account for nearly half of the value of processed shipments. While only one-third of census farms have sales over $100,000, these farms account for nearly 90% of all farm production.

- **Individual stages in the system are posting significant gains in productivity.** Between 1997 and 2002 primary agriculture production had the fastest growing labour productivity in the economy with an annual average growth rate of 5.8%. The multifactor productivity growth rate was around 2%. Better management practices, industry restructuring and genetic and technological advances all contributed to this strong productivity growth. During this same time period, multifactor productivity growth in food-only processing was also 2%. This compares to a 1.5% rate for the general economy. Research is indicating that one of the biggest drivers of this productivity growth in food-only processing has been public infrastructure investment.

- **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 2002 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.

# Highlights

- **Export opportunities are critical for the growth of most agriculture industries.** Canada was the fourth largest exporter of agriculture and agri-food products in the world in 2002, after the U.S., the EU(15) and Brazil, with exports valued at $25.9 billion. Canada was also the fifth largest importer of agriculture and agri-food products with imports valued at $20.7 billion.
- **However, 2003 has been a difficult year for Canadian exports.** In the first seven months of the year, grain exports were down by one-third relative to a year earlier because of short supplies as a result of the Prairie drought. Starting in May, exports of ruminant live animals and their meat products were effectively shut down with the closure of the U.S. and other countries' borders in reaction to the single identified case of BSE. The partial reopening of the U.S. border in September to certain boneless meat cuts brought some relief. Cattle and beef export sales in 2003 were only one-third and two-thirds, respectively of their value in 2002. Dairy exports were down by 8% due to the WTO ruling on Commercial Milk Exports. In addition to all these extraordinary events, all agriculture and agri-food exports are being negatively affected by the appreciating dollar.
- **Because agriculture producers differ widely in terms of commodity specialization, scale of operation, motivation for farming and financial performance, the income impact of this year will vary by individual producers.** In general top performers tend to have better cost control which, along with government program funding, will help them weather the financial difficulties.
- **For the most part, Canadian primary agriculture producers have been less dependent on policy support, as measured by the Producer Support Estimate (PSE), than European and American producers.** However, in 2002, the PSE for Canada was 20% of adjusted value of production, a little above the U.S. PSE at 18%, but still well below the EU(15) PSE at 36%.

Section A

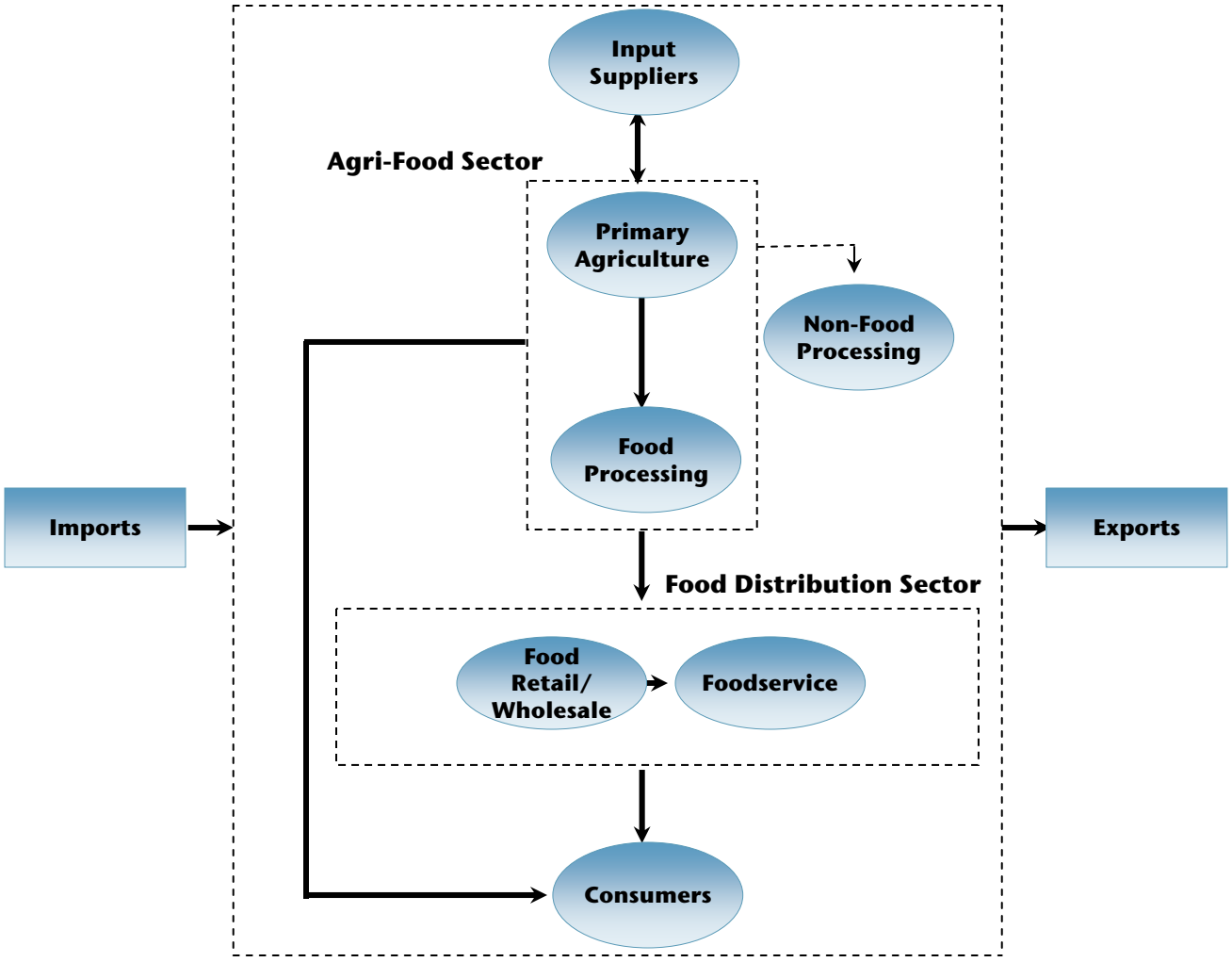
# The Agriculture and Agri-Food System and the Canadian Economy

# 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 (including beverages 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 processing, food retail/wholesale and foodservice[1]. The 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**



# ...that is evolving

- **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 in the agriculture and agri-food system. These initiatives generally fall under two categories: initiatives that provide closer vertical coordination between different stages of the supply chain and initiatives that involve horizontal coordination.

### Initiatives that Provide Closer Vertical Coordination

Firms are vertically integrating by investing in businesses in other stages of the supply chain. Maple Leaf Foods 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 work together to meet specific market objectives. Organic products are examples of value chains. Firms at each stage of the supply chain must ensure that the chemical-free integrity of the product is maintained.

Firms are using contractual arrangements to gain greater control over the quality of their inputs and products. Wendy's, 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]. Warbutons 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 Coordination

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, exchange of information and the establishment of a political voice. More recently, horizontal initiatives have been focusing on product quality improvement. At the producer level, for example, 19 commodity associations have launched or are in the process of developing national on-farm food safety and quality assurance initiatives under the Canadian On-Farm Food Safety Program (COFFS).

# GDP and Employment

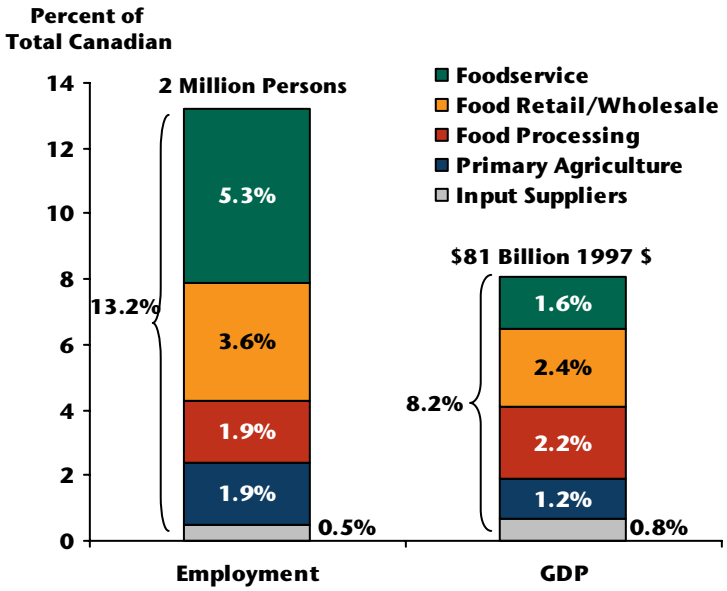
A1

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

- **The Canadian agriculture and agri-food system provides one in eight jobs.** The system also indirectly generates employment in transportation and other economic sectors.

  **In 2002, it accounted for 8.2% of total Canadian Gross Domestic Product (GDP).**

**Chart A1.1**
**The Agriculture and Agri-Food System's Contribution to Employment and GDP, 2002**

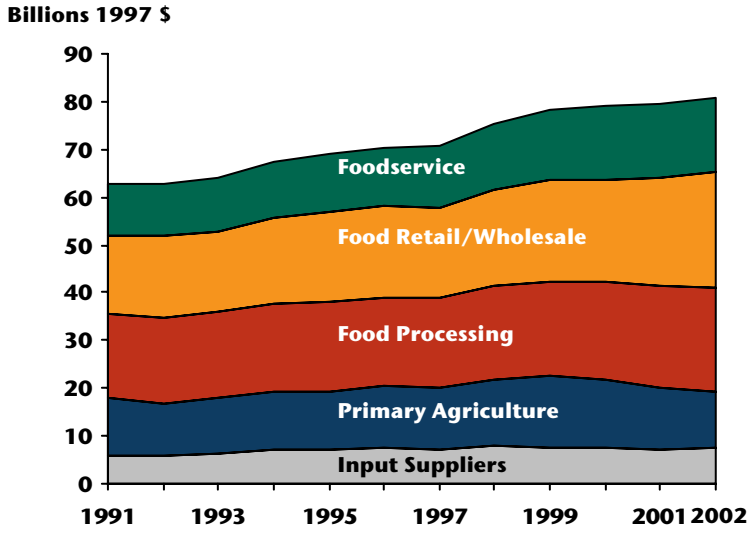



Source: Statistics Canada and AAFC calculations.

- **Value-added production is leading the growth of the system.** Food retail is the fastest growing component with an annual average growth rate of around 3% followed by input suppliers with an annual average growth rate of 2.4%.

  The overall system has been growing in size at around 2% per annum, which is slightly less than the growth rate of the overall economy.

**Chart A1.2**
**The Agriculture and Agri-Food System's Contribution to GDP, 1991-2002**



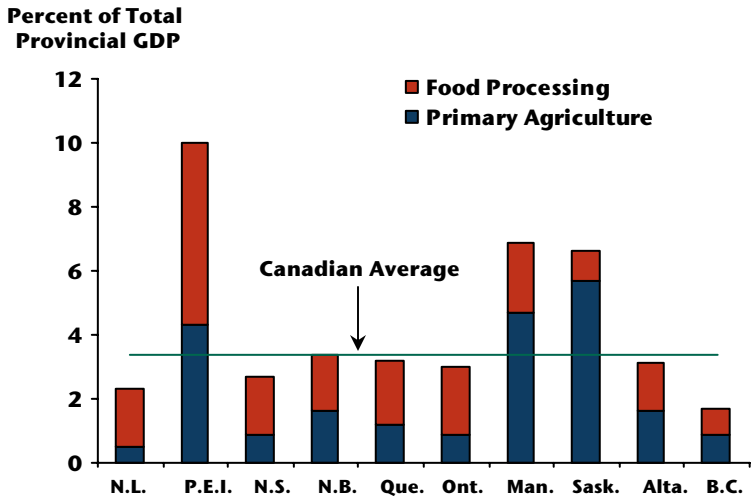

Source: Statistics Canada and AAFC calculations.

# It is also important to provincial economies

- **The size of the agri-food sector varies across Canada**, claiming a 10% share of total provincial GDP in Prince Edward Island and a 7% share in Saskatchewan and Manitoba in 2002.

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

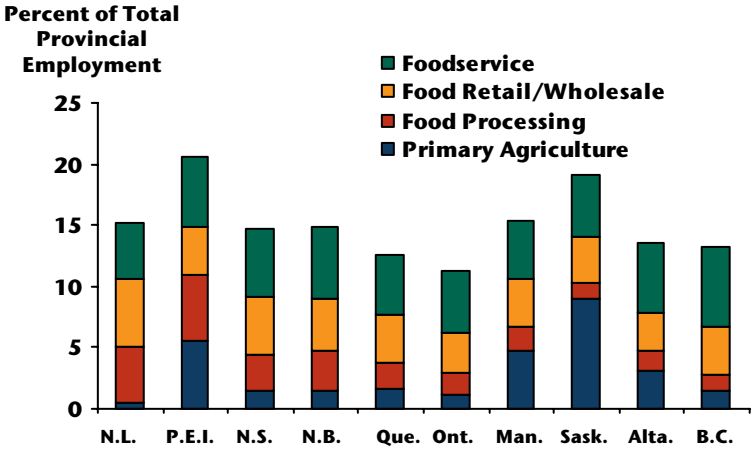
**Chart A1.3**
**The Agri-Food Sector's Contribution to Provincial GDP, 2002**




Source: Conference Board of Canada and Statistics Canada.

- Ontario and Quebec have the most people employed in the agriculture and agri-food system. However, the agriculture and agri-food system accounts for the largest shares of provincial employment in Prince Edward Island and Saskatchewan (around 20%).

**Chart A1.4**
**The Agriculture and Agri-Food System's Contribution to Provincial Employment, 2002**




Source: Statistics Canada and AAFC calculations.

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

# International Trade

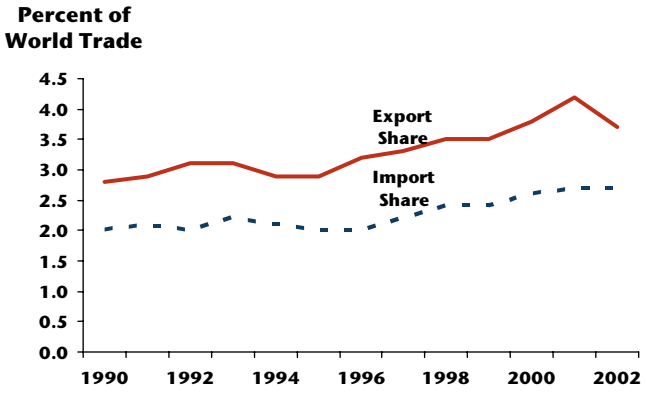
A2

# Canada is a major player in world agri-food trade

- **Canada's export and import shares of world agriculture and agri-food trade have been growing over the last decade.** However, in 2002 and 2003 Canada's export share has been negatively impacted by several factors that are discussed in this section.

  In 2002 Canada exported $25.9 billion in agriculture and agri-food products and imported $20.7 billion.

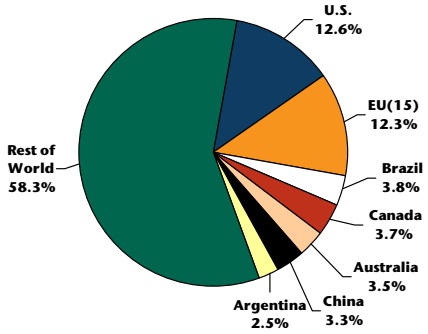
**Chart A2.1**
**Canada's Share of World Agriculture and Agri-Food Trade, 1990-2002**




Source: FAO.

- **Canada is the fourth largest agriculture and agri-food exporter,** after the U.S., the EU(15) and Brazil and is ahead of Australia, China and Argentina.

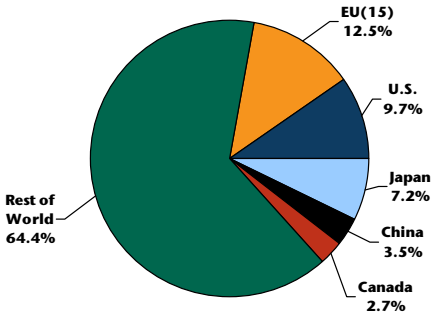
**Chart A2.2**
**World Agriculture and Agri-Food Export Share by Country of Origin, 2002**




Source: FAO.
Note: Excludes EU(15) intra-regional trade.

- **Canada is the fifth largest agriculture and agri-food importer,** after the EU(15), the U.S., Japan and China.

**Chart A2.3**
**World Agriculture and Agri-Food Import Share by Country of Origin, 2002**




Source: FAO.
Note: Excludes EU(15) intra-regional trade.

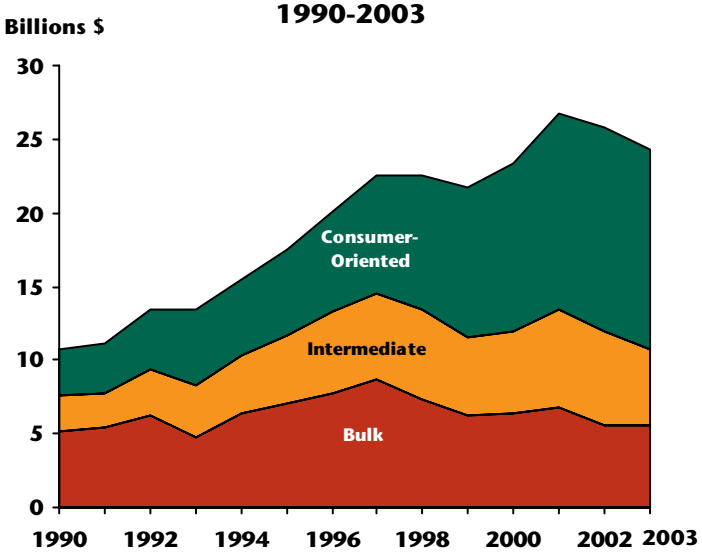
# Trade growth is being driven by value-added products

- **The export value of consumer-oriented products has more than quadrupled since 1990,** while the value of intermediate exports has doubled. The value of bulk exports is roughly back at the level it was in 1990. This represents a decline in the value of bulk exports in real dollar terms.

  **Consumer-oriented products now make up one-half of Canadian agriculture and agri-food exports.**

  **Agriculture and agri-food export sales have been sharply reduced in the last two years.** This reflects a combination of factors including trade restrictions due to the discovery of bovine spongiform encephalopathy (BSE), adverse growing conditions (e.g. Prairie drought and grasshopper infestations) which have reduced supplies available for export, and a stronger Canadian dollar.

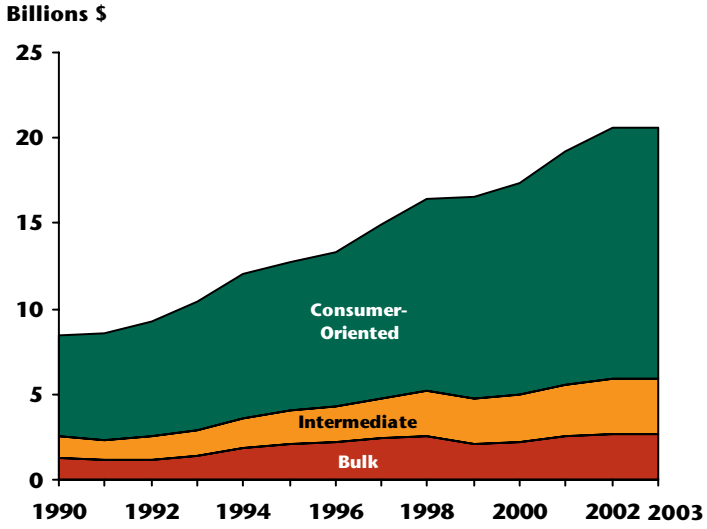
**Chart A2.4**
**Agriculture and Agri-Food Export Sales, 1990-2003**




Source: Statistics Canada and AAFC calculations.

- **Consumer-oriented products also make up the majority of Canadian agriculture and agri-food imports** accounting for roughly a 70% share. Consumer-oriented products have maintained this 70% share for the last decade.

**Chart A2.5**
**Agriculture and Agri-Food Import Purchases, 1990-2003**




Source: Statistics Canada and AAFC calculations.

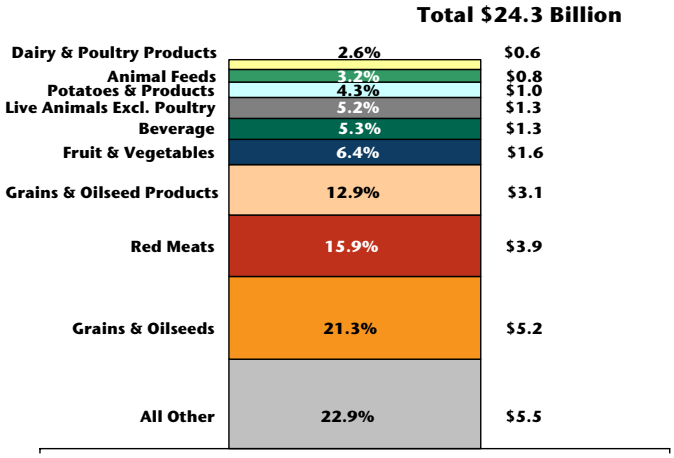
# Product composition of export sales is different than that of import purchases

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

  Live animals and red meats normally account for another 25%. In 2003, however, the share of live animals and red meats dropped to 20%. An 8% increase in hog and pork export sales mitigated in part the 50% loss in cattle and beef export sales due to BSE.

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

**Chart A2.6**
**Commodity Composition of Export Sales, 2003**



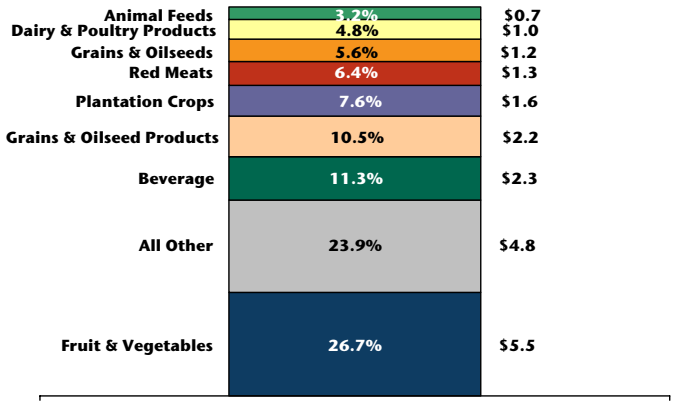

Source: Statistics Canada and AAFC calculations.

- **Raw commodity imports largely reflect different commodities than are exported**. For example, consider grain. While grain exports are mainly wheat, barley and oats, imports are mainly rice and corn.

  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 categories of imports in 2003 were fruits and vegetables, with a 27% value share, followed by beverages and grain and oilseed products, both with roughly a 11% value share.

**Chart A2.7**
**Commodity Composition of Import Purchases, 2003**




Source: Statistics Canada and AAFC calculations.

# Live cattle and beef export sales have been adversely affected by BSE, but recovery is underway

- **The closure of many borders, most importantly the U.S., to imports of Canadian live ruminants and their meat products has effectively stopped these exports, causing ripple effects in the domestic supply chain.**

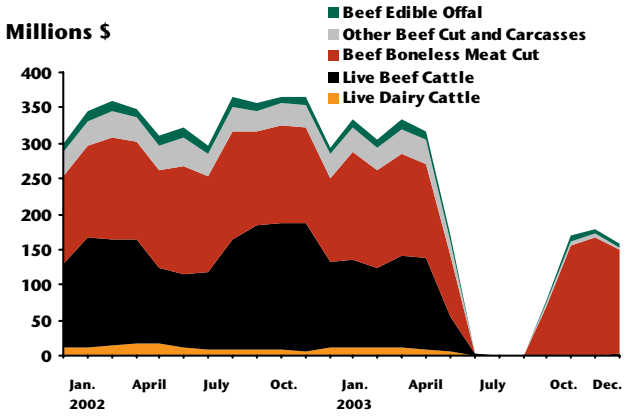
  The discovery of a second North American case of BSE is continuing to impact live ruminant exports in 2004. Officials from all three countries continue to harmonize policies and regulations to expedite trade resumption*.

  **The partial reopening of the U.S. border in September 2003 to boneless meat cuts from cattle under 30 months of age and sheep and goats under 12 months has brought some relief to red meat sales.**

  **Discussions are currently on-going with the U.S. to fully reopen the border, as well as continued negotiations to secure access to overseas markets.**

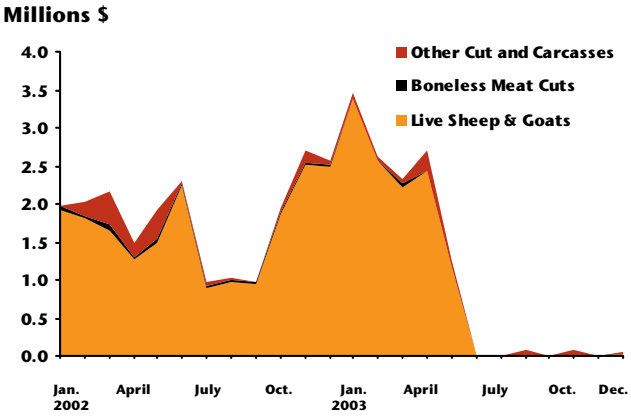
  Continued trade restrictions between Canada and the U.S. of older animals has caused downward price pressures. Additionally, Asian markets provided a key outlet for the cattle industry by paying premium prices for cuts that had little domestic value, such as beef tongue.

**Chart A2.8**
**Export Sales of Live Cattle and Beef to all Countries, January 2002 to December 2003**




Source: Statistics Canada and AAFC calculations.

**Chart A2.9**
**Export Sale of Live Sheep and Goats and Meat Products to all Countries, January 2002 to December 2003**



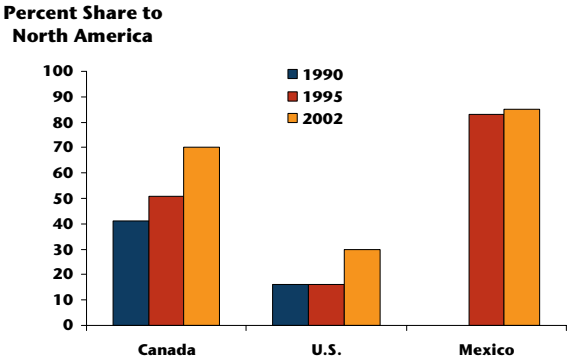

Source: Statistics Canada and AAFC calculations.

***At the time of printing (May 2004), Canada had been granted access to the U.S. for many of its beef products and access to Mexico for live animals. The U.S. government was in an advanced stage of its regulatory process to re-open trade to live cattle from Canada.**

# Trade is increasingly concentrated within a North American market

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

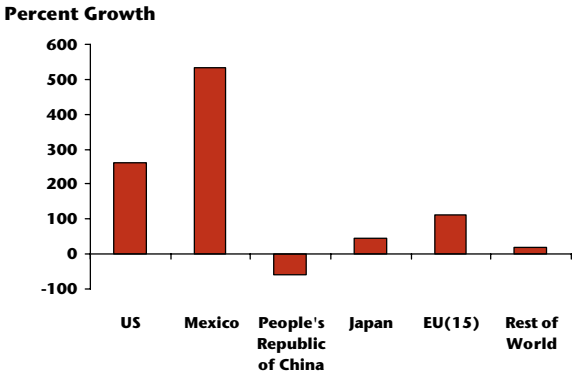
**Chart A2.10**
**The Share of Exports of NAFTA Countries that go to Other Countries in NAFTA, 1990, 1995 and 2002**




Source: Statistics Canada, Industry Canada, Global Trade Atlas and AAFC calculations.
Note: 1990 data for Mexico is unavailable.

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

**Chart A2.11**
**Growth in Canadian Agriculture and Agri-Food Exports by Destination, 1990-2003**

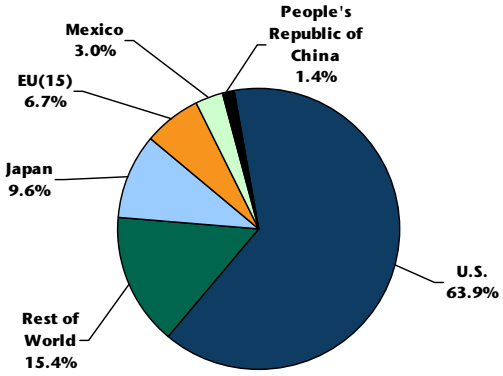



Source: Statistics Canada and AAFC calculations.

- **In 2003, the U.S. accounted for 64% of Canada's total agriculture and agri-food export sales.** This compares to a 67% share in 2002, and a 40% share in 1990. The drop in share relative to 2002 reflects in part the U.S. border closure due to B.S.E.

  The U.S. market is particularly important for consumer-oriented and intermediate products, accounting for 84% of the total export sales of these products.

**Chart A2.12**
**Destinations of Canadian Agriculture and Agri-Food Exports, 2003**



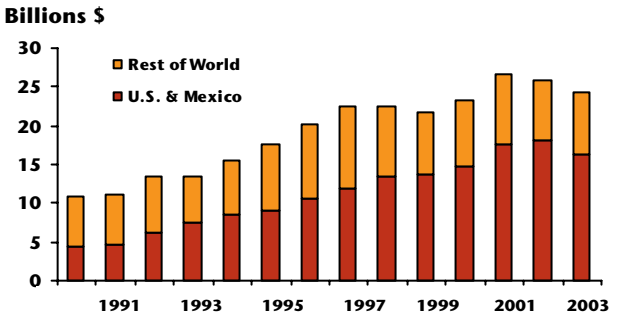

Source: Statistics Canada and AAFC calculations.

# But trade with other countries is holding steady

- **Agriculture and agri-food exports to other countries are also growing.** Total export value to these other countries in 2001 was around $9 billion, but has fallen back in the last two years to around $8 billion.

  After the U.S., Japan is the next largest purchaser of Canadian agriculture and agri-food products accounting for a 10% share in 2003, followed by the EU(15) with a 7% share (see Chart A2.12).

**Chart A2.13**
**Agriculture and Agri-Food Exports to North America and the Rest of the World, 1990-2003**

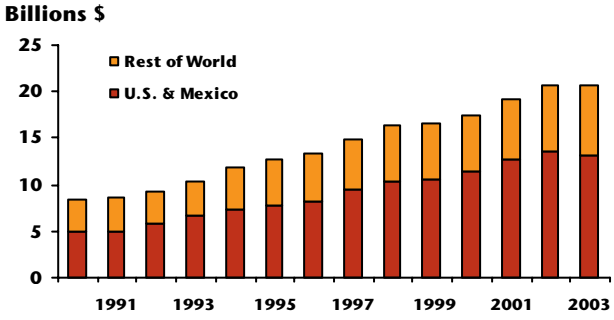



Source: Statistics Canada and AAFC calculations.

- **Imports from countries other than the U.S. have doubled since 1990**.

  After the U.S., the EU(15) is Canada's main source of agriculture and agri-food imports.

**Chart A2.14**
**Agriculture and Agri-Food Imports from North America and the Rest of the World, 1990-2003**

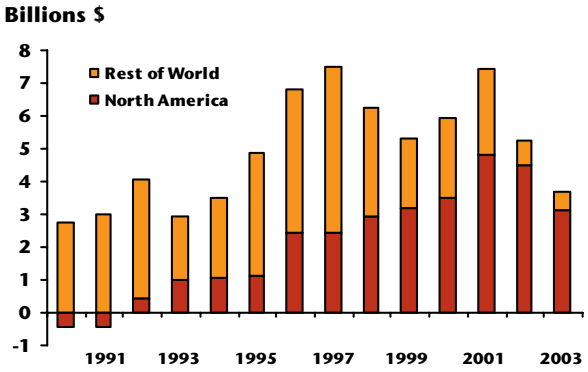



Source: Statistics Canada and AAFC calculations.

- **Agriculture and agri-food imports have been growing at a slower pace than exports resulting in a widening positive trade balance.** In 2003, however, the trade surplus with the total world dropped to $3.7 billion.

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

**Chart A2.15**
**Agriculture and Agri-Food Trade Balance, 1990-2003**




Source: Statistics Canada and AAFC calculations.

# Profitability, Productivity and Concentration

A3

# All stages of the value chain are profitable

- **Canadian food retailers and processors rank among the world's top food retailers and processors**. For example, Loblaws and Sobeys rank in North America's top food retailer list as #11 and #19.

  Loblaws and Sobeys also rank in Price Waterhouse Cooper's "Top 100 Retailers Worldwide" list that incorporates all types of retail, ranking #58 and #80, respectively[4].

  The top Canadian processors are listed in Section A4.

**Chart A3.1**
**Canadian Food Retailers in the North American Top 75 Food Retailers List, 2002**

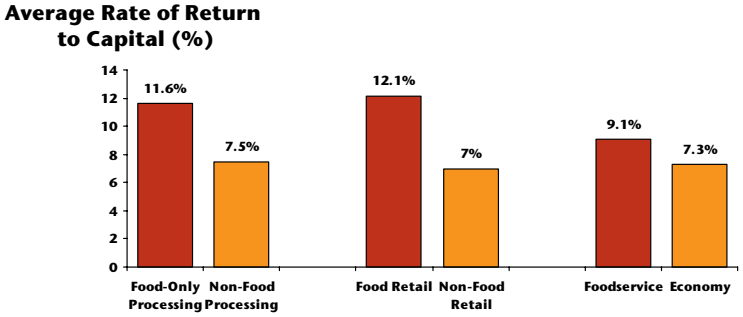
| North American Rank | Food Retailer | Sales (Billions US $) |
|---|---|---|
| 11 | Loblaws Companies Ltd. | 15.2 |
| 19 | Sobeys | 6.7 |
| 31 | Metro | 3.3 |
| 47 | Overwaitea Food Group | 1.8 |
| 64 | Federated Cooperatives | 0.9 |

Source: Supermarket News, SN's Top 75.

- **On average, food processors and food retailers earn higher rates of return to long term capital than their non-food counterparts[5].**

  Other profitability measures for food processing are shown in Section B3.

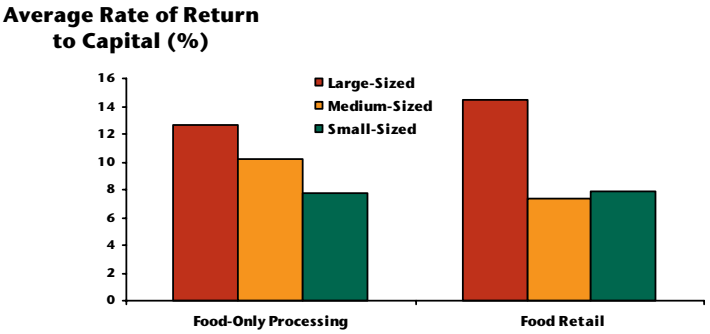
**Chart A3.2**
**Average Rate of Return of Food Versus Non-Food Related Industries, 1990-1998**




Source: Harper and Burroughs (2003), Smith and Trant (2003) and Harper and Smith (2001).

- **Large-sized food processors and retailers, on average, tend to earn higher rates of return than do small and medium-sized food processors and retailers.** This is in contrast to the non-food sector. Small and medium-sized non-food processors and retailers, on average, tend to earn higher rates of return than large-sized non-food processors and retailers[6].

**Chart A3.3**
**Average Rates of Return for Large, Medium and Small-Sized Food Processors and Food Retailers, 1990-1998**




Source: Harper and Burroughs (2003), Smith and Trant (2003) and Harper and Smith (2001).

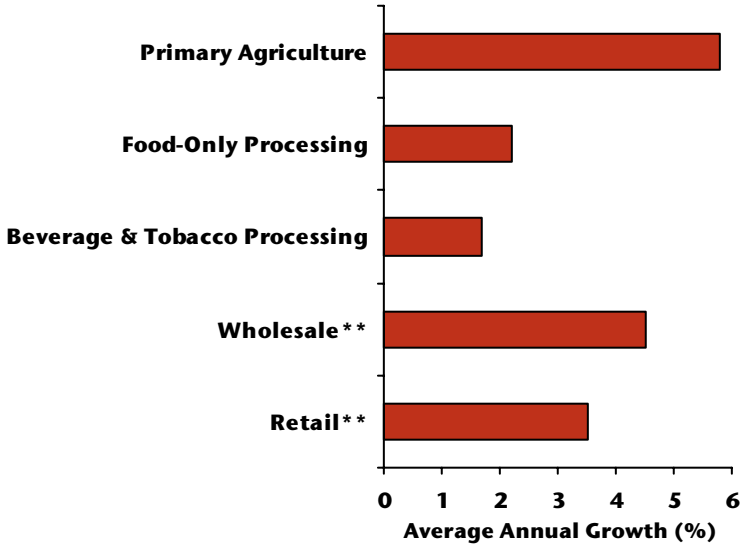
Note: Large-sized processors and retailers are those with $100 million or more in sales, medium-sized are those with sales between $10 million and $99.9 million and small-sized are those with sales less than $10 million.

# Primary agriculture has some of the fastest productivity growth rates in the economy

- **Since 1997, labour productivity* in primary agriculture has been growing at an annual average rate of 5.8%, the fastest pace in the economy[7].** This strong growth in primary agriculture reflects in part the shift to more capital-intensive technology and restructuring (i.e. consolidation and increasing scales of operation).

  Labour productivity growth in food-only processing was roughly on par with the general economy at 2.3%. Beverage and tobacco processing showed a slightly lower growth rate.

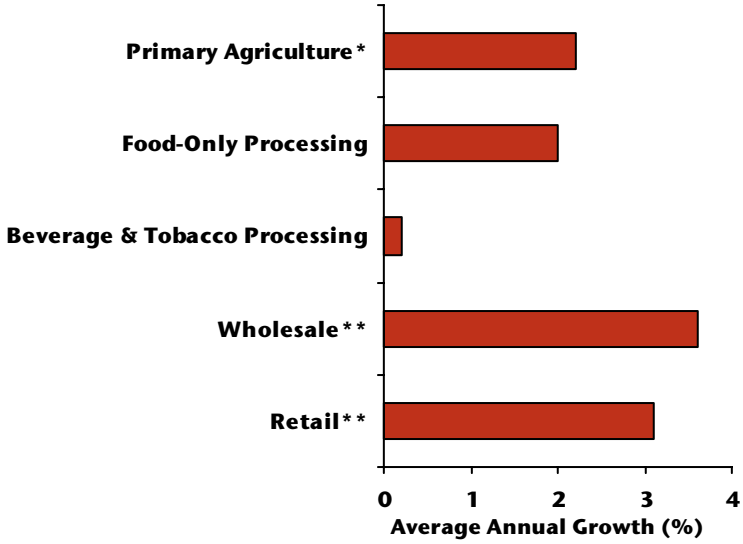
**Chart A3.4**
**Labour Productivity Growth in the Agriculture and Agri-Food System, 1997-2002**




Source: Statistics Canada.
Note: **Encompasses both food and non-food retail/wholesale activities.

- **Multifactor productivity growth* in both primary agriculture and food-only processing has been around 2% annually.** While this is in excess of the general economy's growth rate of 1.5%, it is similar to that of general manufacturing at 2.3%.

**Chart A3.5**
**Multifactor Productivity Growth in the Agriculture and Agri-Food System, 1997-2002**




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

***Labour productivity is a measure of an industry's output per hour of labour worked. Multifactor productivity is a better measure of productivity than labour productivity because it measures the efficiency in use of all production inputs, not just labour. Multifactor productivity growth is calculated as the growth in output less the growth in all the combined inputs.**

# Concentration varies across the agri-food chain

- **There are large differences in concentration across the various stages of the system.**

  While 98% of all farms are family owned and operated, there are large corporations involved in primary agriculture. The top 4 farm enterprises in the mid-1990's accounted for nearly 5% of total industry sales.

  Food-only processing, considered as a whole, has a relatively low CR4 of 13%, but many of its sub-sector industries have CR4s exceeding 90%.

  **In the global economy of today, concentration ratios are becoming less meaningful measures of market power.** Globalization, by increasing domestic competition through imports, can reduce the ability of domestic firms to exert market power. By looking at the Canadian market in isolation, these ratios ignore the reality that many firms are competing within a much larger integrated North American economy.

**Chart A3.6**
**Concentration in the Agriculture and Agri-Food System, 1993-1998**

| Industry | Top 4 firms sales as a percent of total industry sales, 1993-1998 |
|---|---|
| **Input Suppliers** | |
| Farm machinery, equipment and suppliers wholesale | 30.9 |
| Agricultural suppliers wholesale | 28.2 |
| Agricultural related services | 12.9 |
| **Primary Agriculture** | 4.5 |
| **Food-Only Processing** | 13.3 |
| **Beverage Processing** | 59.4 |
| **Food Wholesalers** | |
| Grain elevators | 91.9 |
| Farm products | 46.4 |
| Food wholesale | 26.7 |

Source: Beaulieu (2002).

# Labour, Capital and Investment

A4

# The workforce is diverse within the agriculture and agri-food system

- **The typical farmer is male, with an average age of 51**. Farm employees, on the other hand, tend to be in their late 30's and equally reflect both genders.

**Chart A4.1**
**Labour Characteristics in Primary Agriculture by Occupation, 2000**

| | Total Employed (#) | Average Age | Average Total Income ($) | Gender (% Male) | Education (% with Post Secondary Credentials) |
|---|---|---|---|---|---|
| Farmers & Farm Managers | 227,875 | 51 | 27,590 | 74 | 32 |
| Farm Supervisors & Specialized Livestock Workers | 8,735 | 38 | 25,091 | 63 | 35 |
| General Farm Workers | 104,855 | 36 | 17,628 | 65 | 20 |
| Harvesting Labourers | 8,185 | 37 | 15,220 | 55 | 13 |
| Nursery & Greenhouse Operators & Managers | 6,185 | 44 | 31,398 | 56 | 47 |
| Nursery & Greenhouse Workers | 21,850 | 35 | 15,412 | 44 | 23 |

Source: Statistics Canada.
Note: See glossary of Occupations.

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

**Chart A4.2**
**Labour Characteristics in Food Processing by Occupation, 2000**

| | Total Employed (#) | Average Age | Average Total Income ($) | Gender (% Male) | Education (% with Post Secondary Credentials) |
|---|---|---|---|---|---|
| Supervisors in Food, Beverage and Tobacco Processing | 12,330 | 40 | 41,587 | 75 | 40 |
| Machine Operators and Related Workers in Food, Beverage and Tobacco Processing | 56,000 | 39 | 27,869 | 65 | 24 |
| Labourers in Food, Beverage and Tobacco Processing | 71,800 | 37 | 22,056 | 48 | 19 |

Source: Statistics Canada.
Note: See glossary of Occupations.

# The workforce in the agri-food sector is more male dominated while in food distribution, it is more female dominated

- **Food retail/wholesale is not much different than non-food retail/wholesale in terms of the characteristics of its labour make-up.** While supervisory and specialty positions, such as bakers and butchers, tend to reflect both genders, lower level positions, such as cashiers, are predominantly female.

**Chart A4.3**
**Labour Characteristics in Food Retail/Wholesale by Occupation, 2000**

| | Total Employed (#) | Average Age | Average Total Income ($) | Gender (% Male) | Education (% with Post Secondary Credentials) |
|---|---|---|---|---|---|
| Grain Elevator Operators | 1,080 | 41 | 44,763 | 92 | 29 |
| Bakers and Butchers | 62,950 | 37 | 21,919 | 57 | 29 |
| Retail Trade Supervisors* | n/a | 36 | 28,425 | 45 | 34 |
| Cashiers* | n/a | 29 | 12,343 | 14 | 22 |

Source: Statistics Canada.

Note: See glossary of Occupations.

*Reported statistics also reflect values for workers in non-food related activities.

- Like food retail/wholesale, supervisory and specialty positions in foodservice tend to reflect both genders, while lower level positions are dominated by women.

**Chart A4.4**
**Labour Characteristics in Foodservice by Occupation, 2000**

| | Total Employed (#) | Average Age | Average Total Income ($) | Gender (% Male) | Education (% with Post Secondary Credentials) |
|---|---|---|---|---|---|
| Restaurant & Foodservice Managers* | n/a | 41 | 30,022 | 53 | 42 |
| Foodservice Supervisors | 29,440 | 31 | 20,207 | 34 | 31 |
| Chefs & Cooks | 198,260 | 35 | 18,044 | 57 | 30 |
| Occupations in Food & Beverage Service | 253,880 | 29 | 13,724 | 23 | 27 |
| Food Counter Attendants, Kitchen Helpers & Related Occupations | 265,775 | 28 | 11,107 | 35 | 15 |

Source: Statistics Canada.

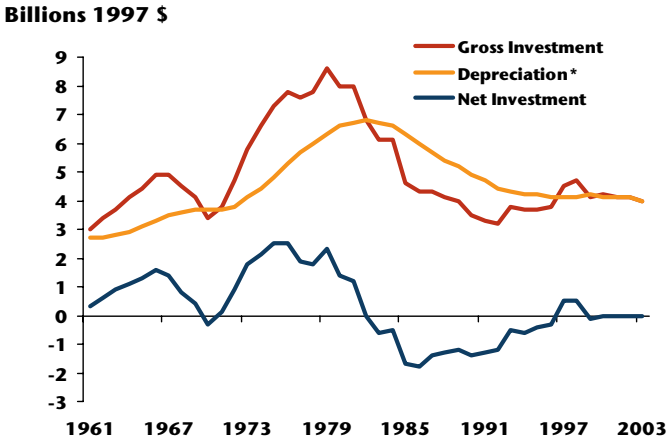
Note: See glossary of Occupations.

*Reported statistics also reflect values for Accommodation Service Managers.

# Capital stock in primary agriculture has declined since the 1980's even as productivity has increased

- **Primary agriculture began a period of rationalization in the 1980's in the wake of the rapid investment growth of the 1970's.**
  The investment decline reflected several different factors. The most important were a significant 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 A4.5**
**Investment in Primary Agriculture, 1961-2003**



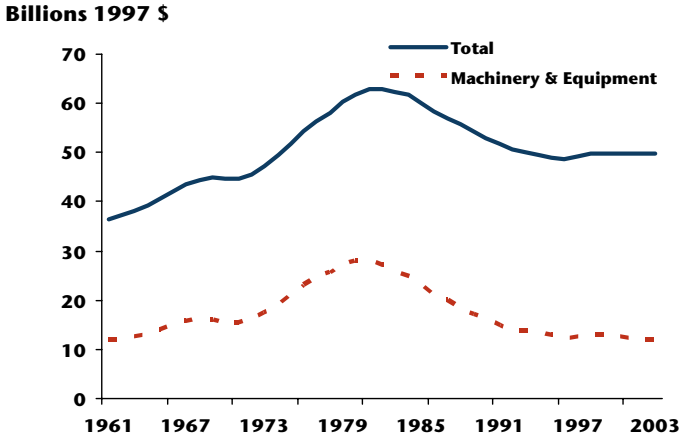

Source: Statistics Canada.

*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 as in Canada.

**Chart A4.6**
**Capital Stock in Primary Agriculture, 1961-2003**




Source: Statistics Canada.

# Inward and Outward 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 which can lower food costs for consumers.

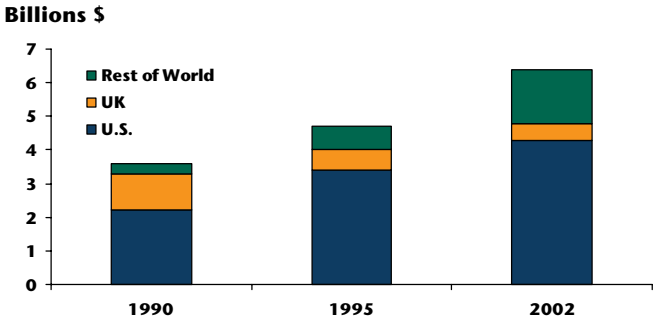
  For example, as international food processors and retailers invest in Canada, they are securing access to the North American market and bringing their own procurement, distribution and merchandizing systems.
- **Accumulated U.S. FDI in Canadian food-only processing has nearly doubled since 1990 and now accounts for roughly a 70% share of total FDI in food-only processing.** This underestimates the true importance of U.S. FDI. Official FDI statistics do not take into account any reinvestments in the Canadian based plants from retained earnings.

**Chart A4.7**
**Top Global Food Retailers with Operations in Canada**

| World Rank | Company | Global Sales (Billions US $) |
|---|---|---|
| 1 | Wal-Mart Stores, U.S. | 244.5 |
| 7 | Costco, U.S. | 38.0 |
| 13 | Ito-Yokado, Japan | 27.2 |
| 17 | Aeon, Japan | 24.6 |
| 18 | Tengelmann, Germany | 24.4 |

Source: Supermarket News, SN Global Top 25.

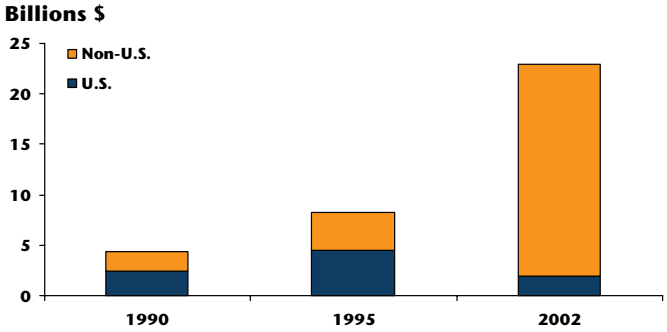
**Chart A4.8**
**Accumulated FDI in Canadian Food-Only Processing by Country of Origin, 1990, 1995 and 2002**




Source: Statistics Canada and AAFC calculations.
Note: SIC-C Classification System.

- The huge increase in accumulated non-U.S. FDI in beverage processing between 1995 and 2002 reflects in part the purchase of Seagrams by Vivendi SA and of Labatts by Interbrew of Belgium.

**Chart A4.9**
**Accumulated FDI in Canadian Beverage Processing by Country of Origin, 1990, 1995 and 2002**




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 about 55 production facilities on six continents[8].

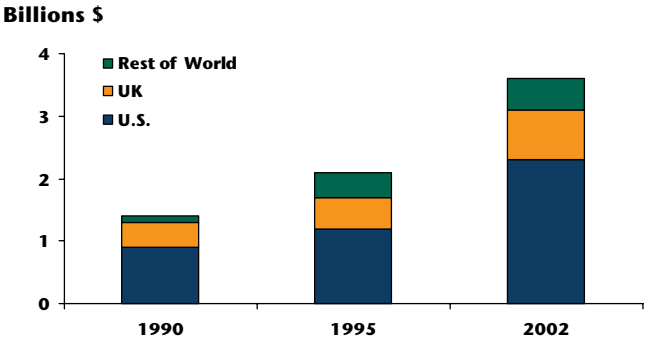
**Chart A4.10**
**Locations of International Plant Facilities**

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

- **More Canadian outward investment is flowing to the U.S. market.** Accumulated U.S. directed outward investment in food-only processing has increased by $1.4 billion since 1990.

  **But Canadian food-only processing is also rapidly expanding beyond the North American market,** with accumulated outward investment to the UK doubling since 1990, and to the Rest of the World increasing by five-fold.

**Chart A4.11**
**Accumulated Outward Investment in Food-Only Processing by Country of Destination, 1990, 1995 and 2002**

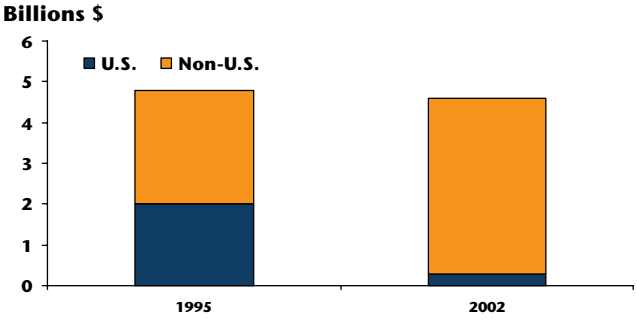



Source: Statistics Canada and AAFC calculations.
Note: SIC-C Classification System.

- **Beverage processing has also been focussing beyond the North American market.** Accumulated outward investment to these other countries has increased by 50% since 1990, reflecting in part Molson's purchase of Brazil's Bavaria and Kaiser brewery.

  Accumulated outward investment to the U.S. in beverage processing has sharply declined since 1995, reflecting in part the sale of Seagrams and its U.S. facilities.

**Chart A4.12**
**Accumulated Outward Investment in Beverage Processing by Country of Destination, 1995 and 2002**




Source: Statistics Canada and AAFC calculations.
Note: SIC-C Classification System.

# Innovation

A5

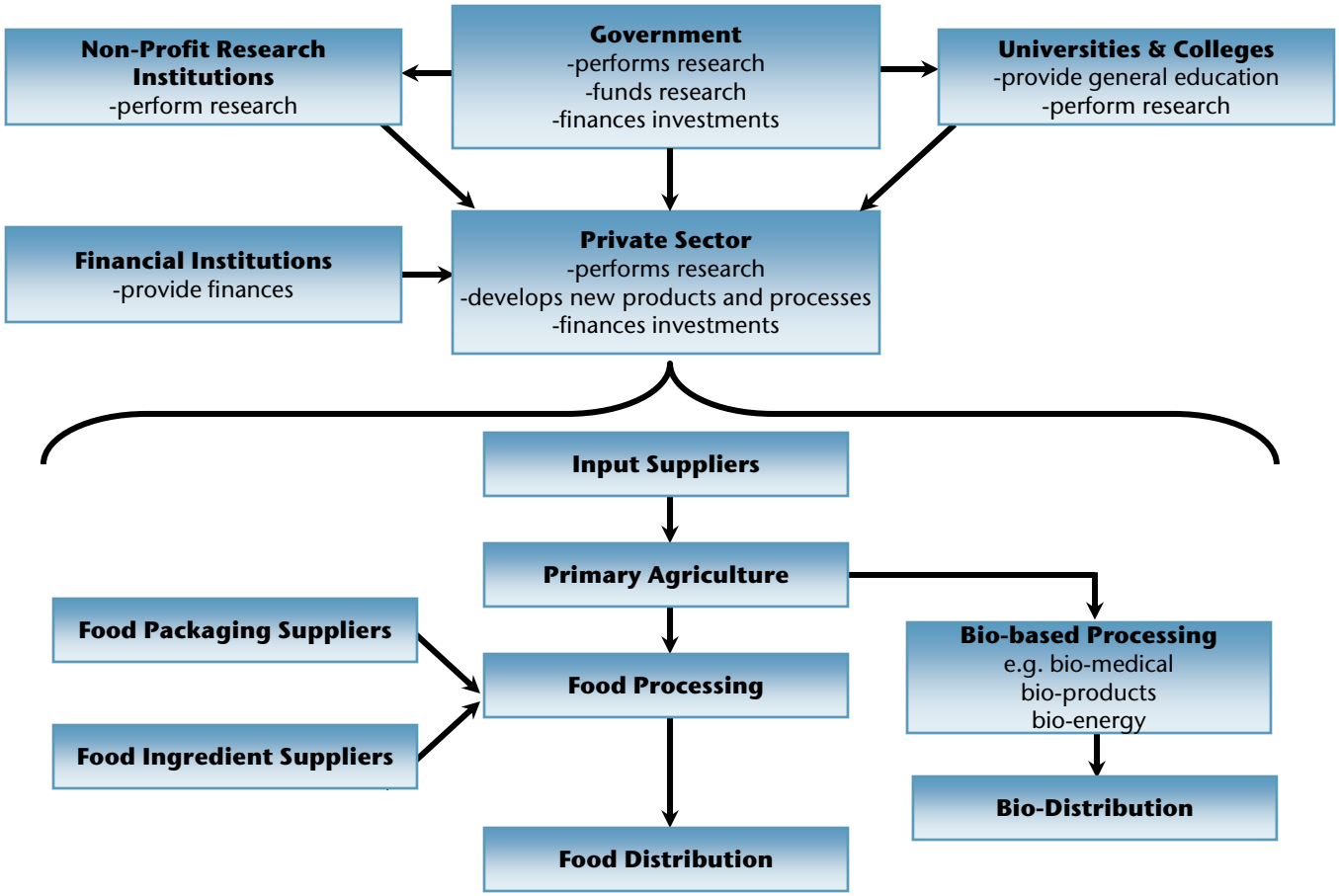
# Innovation has helped to make the agriculture and agri-food system highly productive

- **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.

  **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 A5.1**
**The Agriculture and Agri-Food Innovation System**

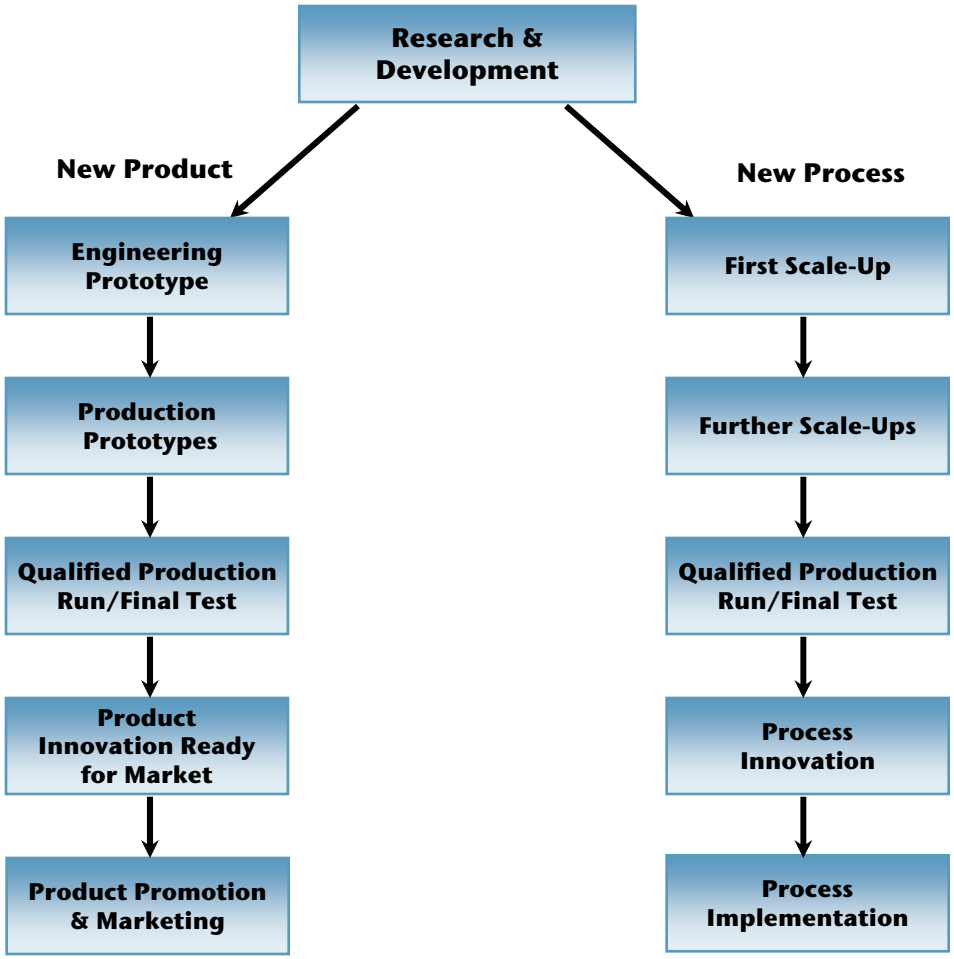


# Innovation involves much more than just Research and Development (R&D)

- **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.

  If outside investment is needed, it usually cannot be brought in before the production prototype or further scale-up stage.

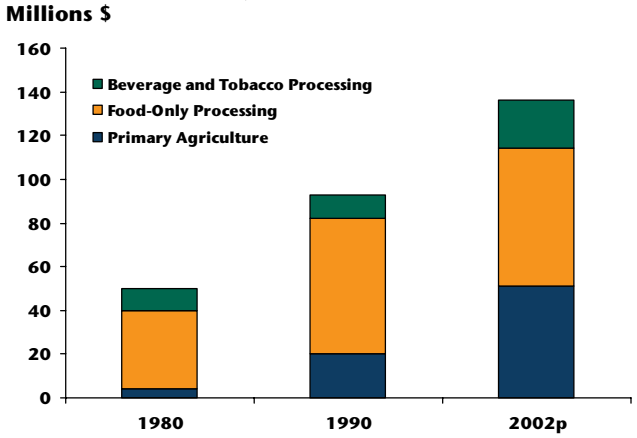
**Chart A5.2**
**Steps in Agriculture and Agri-Food Innovation**



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

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

**Chart A5.3**
**Private Industry's R&D Expenditures in the Agri-Food Sector, 1980, 1990 and 2002**



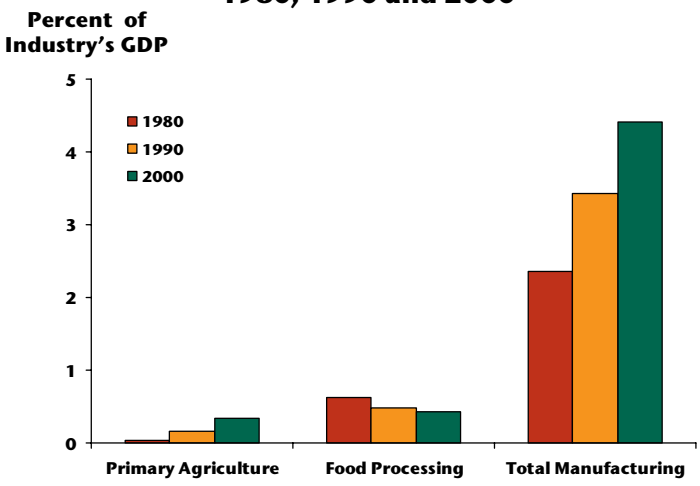

Source: Statistics Canada.

Note: 1) 2002 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 by the agri-food sector, is much lower than for total manufacturing.**

**Chart A5.4**
**Private Industry's R&D Expenditures as a Share of GDP, 1980, 1990 and 2000**



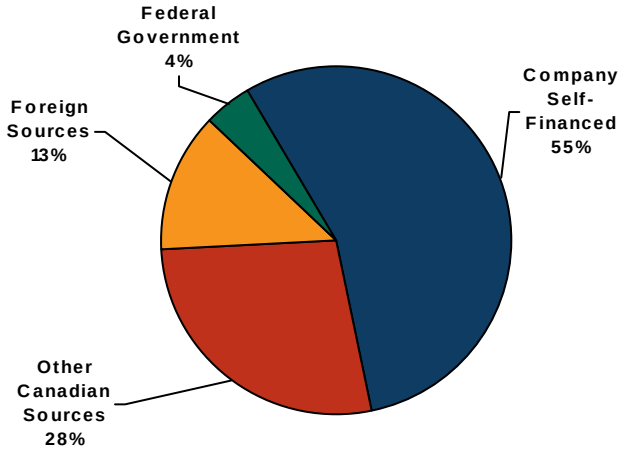

Source: Statistics Canada.

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 a large contributor 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 A5.5**
**Sources of Funds for Private Industry's R&D Expenditures in Primary Agriculture, 2001**




Source: Statistics Canada.

Note: 1) This data also incorporates the forestry, fishing and hunting sectors.

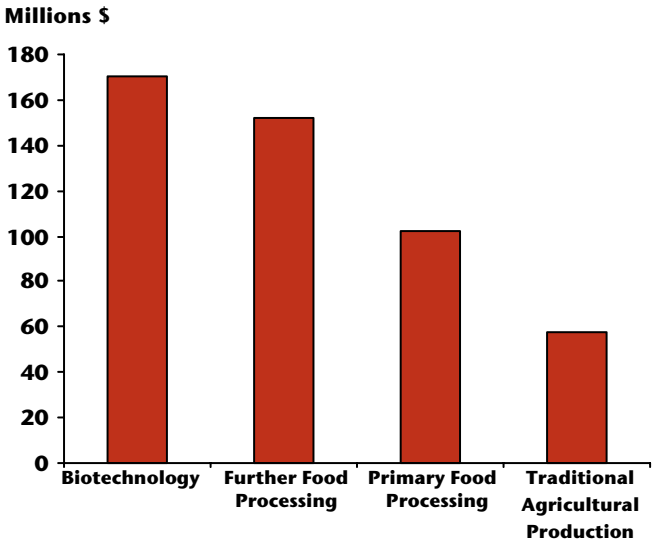
2) Other Canadian sources includes funding from other companies and provincial governments.

- **Venture capital funds specializing in the 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[9].

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

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

**Chart A5.6**
**Venture Capital Investments in Agricultural-Related Enterprises by Sector, January 1996-September 2003**




Source: MacDonald and Associates, 2002.

Section B

# The Agriculture and Agri-Food System's Components

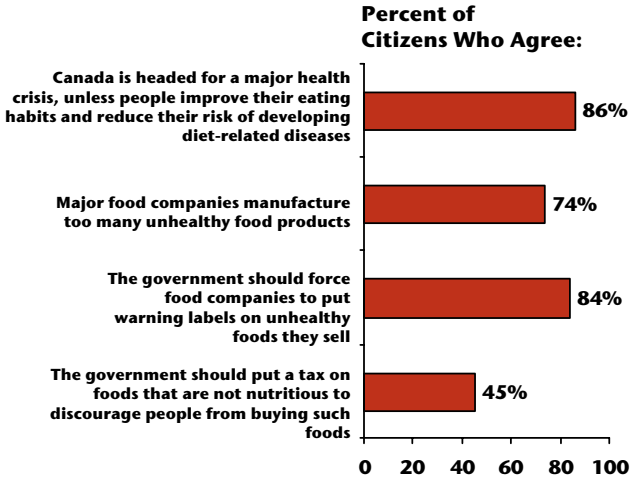
# Consumers

B1

# Consumers are demanding more information about the food they eat

- **Consumers are becoming more conscious of the link between lifestyle, food and health.** A survey by Ipsos Reid found that two-thirds of Canadians have made changes to their diet with the majority doing so to maintain their health[11]. Obesity, especially in children, is becoming a serious concern. Consumers are demanding healthier food choices in grocery stores, restaurants and schools.

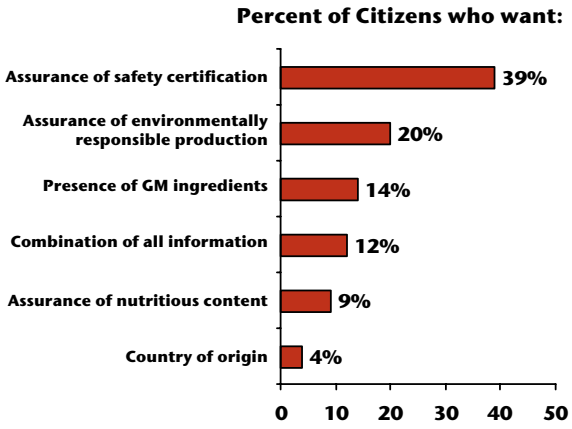
**Chart B1.1**
**Canadian Attitudes Towards Food Issues**




Source: GlobeScan Inc., "Food Issues Monitor Canada Tables 2002", pages 307-343.

- **As consumer tastes and preferences become more sophisticated, they are demanding more information about the food they consume, including assurances of quality and safety.**

**Chart B1.2**
**Food Labelling Information Preferences of Canadians**




Source: GlobeScan Inc., "Food Issues Monitor Canada Tables 2002", page 295.

# Consumers are concerned about food safety

- **Consumers are concerned about the safety of the food they eat.** This concern has been stimulated by international high-profile food safety incidents. Based on a survey of citizens in 11 countries, GlobeScan Inc. found that roughly half of the citizens in developed countries feel that food safety is an issue of greater concern than nutrition and price of food[12]. Results for Canada and the U.S. were significantly lower than for the other countries.

  A survey by Ipsos Reid found that Canadians have a high degree of trust in Canada's food regulatory system and are confident that it will protect them from food borne illnesses[13]. This has been demonstrated recently by domestic consumers' continued strong beef demand following the discovery of BSE in May 2003.

  The strong trust of Canadian consumers' contrasts sharply to the attitude of Europeans and South Americans. A large percentage of consumers in these countries do not believe that their national regulatory system is effective in ensuring food safety.

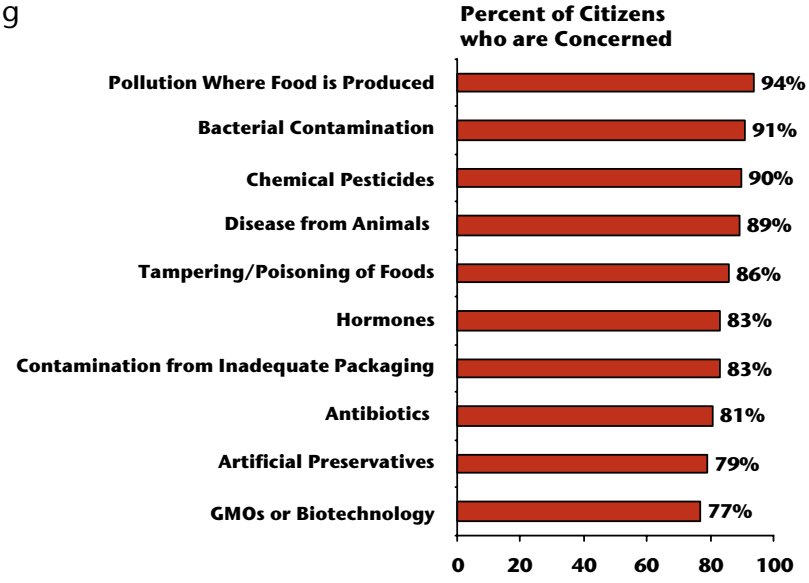
**Chart B1.3**
**Food Issues of Greatest Concern, 2000 and 2002**

| Percent of citizens who feel the food issue of greatest concern is | | | | | | |
|---|---|---|---|---|---|---|
| | Food Safety | | Price | | Nutritional Value | |
| Country | 2000 | 2002 | 2000 | 2002 | 2000 | 2002 |
| Canada | 42 | 44 | 13 | 11 | 28 | 32 |
| Germany | 69 | 67 | 6 | 13 | 7 | 6 |
| Great Britain | 50 | 47 | 12 | 12 | 21 | 26 |
| Japan | 63 | 71 | 7 | 8 | 5 | 5 |
| USA | 43 | 42 | 13 | 15 | 24 | 29 |

Source: GlobeScan Inc., "Food Issue Monitor, 2001", page 57.
GlobeScan Inc., "Food Issues Monitor Tables 2002", page 4.

- **Consumers food safety concerns cover issues ranging** from pollution where food is produced to residual pesticides, contracting disease from animals and GMOs.

**Chart B1.4**
**Canadian Consumer Food Related Concerns, 2002**

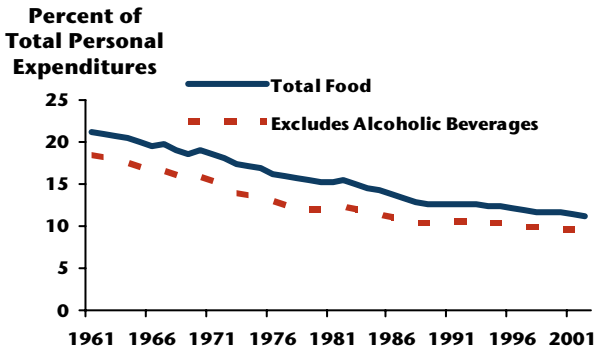



Source: GlobeScan Inc., "Food Issues Monitor Canada Tables 2002", pages 7-49.

# For the average Canadian, food is increasingly affordable

- **In Canada the share of food (including beverages) in total personal expenditures has been falling for the past 40 years as real income has increased.**

**Chart B1.5**
**Personal Expenditures on Food in Canada, 1961-2002**

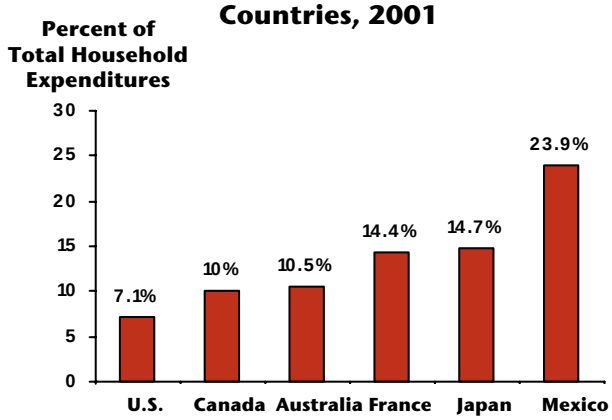



Source: Statistics Canada and AAFC calculations.

Note: Does not include expenditures on foodservice and tobacco.

- **The household expenditure share of food in 2001 was 10%.** This compares to a household expenditure share of nearly 15% in Japan, and 7% in the U.S.

**Chart B1.6**
**Household Expenditures on Food in OECD Countries, 2001**

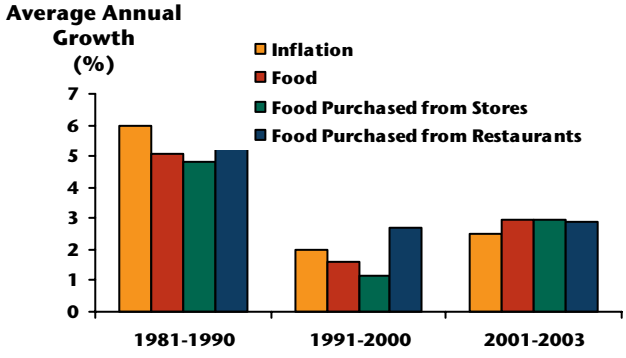



Source: OECD.

Note: 1) Excludes alcohol and tobacco.
2) Australia and Mexico data are for the year 2000.

- **Over the last 20 years, retail food price increases have generally been less than inflation, but have exceeded inflation in the last three years.**

**Chart B1.7**
**Consumer Price Indices for Food and All Goods and Services, 1981-2003**




Source: Statistics Canada and AAFC calculations.

# Food Distribution (Retail/Wholesale and Foodservice)

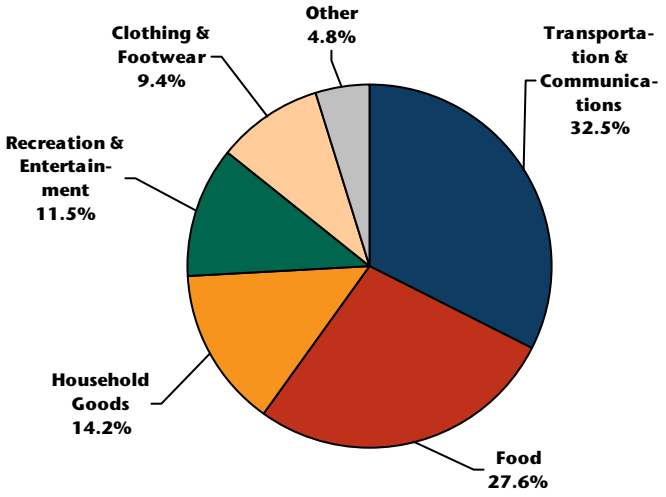
B2

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

- **Food expenditures represent the second largest consumer good expenditure category.**

  In 2002, Canadians spent $130 billion on food purchased from stores and foodservices ($118 billion excluding tobacco products).

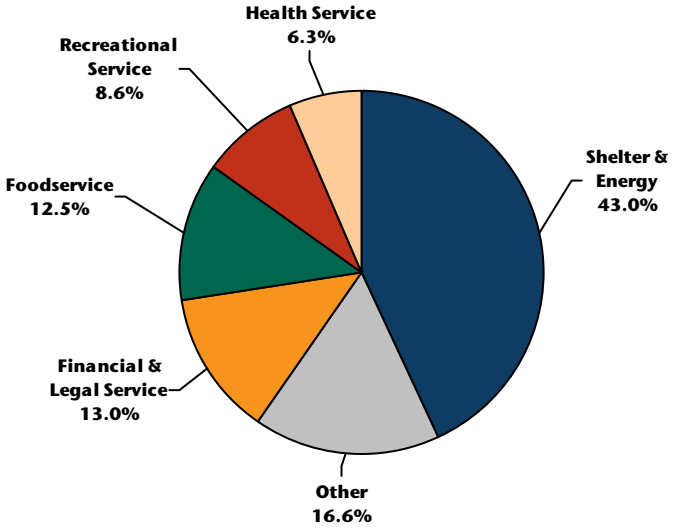
**Chart B2.1**
**Personal Expenditure on Goods, 2002**




Source: Statistics Canada.

- **Foodservice was the third largest service expenditure category in 2002**, accounting for around 12% of personal expenditures on services, or 6% of total personal expenditures.

**Chart B2.2**
**Personal Expenditure on Services, 2002**




Source: Statistics Canada and Canadian Restaurants and Foodservices Association.

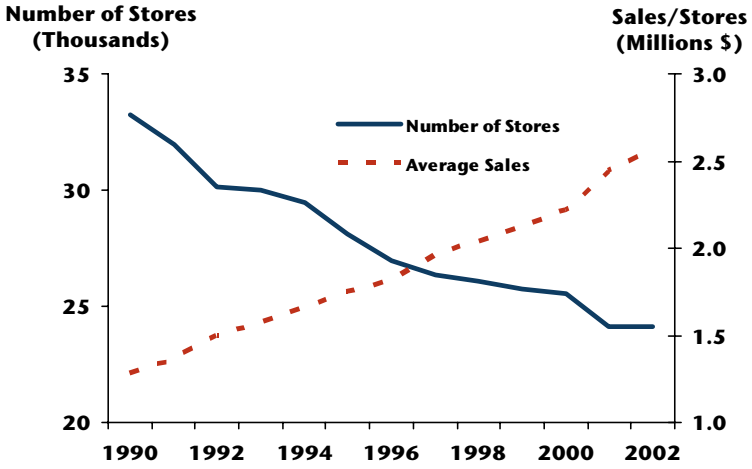
# Food retail is becoming more international, consolidated and larger in its operations

- **Significant store rationalization has occurred during the past decade,** with a move to larger operations.

  **Although the total number of food stores is declining, chain stores are increasing their number of branch and franchise stores both in Canada and in other countries.**

  In 2002, Loblaws had approximately 1,030 branch/franchise stores and Sobeys approximately 1,320 stores. Independents now account for 42% of grocery market sales, compared to 48% a decade ago.

**Chart B2.3**
**Number of Canadian Food Stores and Average Sales, 1990-2002**

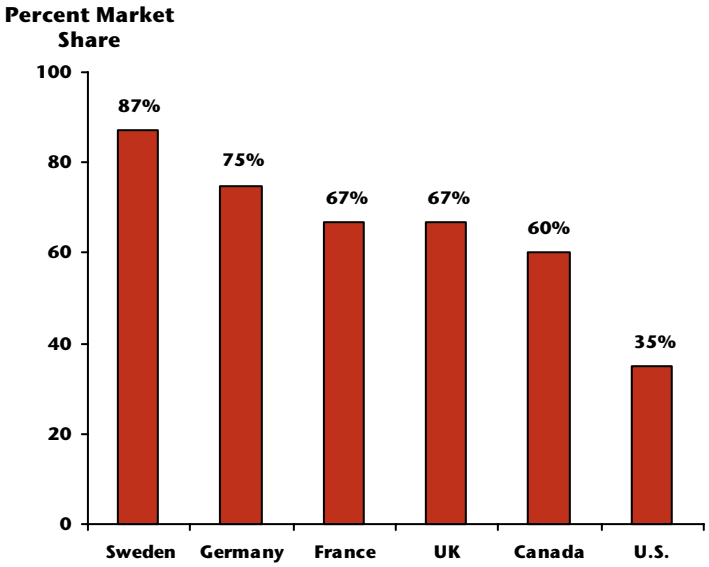



Source: Canadian Grocer, Statistics Canada and AAFC calculations.
Note: 2002 figures are estimates.

- **The five largest food retailers in Canada account for about 60% of national grocery sales up from 50% a decade ago.**

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

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

- **There is becoming less distinction between food and non-food retailers.** Department stores, pharmacies and gas stations are increasingly selling food items while traditional food retailers/wholesalers have expanded their non-food selections.

**Chart B2.5**
**Food Retail Channel Share, 2002**

| | % |
|---|---|
| **Supermarkets (Grocery Stores)** | 80.1 |
| **General Merchandise Stores** | 9.7 |
| **Specialty Food Stores** | 7.3 |
| **Drug Stores** | 1.4 |
| **Gas Stations** | 1.0 |
| **Other** | 0.3 |

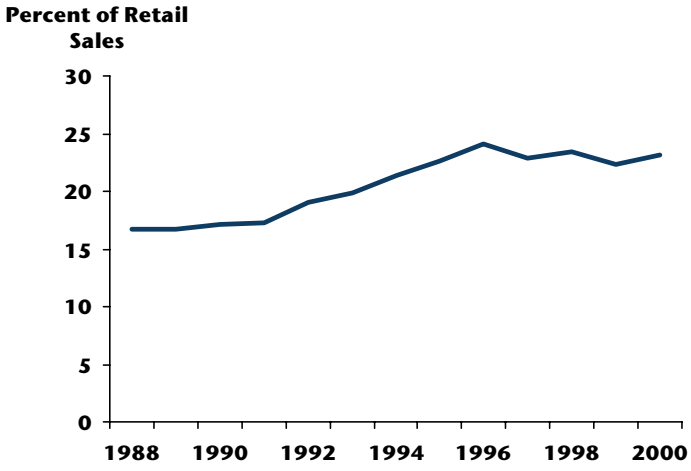
Source: Statistics Canada, Canadian Economic Observer, December 2003.

- **It is also becoming harder to distinguish between different stages of the food chain.**

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

  **More and more food retailers are becoming manufacturers of their own private labels** to better respond to consumers' cost sensitivities and/or specific quality demands and to obtain more product differentiation.

**Chart B2.6**
**Private Label Penetration, 1988-2000**




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

# Although foodservice is growing, most meals are still eaten at home

- **Commercial foodservice accounts for approximately 10% of all Canadian meals.**

**Chart B2.7**
**Where Canadians Eat Their Meals, 2001**

| | % of Meals |
|---|---|
| **In home – from retail** | 70 |
| **At a restaurant** | 8 |
| **Carried from home** | 7 |
| **Skipped meals** | 7 |
| **All other away-from-home** | 6 |
| **In-home-from restaurants** | 2 |

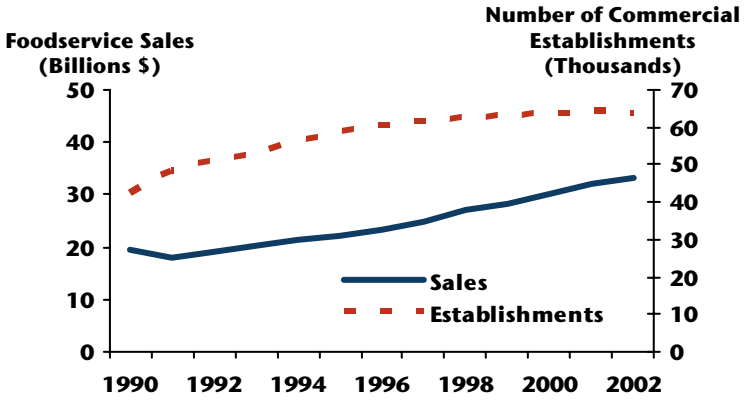
Source: Canadian Restaurant and Foodservices Association. (Sourced from Eating Patterns in Canada Report 2002, NPD Group Canada Inc.)

- **Commercial foodservice sales have increased by over 70% since 1990.**

  In 2002 there were around 63,000 establishments, down by about 500 from a year earlier.

  Foodservice sales are expected to be down in 2003 in part because of the decline in tourism due to SARS, the war in Iraq and a higher Canadian dollar[14].

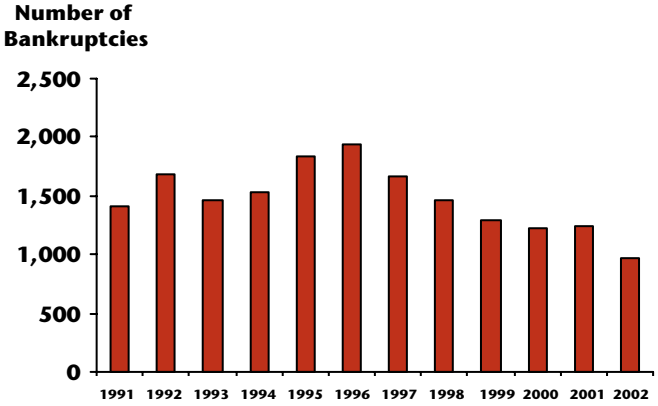
**Chart B2.8**
**Commercial Foodservice Sales and Number of Establishments, 1990-2002**




Source: Canadian Restaurant and Foodservices Association. Industry Canada and Statistics Canada.

- **In 2002, total number of bankruptcies were down by 20% from 2001.**

**Chart B2.9**
**Commercial Restaurant Bankruptcies, 1991-2002**




Source: Canadian Restaurant and Foodservices Association. Industry Canada and Statistics Canada.

# Foodservice is becoming more concentrated, but a large part is still independent

- **When Canadians eat out, they tend to prefer more than less service.** Nearly half of consumers expenditures on commercial foodservice are spent at full service restaurants, and one-third in limited service restaurants, such as fast food operations and cafeterias.

  Other and non-commercial foodservice accounts for around 22% of all foodservice sales.

  Other foodservice includes foodservice operated by department stores, convenience stores, movie theatres and the like as well as vending machines. Non-commercial foodservice includes institution meals such as in hospitals, prisons and the military.

**Chart B2.10**
**Market Share by Foodservice Category, 2002**

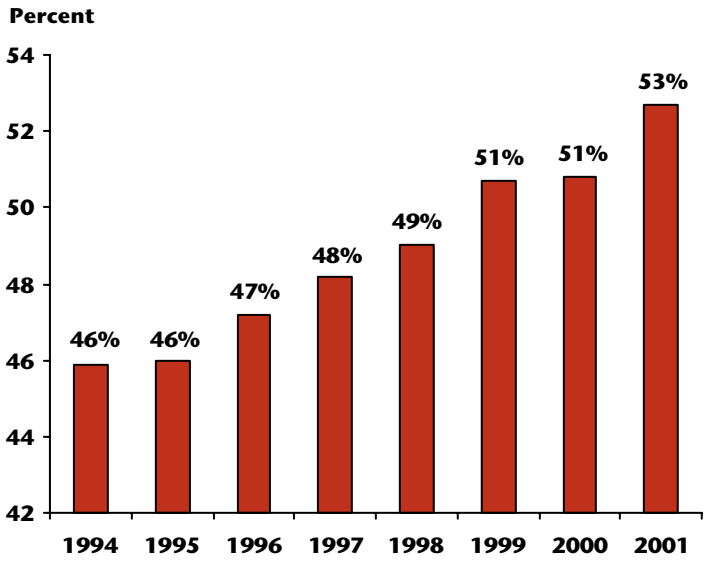
| | % |
|---|---|
| **Commercial Foodservice** | **78** |
| Full Service Restaurants | 39 |
| Limited Service Restaurants | 28 |
| Social and Contract Caterers | 7 |
| Pubs, Nightclubs | 5 |
| **Other and Non-Commercial Foodservice** | **22** |
| Accommodation Foodservice | 10 |
| Institutional Foodservice | 6 |
| Retail Foodservice | 2 |
| Other Foodservice | 4 |

Source: Canadian Restaurant and Foodservices Association.

- **Commercial foodservice remains quite fragmented with 64% of locations owned by independents compared to chains.** But concentration is increasing as chain restaurant companies continue to expand.

  In 2001, the top 50 foodservice companies had 53% of the commercial foodservice sales, up 7 percentage points from 1994.

**Chart B2.11**
**Top 50 Foodservice Companies' Share of Commercial Foodservice Sales, 1994-2001**




Source: Canadian Restaurant and Foodservices Association.

# Food Processing (Food-Only, Beverage and Tobacco)

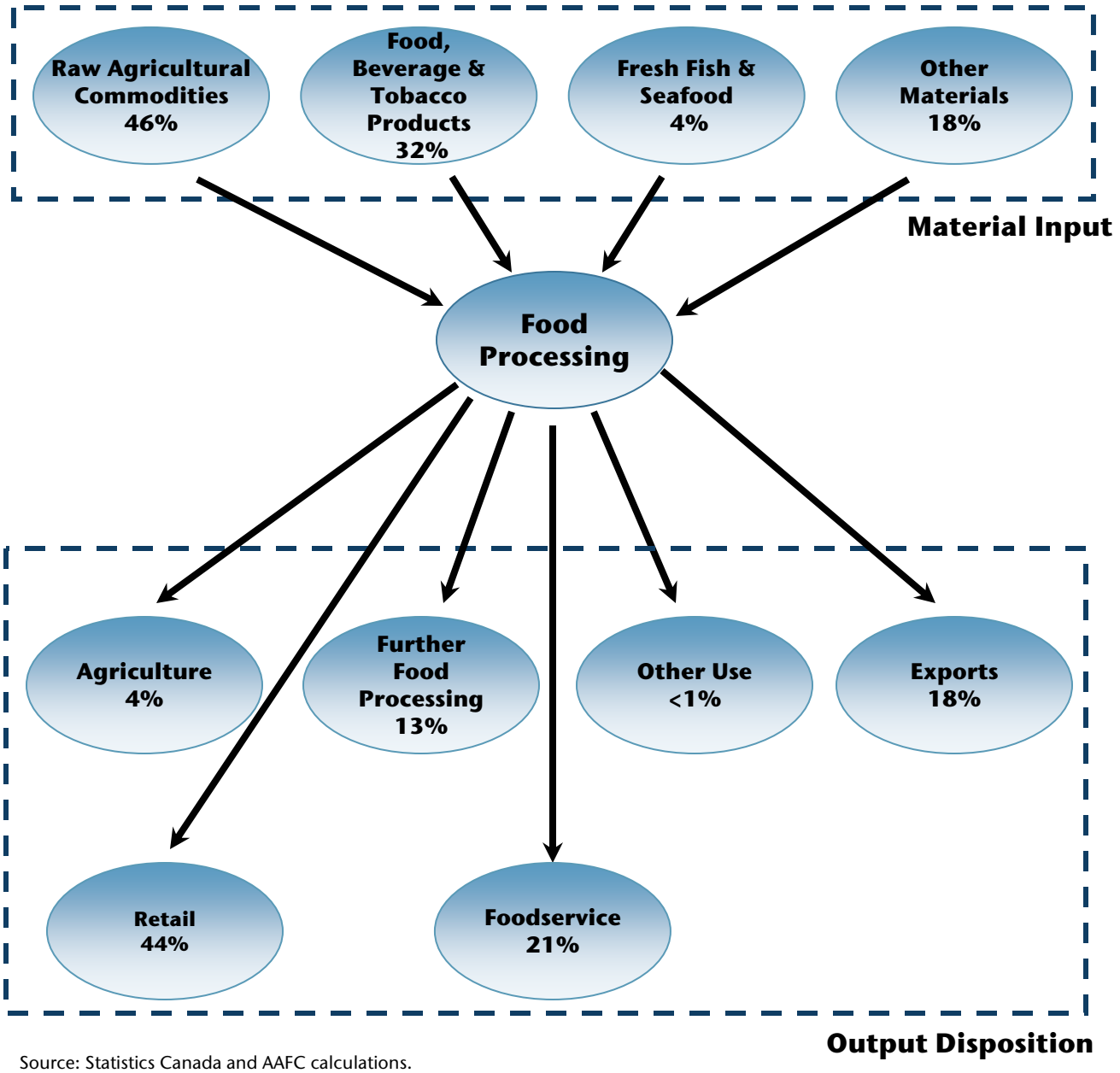
B3

# Food processing is a chain of industries

- **Food 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 $17 billion) of the total value of material input into food processing. Food, beverage and tobacco products, that go into further processing, make up another 32% (or $11 billion). The remaining 18% of input value is largely packaging materials. Energy costs, chemical additives, and equipment are also included in this other materials category.

**Chart B3.1**
**Food Processing Input Composition and Output Disposition, 1999**




Source: Statistics Canada and AAFC calculations.

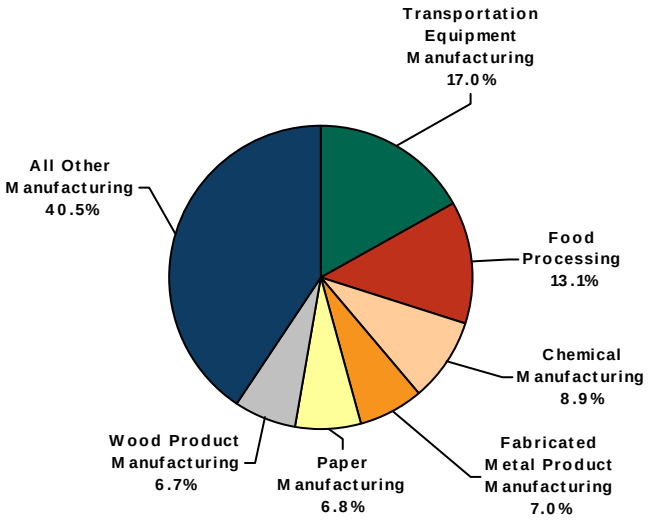
# It is an important part of the manufacturing sector

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

  In 2002, food processing's share of manufacturing GDP was 13% (food-only accounting for 10% and beverage and tobacco accounting for the remaining 3%).

  Food processing is the largest manufacturing industry in six provinces. It is the second largest in Ontario and Quebec and the third largest in British Columbia and New Brunswick.

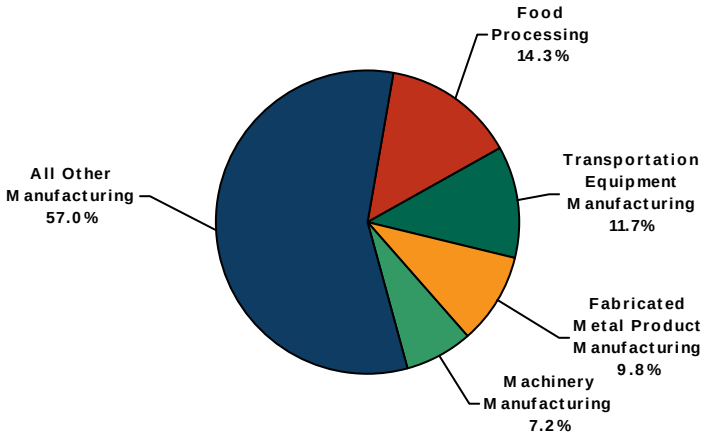
**Chart B3.2**
**Distribution of Total Manufacturing GDP by Sector, 2002**




Source: Statistics Canada.

- **Food processing is the largest manufacturing employer** accounting for 14% of the total number of employees.

**Chart B3.3**
**Distribution of Total Manufacturing Employment by Sector, 2002**



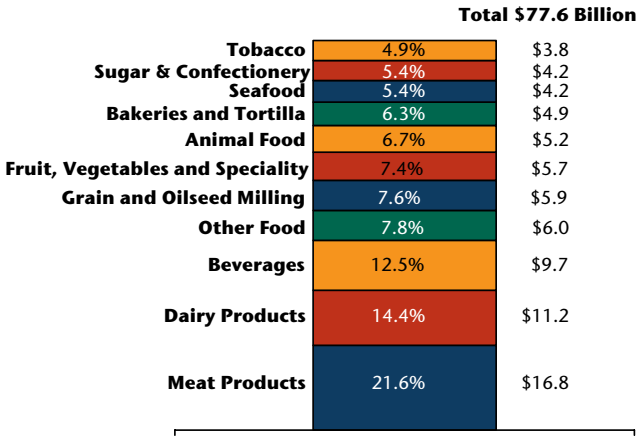

Source: Statistics Canada.

# Output continues to grow

- **The total value of food processing shipments in 2003 was $77.6 billion,** up by more than $1 billion from 2002. Overall, food processing shipments have increased by $30 billion since the early 1990s.

  **The largest food processing industry is meat products manufacturing, followed by dairy products manufacturing and beverages manufacturing.** In 2003 meat product manufacturing accounted for almost one-fifth of all shipments or approximately $17 billion in sales. This is about a $1billion decline relative to 2002.

**Chart B3.4**
**Value of Food Processing Shipments, 2003**



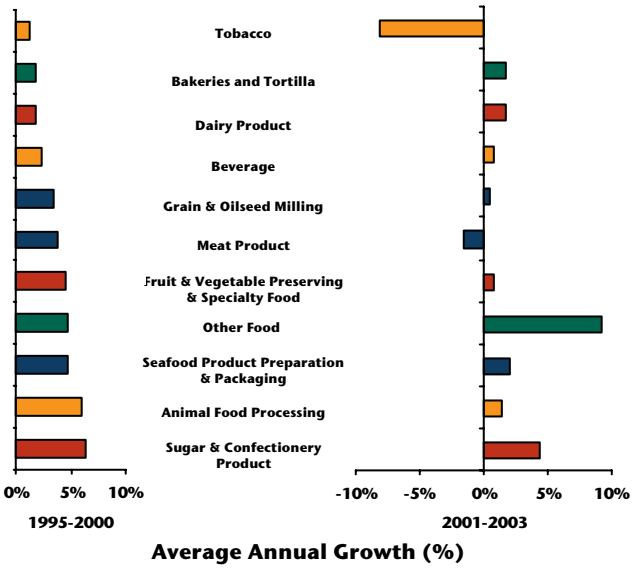

Source: Statistics Canada.

- **Most food processing industries have experienced a slowdown in average annual growth relative to the late 1990's.**

  The notable exception is other food manufacturing, which has experienced a 4.5 percentage point increase in its growth rate.

  Other food manufacturing encompasses industries producing snack foods, coffee and tea, salad dressings and condiments and soda pop concentrates.

**Chart B3.5**
**Growth in Shipment Value in Real Dollars by Food Processing Industry, 1995-2003**




Source: Statistics Canada and AAFC calculations.

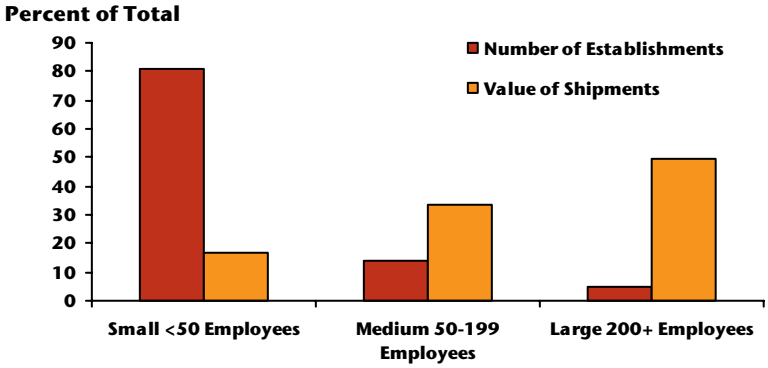
# Large and international-scale firms account for half of the output

- **In 2001 there were 6,000 food processing establishments across Canada,** each producing at least $30 thousand in sales.

  **Large establishments produce the bulk of output.** In 2001, they comprised only 5% of the total number of establishments but accounted for 49% of the value of shipments.

  In contrast, small establishments comprised over 80% of the total number of establishments but only accounted for 17% of the value of shipments.

**Chart B3.6**
**Distribution of Food Processing Shipments and Number of Establishments by Employee Size, 2001**




Source: Statistics Canada.

- **Most of the large establishments are owned by firms that are international in their scale of operation.**

  Canadian companies rank among these global manufacturers.

  **About three-quarters of total food processing shipments are destined for Canadian consumers and the rest is exported.** In 2002, Canadian processed products were exported to 170 countries, with 87% of the total going to three major markets – the U.S. (76%), Japan (9%) and Mexico (2%).

**Chart B3.7**
**Top Global Food Manufacturers, 2003**

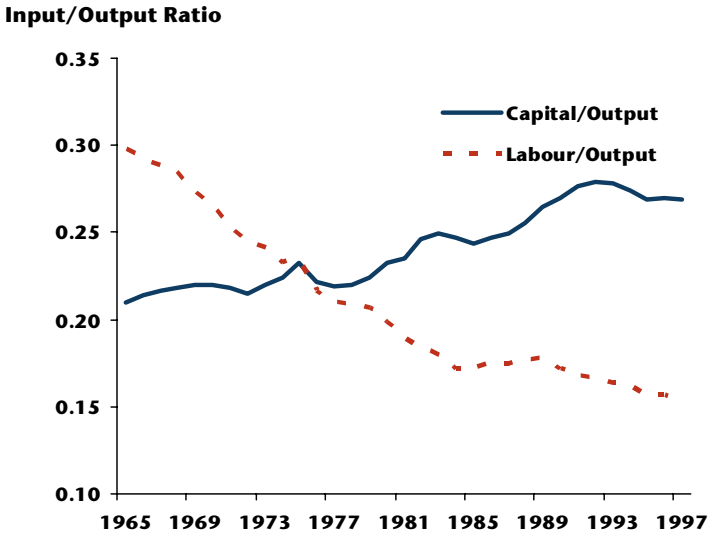
| Rank | Company | Headquarters | Global Sales (Billions US$) |
|---|---|---|---|
| 1 | Nestlé | Switzerland | 54.2 |
| 2 | Kraft Foods | U.S. | 29.7 |
| 3 | Unilever | England/ Netherlands | 25.7 |
| 4 | PepsiCo | U.S. | 25.1 |
| 5 | Archer Daniel Midland | U.S. | 23.5 |
| 46 | McCain Food Ltd. | Canada | 4.6 |
| 68 | Maple Leaf Foods | Canada | 3.2 |
| 72 | George Weston Ltd. | Canada | 3.0 |
| 93 | Saputo | Canada | 2.2 |

Source: Food Engineering, November 2003.

# Food processing has become more capital intensive over time

- **Since the 1960's food processing technology has been characterized by increasing capital and declining labour inputs.**

**Chart B3.8**
**Capital/Output and Labour/Output Ratio for Food Processing, 1965-1997**




Source: Bernstein and Cahill, forthcoming 2004.

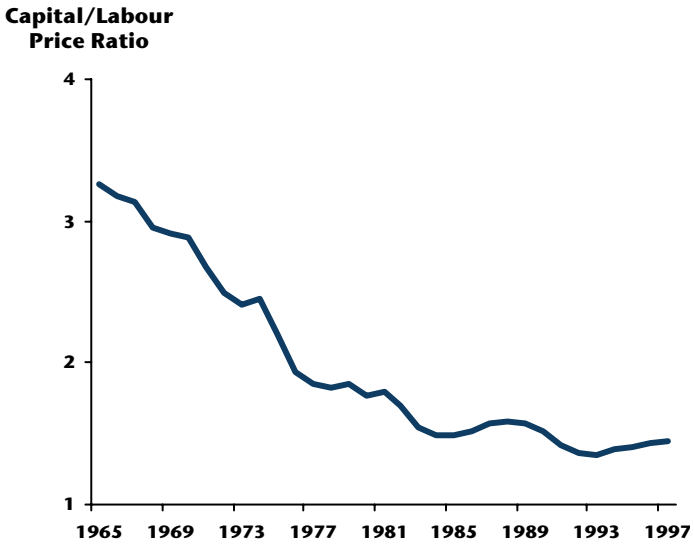
- **The falling cost of purchasing capital relative to the cost of hiring labour is a partial explanation for this trend.**

  The price of capital relative to that of labour decreased more or less consistently up to the mid 1980's. Since then this price ratio has been somewhat stabilized .

  The capital/labour price ratio takes into account the effect of various factors such as the corporate income tax rate (shown in Chart C1.8), capital cost allowances and local taxes.

  Research is showing that public infrastructure investment has also contributed to the rising capital usage in food processing[15].

**Chart B3.9**
**Relative Price of Capital versus Labour Input in Food Processing, 1965-1997**



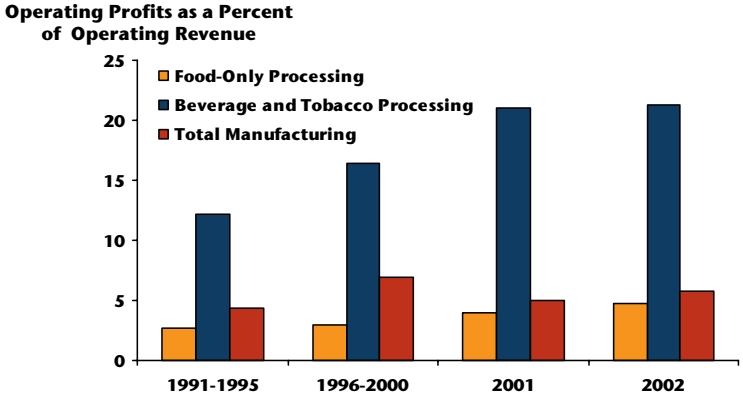

Source: Bernstein and Cahill, forthcoming 2004.

# Food processing has higher rates of return than manufacturing in general

- **Over time, beverage and tobacco processing has had substantially higher profit margin ratios than general manufacturing,** while food-only 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 B3.10**
**Profit Margin Ratio of Selected Industries, 1991-2002**

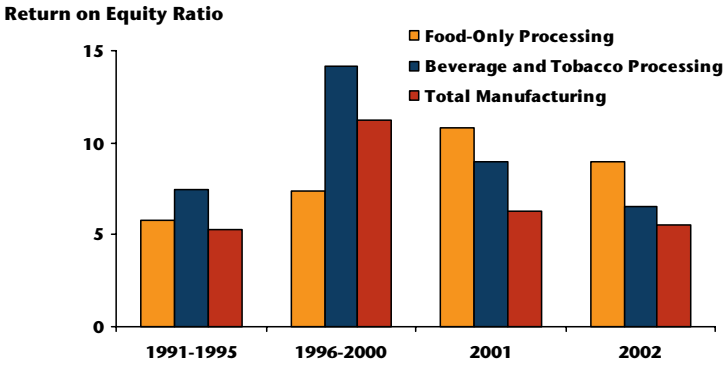



Source: Statistics Canada.
Note: See glossary for definition of the profit margin ratio.

- **Starting in 1999, food-only processing has had a higher return on equity ratio than beverage processing and general manufacturing.**

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

**Chart B3.11**
**Return on Equity Ratio of Selected Industries, 1991-2002**

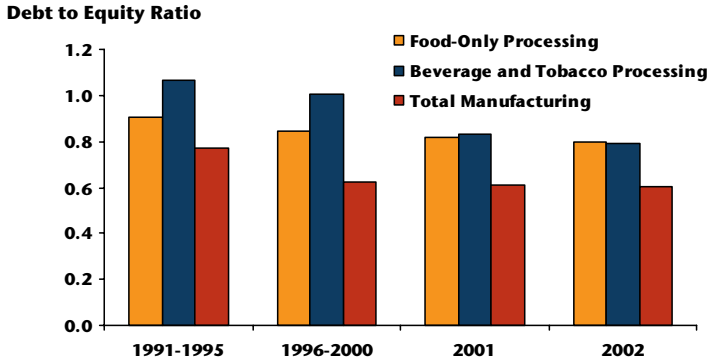



Source: Statistics Canada.
Note: See glossary for definition of the return on equity ratio.

- **Food 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 B3.12**
**Debt to Equity Ratio of Selected Industries, 1991-2002**




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

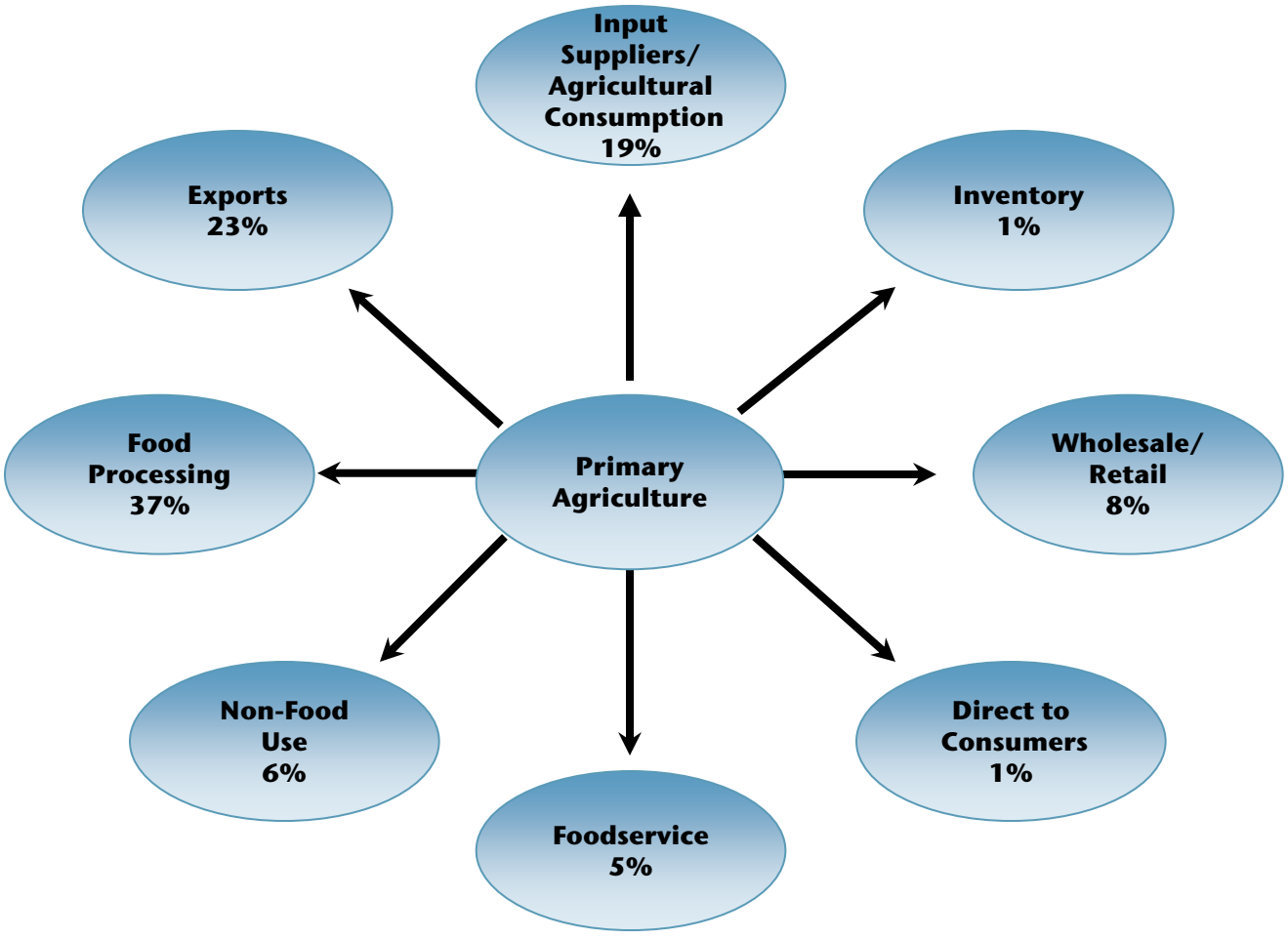
# Primary Agriculture

B4

# Agricultural producers have direct links to all the stages in the value chain

- Agricultural producers have many alternative marketing choices. In 1999, 23% of farm production was exported directly, 37% went to food processing (some of which was also exported), 13% to food distribution and another 19% was consumed within primary agriculture. Only 1% of farm produce went directly to consumers.

**Chart B4.1 Disposition of the Value of Agricultural Production, 1999**



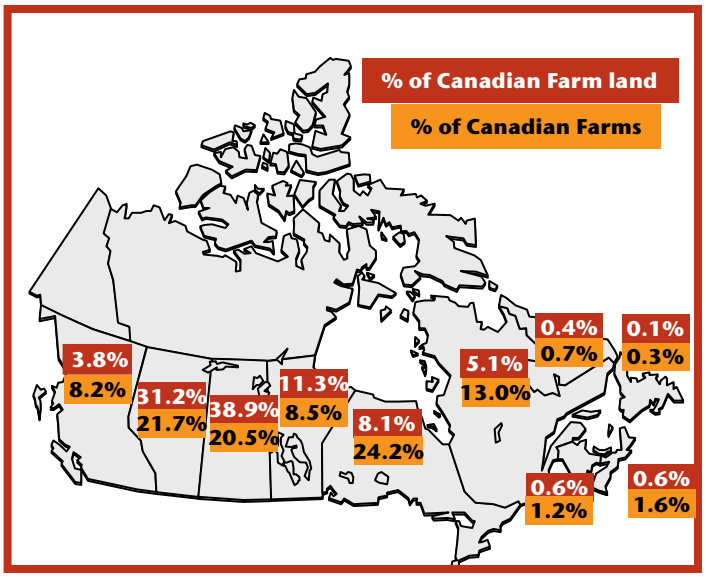

Source: Statistics Canada and AAFC calculations.

# Production occurs across Canada and is very diverse across regions

- **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 farm land. 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 farm typology group.**

  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 | 892 | 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 |

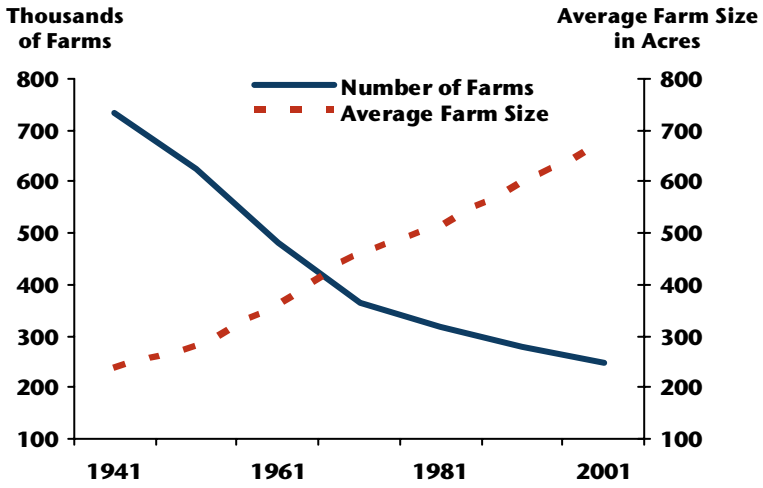
Source: Statistics Canada.

Note: Farm operators are those who are involved in the day-to-day operation of the farm. 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**

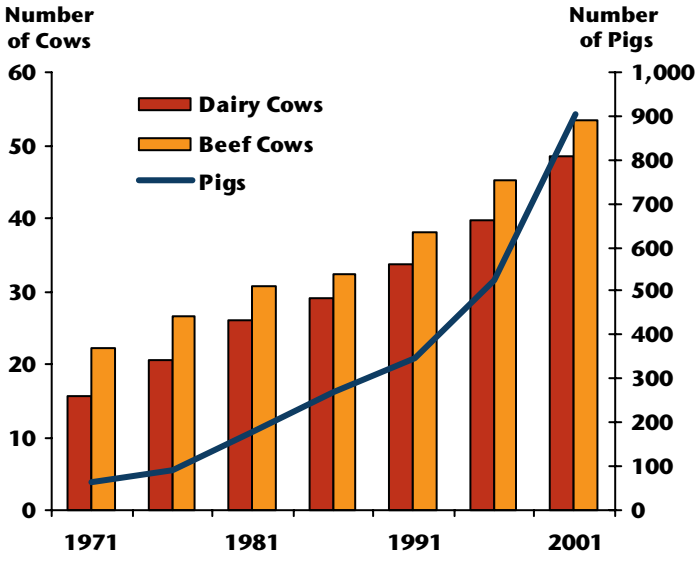



Source: Statistics Canada.

- **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 by more than tenfold.

**Chart B4.5**
**Average Herd Size, 1971-2001**




Source: Statistics Canada and AAFC calculations.

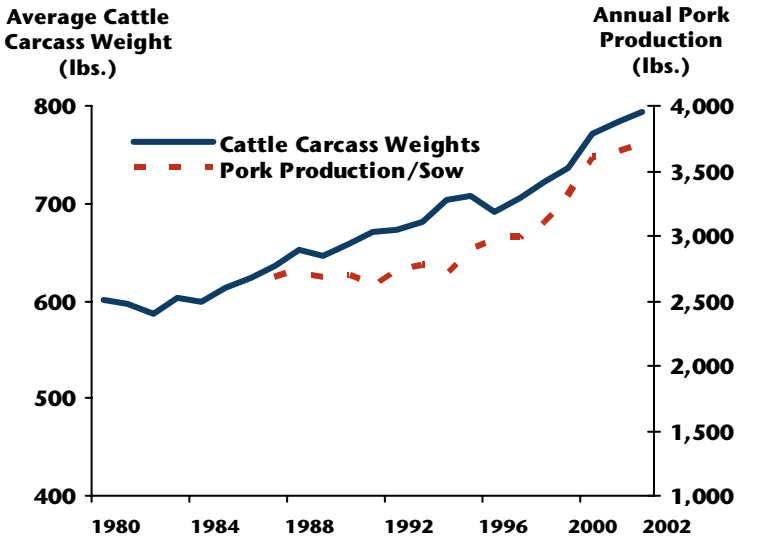
# Technological change and improved management are leading to higher yields

- **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 32%.

  Larger litter sizes have resulted in a 36% increase in pork production per sow since 1990.

**Chart B4.6**
**Livestock Yields, 1980-2002**



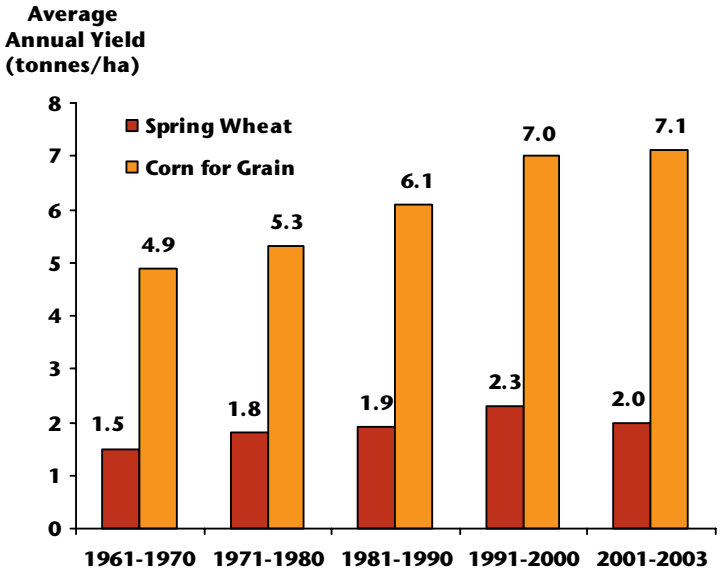

Source: Canadian Beef Grading Agency for cattle carcass weights and Statistics Canada for pork production per sow.

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

**Chart B4.7**
**Spring Wheat and Corn Yields, 1961-2003**



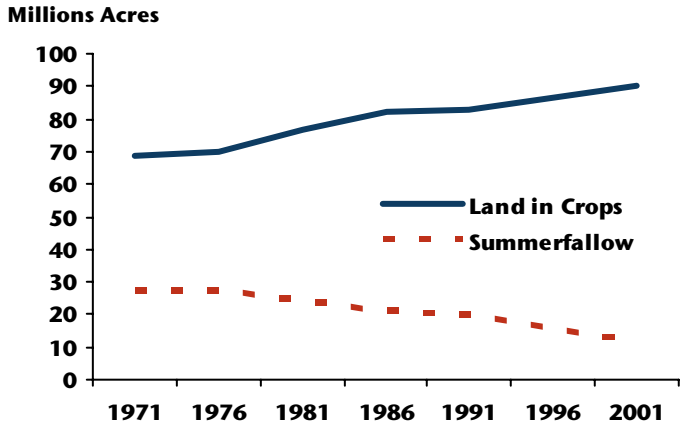

Source: Statistics Canada.

# Improved management technologies are reducing the need for summerfallow

- **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**



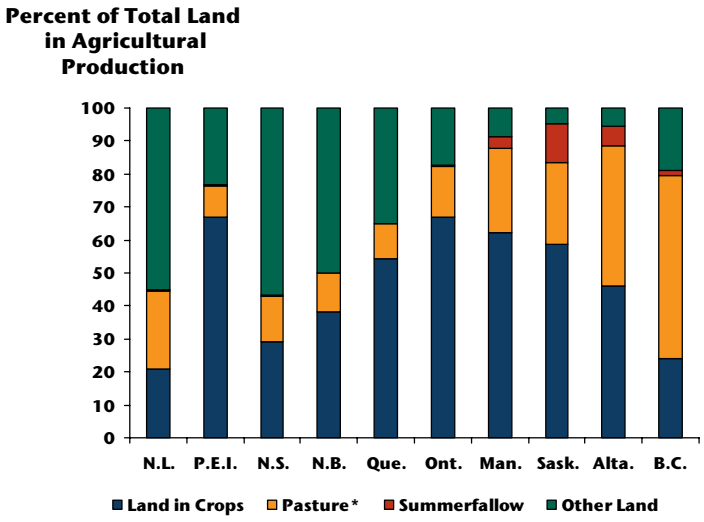

Source: Statistics Canada.

- **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 farm land.

**Chart B4.9**
**Land Use, 2001**



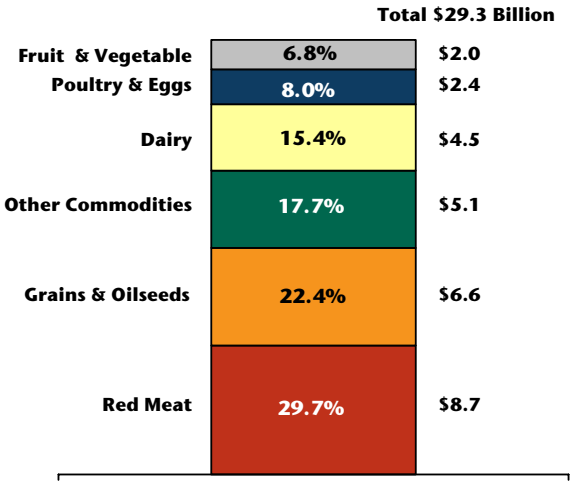

Source: Statistics Canada.

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 2003, 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, 2003**




Source: Statistics Canada.

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

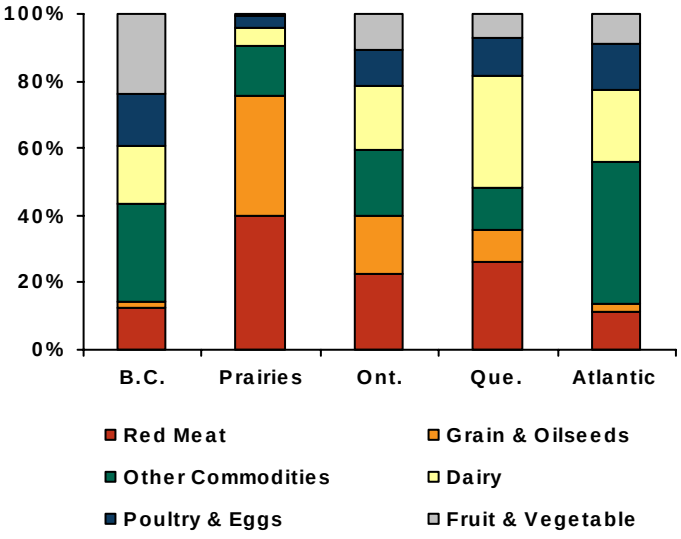
  In British Columbia, market receipts are balanced across a range of commodities, but the most important are fruits and vegetables and floriculture and nursery.

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

  Red meats also usually dominate in Ontario and Quebec along with dairy market receipts.

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

**Chart B4.11**
**Regional Farm Market Receipts by Commodity Share, 2003**




Source: Statistics Canada.

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

- **In 2001, co-operatives marketed more than $11 billion of Canadian agricultural products.**

  Co-operatives are used by farmers to market their product collectively. Close to 400 agricultural marketing and/or processing co-operatives are incorporated in Canada, representing more than 150,000 memberships and more than 31,000 employees.

  Co-operative marketing revenues have decreased in recent years as a result of the loss of the dairy processing function of Agrifoods International and the demutualization of Agricore, a grain handling co-operative.

  Close to half of total grain and oilseed production, dairy production and poultry and egg production in 2001 was marketed through co-operatives.

**Chart B4.12**
**Farm Production Sales by Co-operatives, 2001**

| Rank | Co-operative Sales (Millions $) | Co-operatives' Market Share (%) |
|---|---|---|
| Grains and Oilseeds | 4,217 | 45 |
| Dairy | 3,172 | 42 |
| Cattle and Hogs | 1,998 | 14 |
| Poultry and Eggs | 1,390 | 49 |
| Fruit and Vegetables | 197 | 8 |
| Honey and Maple | 77 | 28 |
| **Total** | **11,051** | |

Source: Co-operatives Secretariat and Statistics Canada.
Note: Market share is calculated at the farm gate level.

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

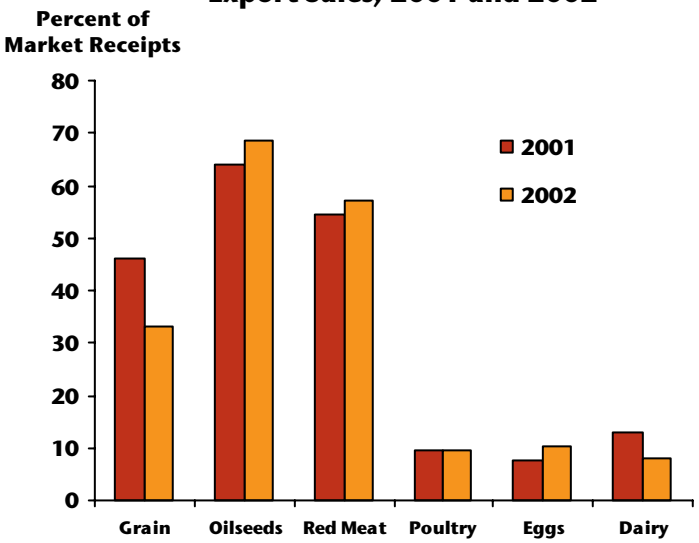
- **Grain and oilseed producers have always been very export-dependent.**

  In 2001 grain producers earned around half of their cash receipts from the export market, but in 2002 this share was down to 33%. The drop in the export share of grain cash receipts was due to reduced supplies available for export because of the drought.

  **The export dependency of red meat producers nearly doubled over the last decade.**

  **The new WTO ruling on Commercial Export Milk (CEM) has begun to affect dairy exports,** with the export dependency in 2002 dropping to 8% from 13% in 2001.

**Chart B4.13**
**Portion of Farm Market Receipts from Export Sales, 2001 and 2002**

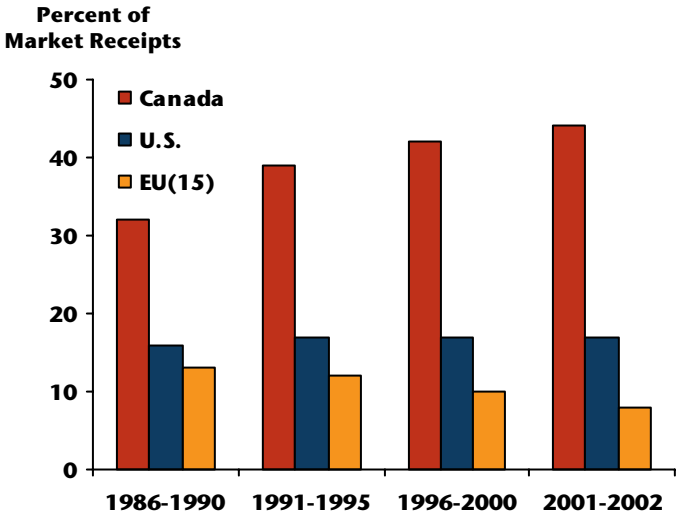



Source: Statistics Canada and AAFC calculations.

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), 1986-2002**




Source: Statistics Canada, OECD and AAFC calculations.

Note: Export dependencies are 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 farm production and 75% of Canada's total farm production.

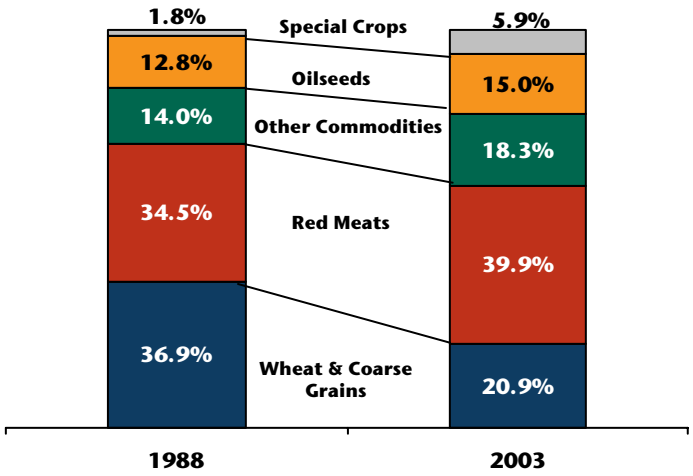
# Producers are diversifying production mix

- **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 2003, with a corresponding rise in the shares of red meats and special crops.

  Among other factors, diversification has been encouraged by declining grain prices and domestic policy reforms such as the elimination of the Western Grain Transportation Act in 1995.

**Chart B4.15**
**Evolution of Prairie Farm Market Receipts by Commodity, 1988 and 2003**

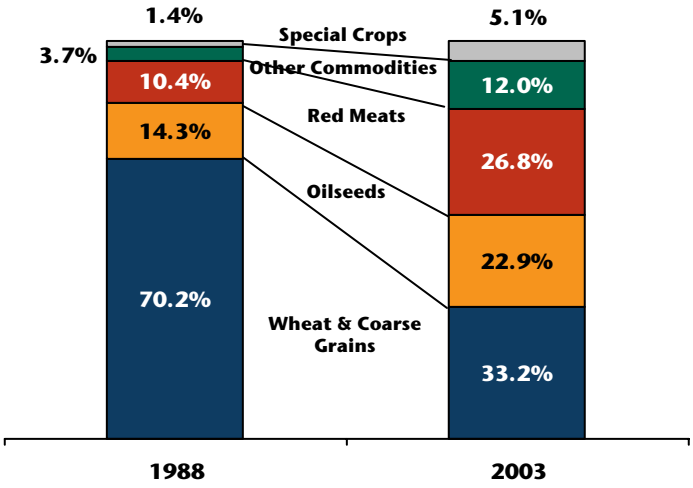



Source: Statistics Canada and AAFC calculations.

- **Expressed 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, especially considering the very difficult year that the beef sector has had due to BSE.

**Chart B4.16**
**Evolution of Prairie Exports by Commodity, 1988 and 2003**




Source: Statistics Canada and AAFC calculations.

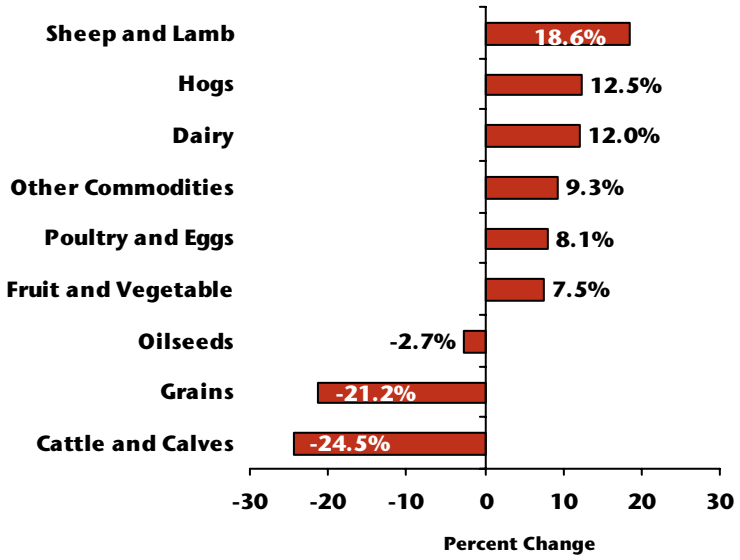
# Farm market receipts in 2003 are down sharply

- **Farm market receipts in 2003 were down by $3.2 billion relative to 2002, but were still above values received in the late 1990's.**

  The sharp decline in market receipts reflects the loss of the export market for ruminants and their meat products (see Charts A2.8 and A2.9), the impact of the Prairie drought on grain and oilseed marketings and the stronger Canadian dollar.

  Relative to the previous five year average, receipts for cattle and calves were down by 25%, for grain by 21% and for oilseed by 3%.

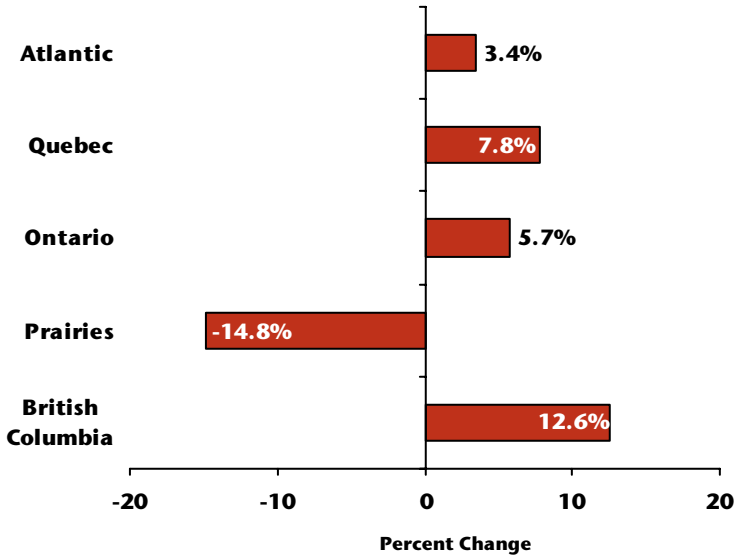
**Chart B4.17**
**Farm Market Receipts by Commodity 2003**
**Relative to Five Year Average**




Source: Statistics Canada.

- On a regional basis, the Prairies have been the hardest hit due to their commodity make-up, with total market receipts 15% below the five year average.

**Chart B4.18**
**Regional Farm Market Receipts, 2003**
**Relative to Five Year Average**




Source: Statistics Canada.

# Program payments are helping to cover market losses in 2003

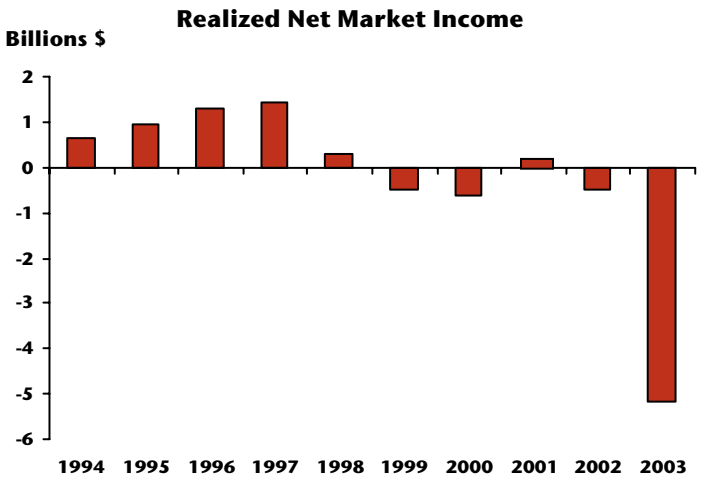
- **Realized net market income is expected to show a large loss in 2003** in line with the sharp drop in market receipts due to the special factors mentioned earlier.

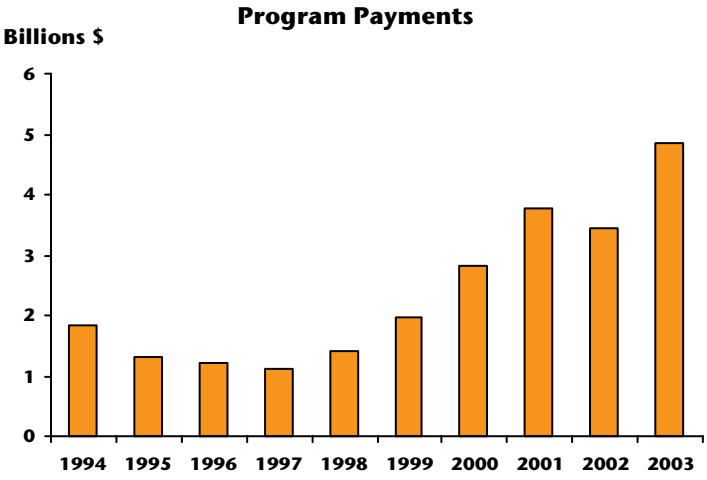
- Forecast increases in program payments are expected to offset most of this loss. Payments in 2003 are projected to reach an all-time high of $4.9 billion.

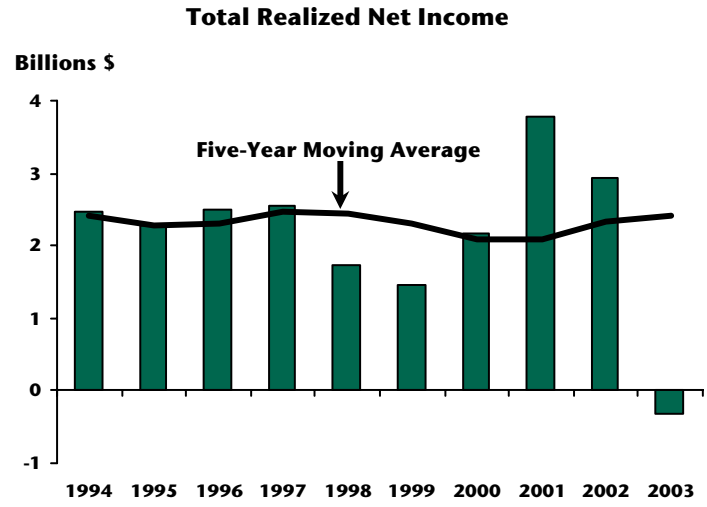
- **The total realized net income for primary agriculture as a whole is expected to be close to zero this year.**

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

**Chart B4.19**
**Total Realized Net Farm Income, 1994-2003**




Source: Statistics Canada and AAFC.

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

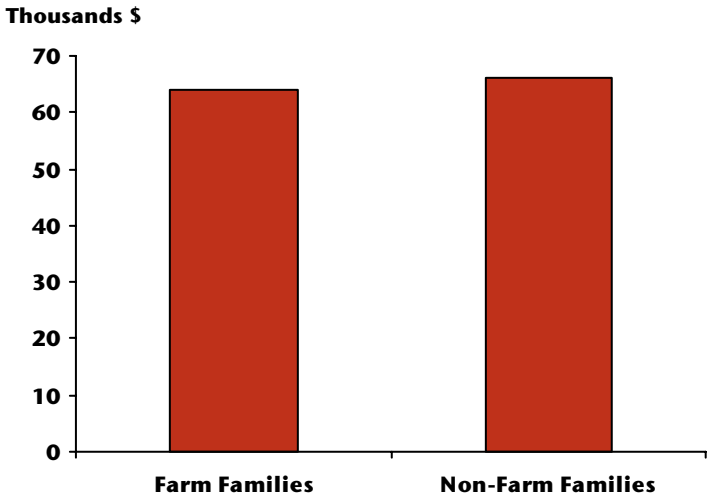
- **In most years, average farm family income is comparable to the average income received by non-farm families.**

  In 2000, the average total income from all sources for a farm family was $64,160 compared to $66,263 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 B4.20**
**Average Family Income, 2000**

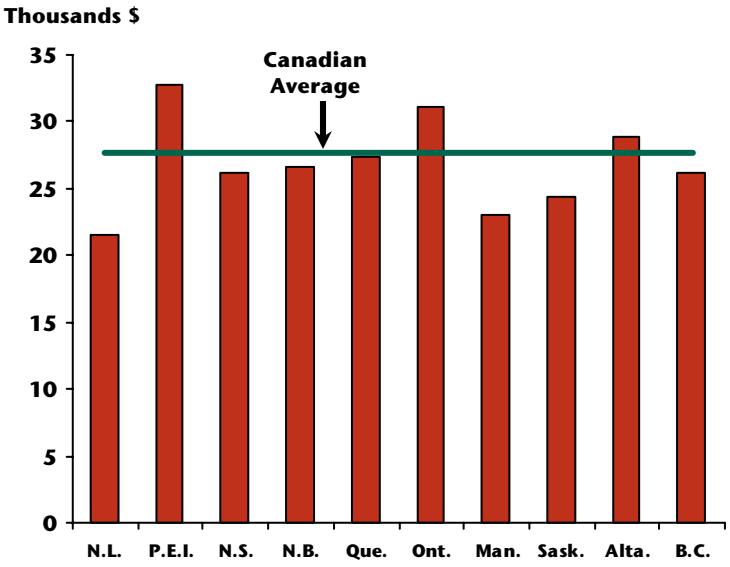



Source: Statistics Canada.

- **In 2000, the average income from all sources for farmers was $27,600.**

  Farmers in Prince Edward Island, Ontario and Alberta, on average, earned incomes above this average.

**Chart B4.21**
**Total Income from all Sources Received by Farmers and Farm Managers, 2000**




Source: Statistics Canada.

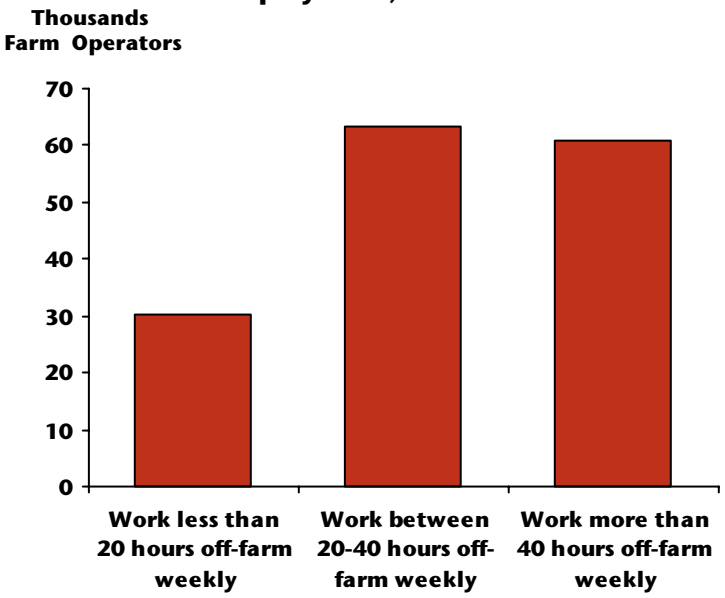
# Off-farm income accounts for a significant amount of farm family income

- **In 2000 net farm income, on average, contributed only 18¢ of each dollar earned in total family income[16].**

  Small and medium-sized farm operators 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.

  Even operators on farms with sales greater than $1 million earn about one-half of their family income off the farm.

**Chart B4.22**
**Number of Farm Operators in Off-Farm Employment, 2000**




Source: Statistics Canada.

- **Nearly 45% of all farm operators earned some portion of their income from off-farm work in 2000.**

  British Columbia has the largest proportion of farm operators working off-farm at 53%, followed by Newfoundland and Labrador at 50%.

  A considerably smaller proportion of Quebec farmers worked off-farm in 2000 than in other provinces.

**Chart B4.23**
**Percent of Farm Operators in Off-Farm Employment, 2000**

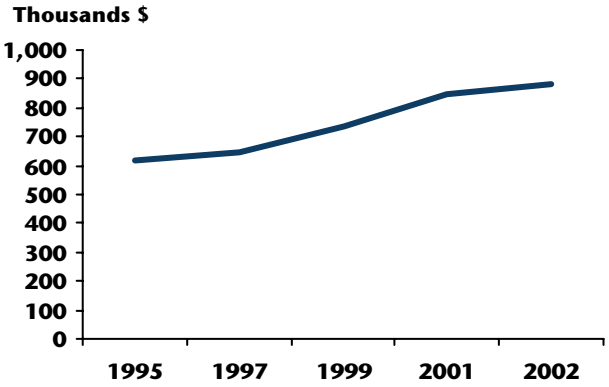
| Rank | % of total farm operators who work less than 20 hours off-farm weekly | % of total farm operators who work between 20-40 hours off-farm weekly | % of total farm operators who work more than 40 hours off-farm weekly |
|---|---|---|---|
| N.L. | 9.0 | 19.9 | 21.2 |
| P.E.I. | 7.9 | 19.3 | 15.7 |
| N.S. | 8.9 | 19.4 | 20.1 |
| N.B. | 7.1 | 19.8 | 21.3 |
| Que. | 5.3 | 14.3 | 10.7 |
| Ont. | 7.9 | 17.9 | 19.6 |
| Man. | 10.7 | 19.0 | 16.0 |
| Sask. | 9.3 | 17.5 | 16.5 |
| Alta. | 9.7 | 19.4 | 20.1 |
| B.C. | 10.4 | 23.0 | 19.3 |

Source: Statistics Canada.

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

- **Average farm total net worth is increasing over time.** In 2002 the average farm's total net worth was $882 thousand, up 4.5% from 2001.

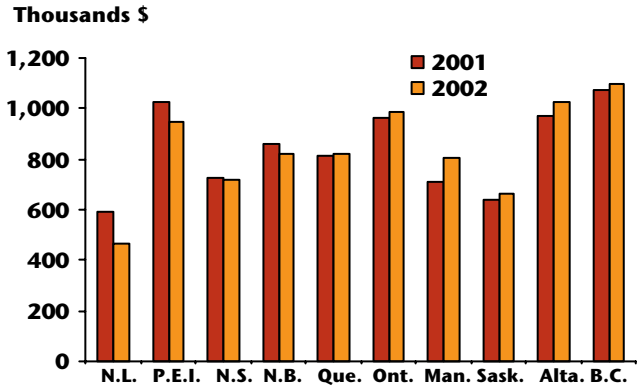
**Chart B4.24**
**Average Farm Total Net Worth, 1995-2002**




Source: Statistics Canada and AAFC.

- All provinces except for the Atlantic region showed an increase in their average farm total net worth between 2001 and 2002.

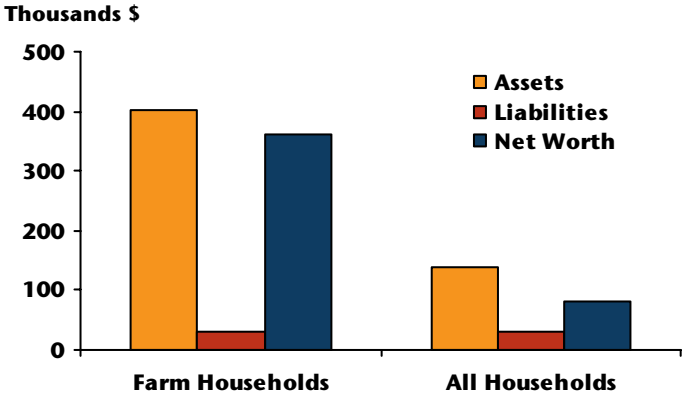
**Chart B4.25**
**Average Farm Total Net Worth by Province, 2001 and 2002**




Source: Statistics Canada and AAFC.

- **Farm households have considerably more net worth than average Canadian households.** This is because farm families put much of their income back into farm assets.

**Chart B4.26**
**Median Net Worth, Canadian Households and Farm Households, 1999**



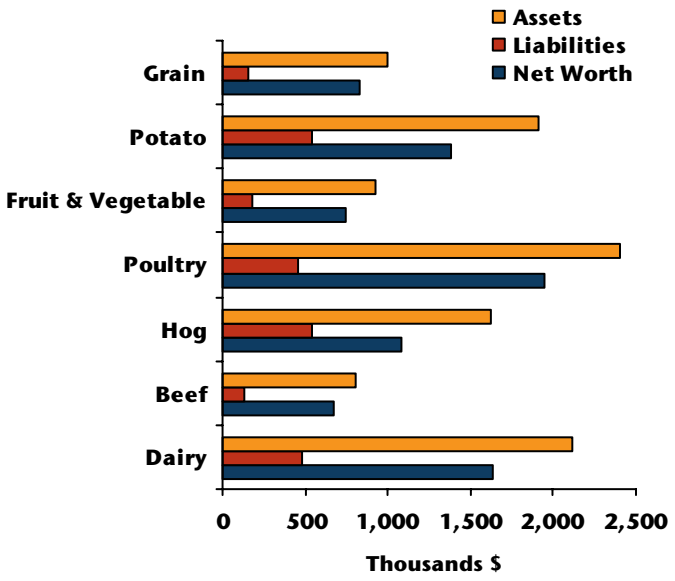

Source: Statistics Canada.

# Farm net worth varies across industries

- **On average poultry, dairy and potato farms have the highest net worth** (around $1.6 million in 2002).

  Potatoes and hog farms carry the largest debts (around $530,000 per farm) followed by poultry and dairy (around $460,000 per farm).

**Chart B4.27**
**Average Assets, Liabilities and Net Worth by Farm Type, 2002**

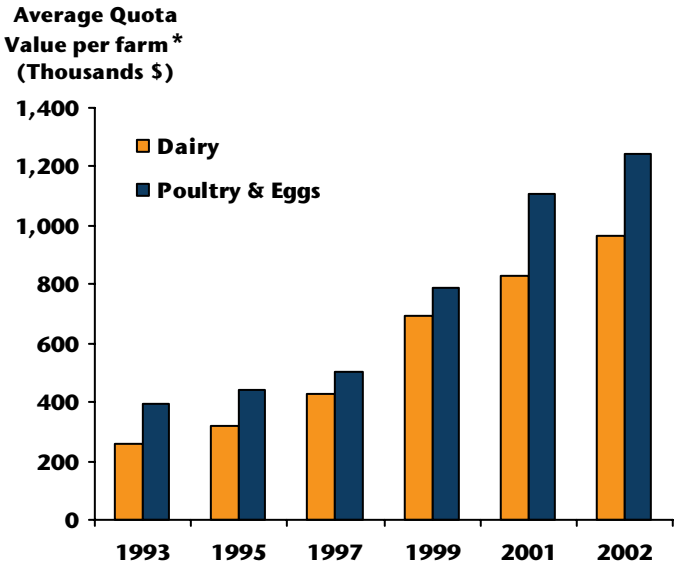



Source: AAFC.

- **Quota values in the supply managed industries have grown significantly in recent years.** They now account for a substantial proportion of the total assets of these types of farms.

  In 2002 the average dairy farm had around $1 million worth of quota, and the average poultry farm around $1.2 million, accounting for 46% and 52% of total farm assets, respectively.

**Chart B4.28**
**Average Quota Value for Supply Managed Farms, 1993-2002**




Source: Statistics Canada and AAFC.
Note: *Market Value.

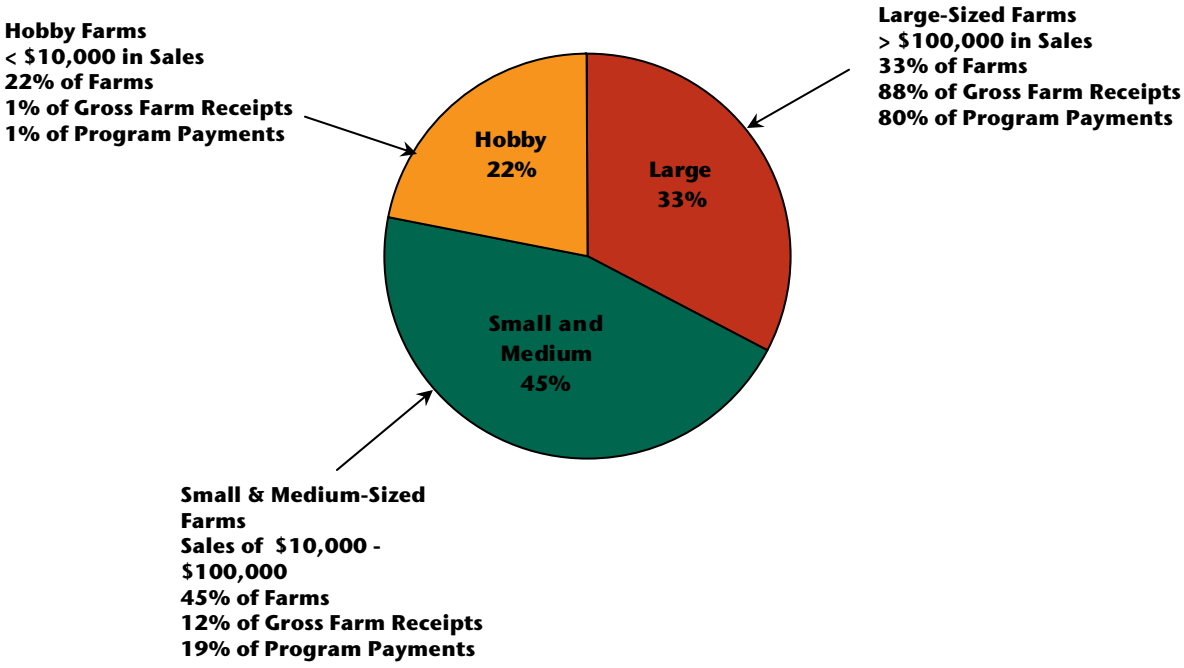
# Large-sized farms account for the vast majority of production

- **While only one-third of census farms are large-sized (sales over $100,000), 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 other 20% of program payments.

  Hobby farms represent the remaining one-fifth of farms. Hobby farming is a lifestyle choice and makes no significant contribution to family income. All farms earning less than $10,000 in sales are classified as hobby farms. There are 54,000 hobby farms in Canada.

**Chart B4.29**
**Distribution of Canada's 247,000 Farms by Gross Farm Receipts, 2001**

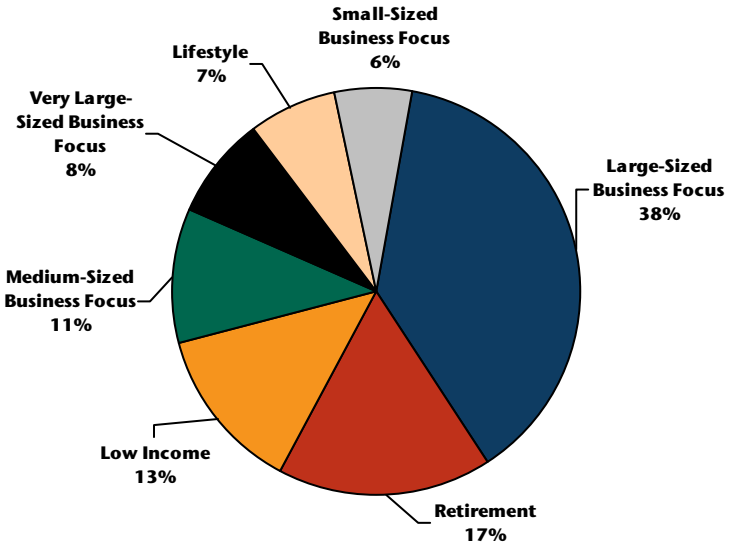



Source: Statistics Canada.

# Different people farm for different reasons

- **Farms, excluding hobby, can also be classified based on the age, business motivation and financial situation of the farm operators.**
  - One-quarter of farms are retirement and lifestyle farms.
  - Another 13% are low income farms, that have a total income less than $30,000.
  - The remaining farms are business-focused, and can be further categorized according to their scale of operation, ranging from small-sized to very large-sized farms.

**Chart B4.30**
**Distribution of Farms with $10,000 in Gross Farm Receipts or more by Typology Group, 2001**




Source: Statistics Canada and AAFC.
Note: This classification excludes hobby farms.

**Farm Typology Groups**

**Retirement - farms managed by an operator 60 years of age or older**

**Lifestyle – small-sized farms managed by families with off-farm income greater than $50,000**

**Low -income - small and medium-sized farms managed by families with total income less than $30,000**

**Business-focussed - all other family farms**

- **Small-sized - revenues of $10,000 - $49,999**
- **Medium-sized - revenues of $50,000 - $99,999**
- **Large-sized - revenues of $100,000 - $499,999**
- **Very Large-sized - revenues of $500,000 and over**

**Non Family Farms - Hutterite Colonies, other commercial operations, non-family corporations, and co-operatives**

# 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.

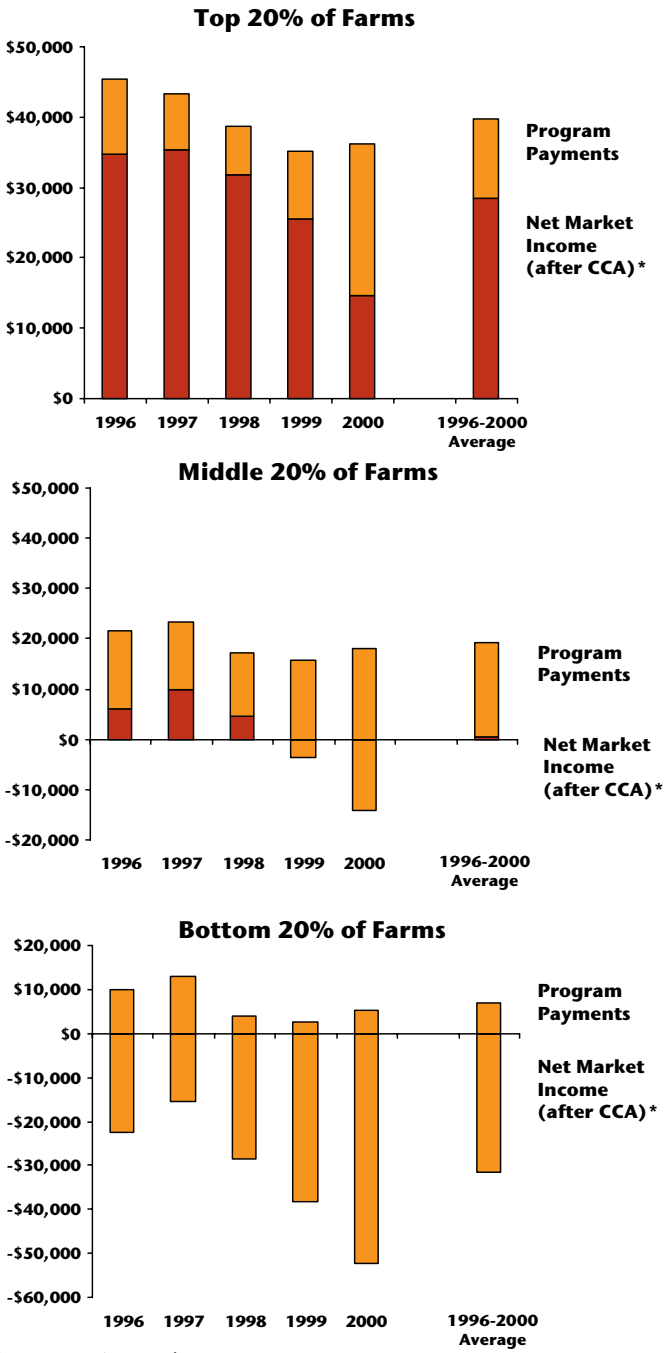
The trends are as follows:

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

The middle group are sometimes profitable, but, on average, have little net market income.

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

**Chart B4.31**
**Net Income of Large Canadian Grain and Oilseed Farms, 1996-2000**




Source: NISA Database.

Note: *CCA - Capital Cost Allowance.

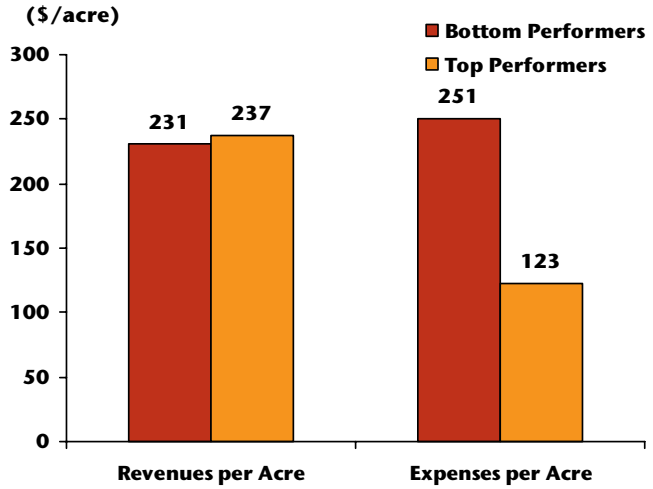
Farms were ranked according to their average net income over the five year period. The three samples on which the chart analysis is based were drawn from this average ranking. Data for the individual producers in each sample were then collated for each of the five years.

# Better cost control is a key difference between top and bottom performers

- **Top managers control many major expenses better than poor performers.**

  Expenses per acre are significantly different between top and bottom performers, while revenues per acre are similar.

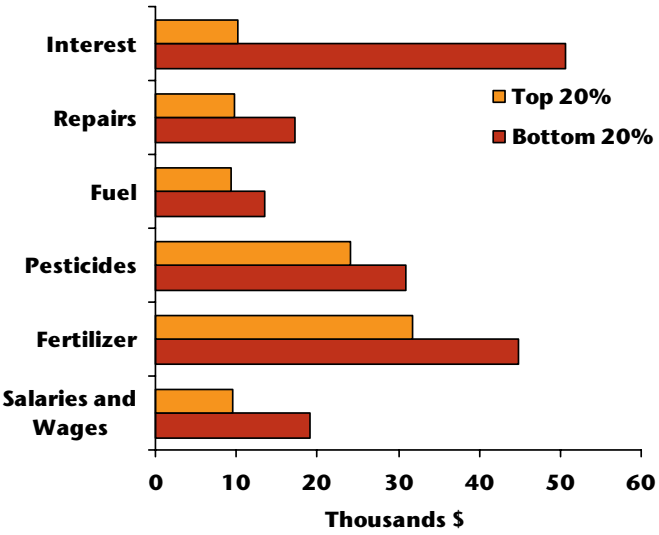
**Chart B4.32**
**Revenues and Expenses for Large Business-Focussed Grain and Oilseed Farms, 1999**




Source: NISA Database and AAFC calculations.
Note: Top and bottom performers are top and bottom 20% respectively.

- For example, top performers on large-sized grain and oilseed farms in Manitoba have, on average, lower interest charges and lower expenditures on inputs such as fertilizer, pesticides and fuel.

**Chart B4.33**
**Selected Average Expenses of Manitoba Large-Sized Grain and Oilseed Farms, 1996-2000**



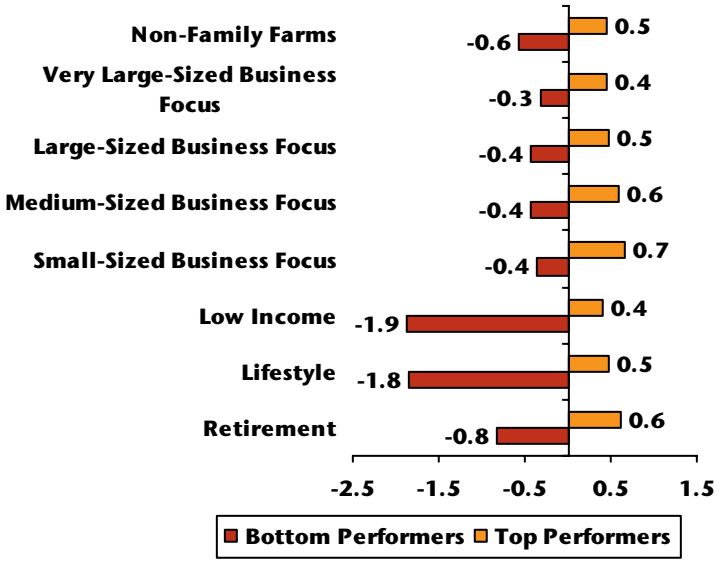

Source: NISA Database and AAFC calculations.
Note: Top and bottom performers are top and bottom 20% respectively.

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

- **Financial performance depends upon a combination of factors, and these factors differ according to a farm's particular situation.** Factors contributing to performance include good production and management practices, cost control, marketing strategy and an openness to continuous learning.

  **Farm size is not a limiting factor in financial performance.** Top performers operating small-sized farms can generate a gross margin ratio comparable to top performers operating large-sized farms.

**Chart B4.34**
**Gross Margin Ratios Reported by Top and Bottom Performers by Typology, 2001**




Source: Statistics Canada and AAFC calculations.

Note: 1) Gross margin ratios are calculated as the ratio of the farm's gross margin to market revenue

2) Top and bottom performers are top and bottom 20%, respectively.

# Agricultural Input and Service Suppliers

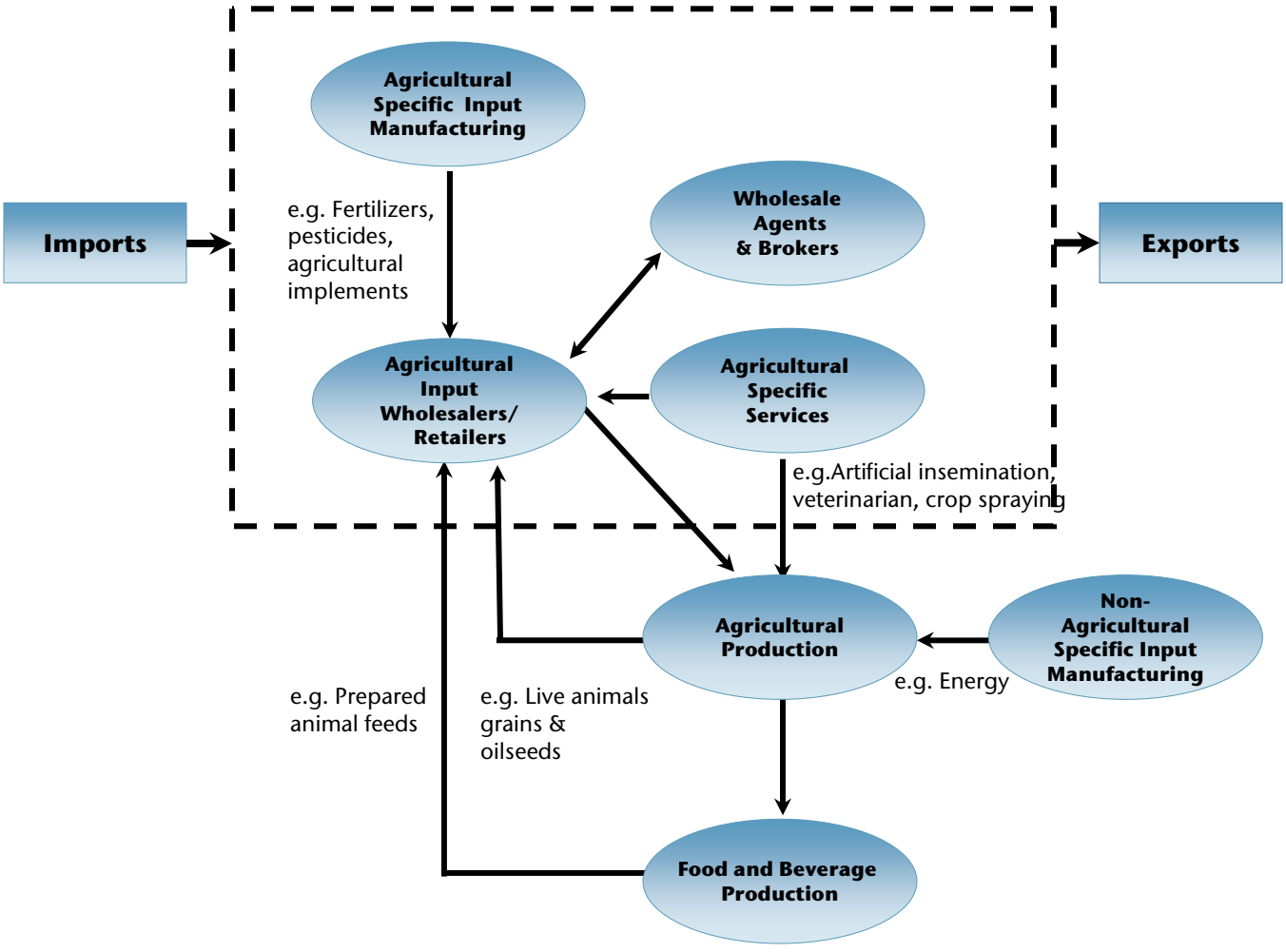
B5

# Input suppliers are a whole value chain

- **Agricultural-specific input and service suppliers constitute a whole value chain within the agriculture and agri-food system that includes 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).

  Agricultural-specific input and service suppliers are heterogeneous ranging 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 Agricultural-Specific Input and Service Suppliers**

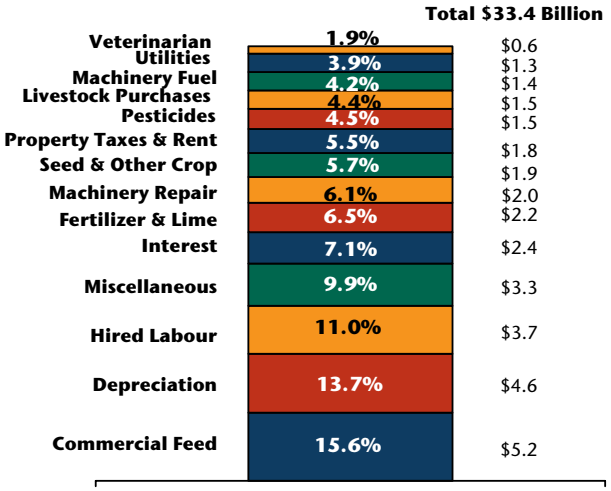


# Rising input costs reflect high input demand and significant changes in quality

- **In 2002 agricultural producers spent nearly $29 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 $5.2 billion followed by hired labour at $3.7 billion.

**Chart B5.2**
**Farm Expenses, 2002**

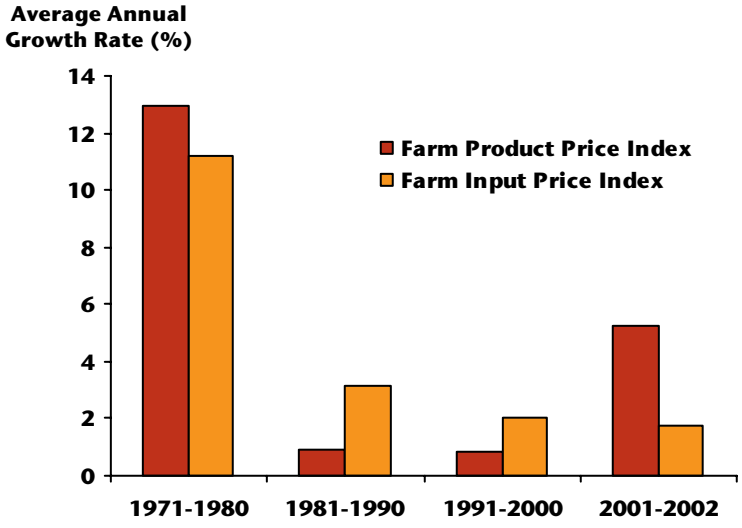



Source: Statistics Canada.

- **Increasing quantities of inputs sold explain more (around 55%) about farm expense increases over time than do increases in input prices.** In fact, the increases in input prices are largely reflections of this rising demand.

  New technologies that require high input usage, input quality improvements and output productivity gains, have all contributed to the high input demand.

**Chart B5.3**
**Farm Input Prices and Farm Product Prices, 1971-2002**




Source: Statistics Canada.

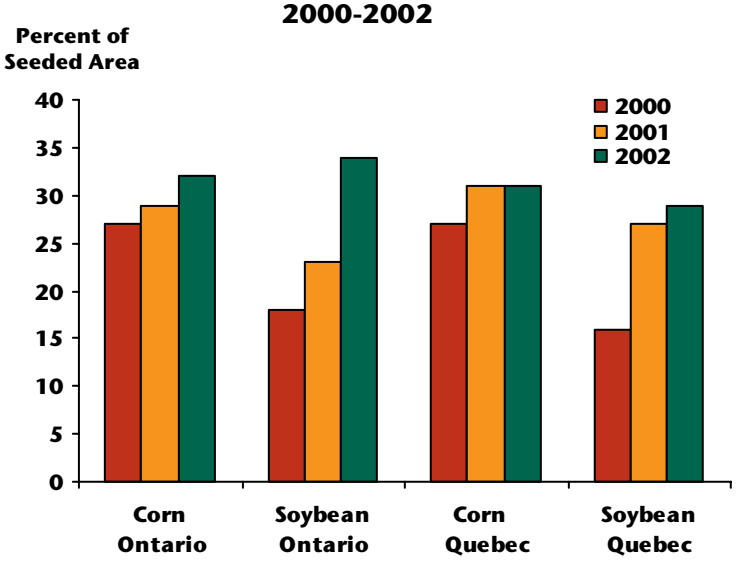
# Diversity in farming practices is creating demand for different kinds of inputs

- **More and more agricultural producers are differentiating their products through the adoption of different farming practices, which is creating demand for different kinds of inputs.**

  For example, genetically modified (GM) seeds with their own built-in pest resistance and weed control capacity are becoming more popular.

  In 2002 around 30% of total corn and soybean seeded areas in Ontario and Quebec was planted with GM crops.

**Chart B5.4**
**GM Seeded Area in Ontario and Quebec, 2000-2002**




Source: Hategekimana and Beaulieu (2002).

- At the same time, demand is growing for organic seed to satisfy the organic market.

  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 nearly tripled.

**Chart B5.5**
**Number of Certified Organic Growers, 1997-2002**

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|
| Number of Certified Producers | 1,830 | 1,939 | 2,321 | 3,108 | 3,236 | 3,120 |
| Number of Farms in Transition | 179 | 229 | 304 | 312 | >277 | >390 |
| Number of Acres in Organic Production | n/a | >404,850 | >455,800 | >839,250 | >1,064,000 | ~1,181,921 |

Source: Canadian Organic Growers, reported in ***Eco-Farm and Garden Magazine***, various issues.

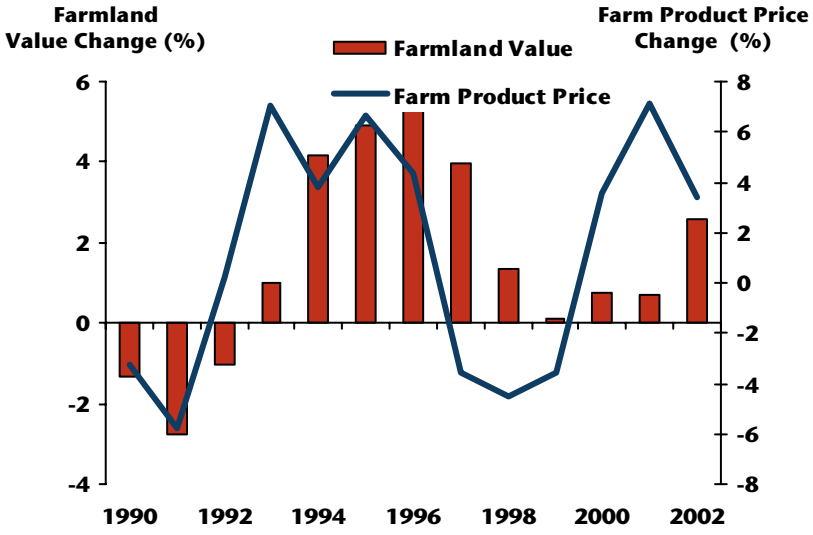
# Farmland value reflects commodity price movements

- **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, 1990-2002**



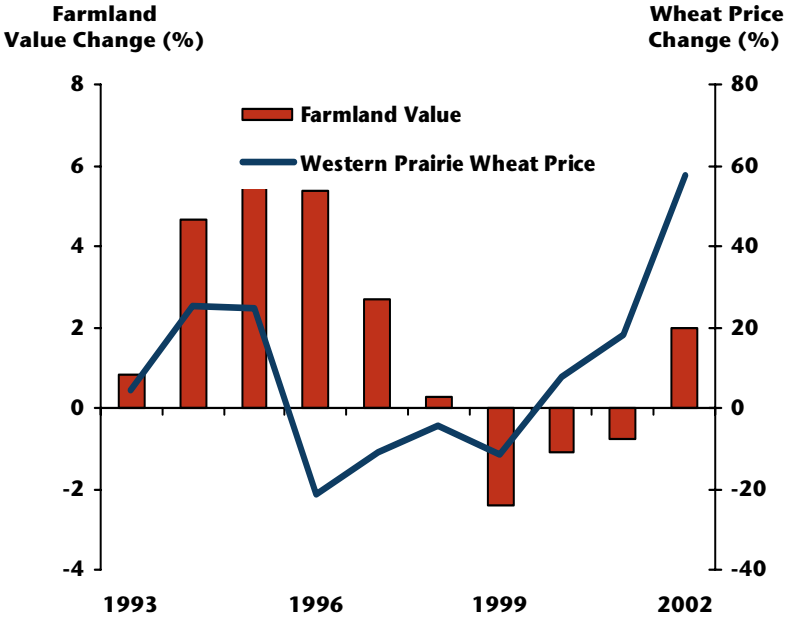

Source: Farm Credit Corporation and Statistics Canada.

- **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.

  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, 1993-2002**




Source: Farm Credit Corporation and Canadian Wheat Board.

# Producers purchase a significant proportion of their inputs through co-operatives

- **Market share for co-operative sales of farm petroleum, fertilizer and chemicals has risen since 1986** primarily due to expanded operations in Western Canada.

  In the same time period, market share for co-operative feed sales has fallen consistently due to slower growth in co-operative sales relative to the industry. Co-operative seed sales have also lost market share as a result of decreased sales in Western Canada.

**Chart B5.8**
**Market Shares of Co-operatives in Farm Supplies, 1986-2001**

| | 1986 | 1991 | 1996 | 2001 |
|---|---|---|---|---|
| | % of Total Farm Expenditures | | | |
| Fertilizers & Chemicals | 31 | 36 | 35 | 41 |
| Farm Petroleum | 22 | 29 | 27 | 32 |
| Seed | 23 | 17 | 17 | 8 |
| Feed | 26 | 25 | 17 | 15 |

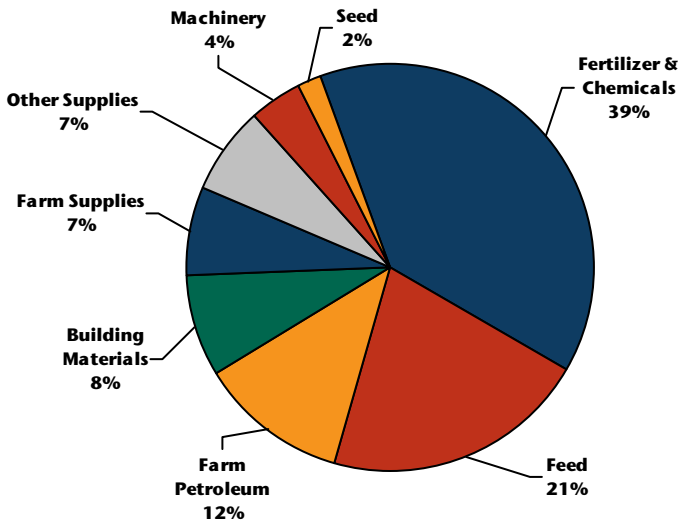
Source: Co-operatives Secretariat and Statistics Canada.

- **Total co-operative supply sales in 2001 were $5.5 billion.**

  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 in farm supplies are businesses owned by farmers that strive to provide high quality and affordable farm supplies for farmers. The surplus generated by these co-operatives are returned to farmer members and thereby increase farm income.

**Chart B5.9**
**Co-operative Supply Sales, 2001**




Source: Co-operatives Secretariat.

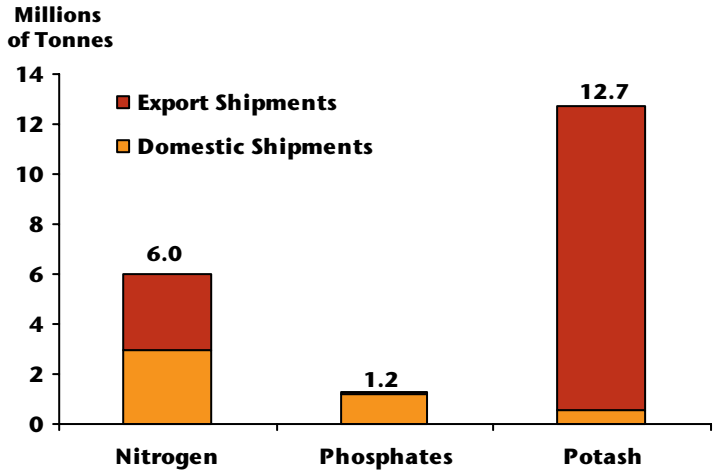
# Canada is a major producer of fertilizers

- **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 one half of its nitrogen products.** Overall fertilizer exports are valued at about $3.5 billion.

**Chart B5.10**
**Fertilizer Shipments and Exports, 2002**

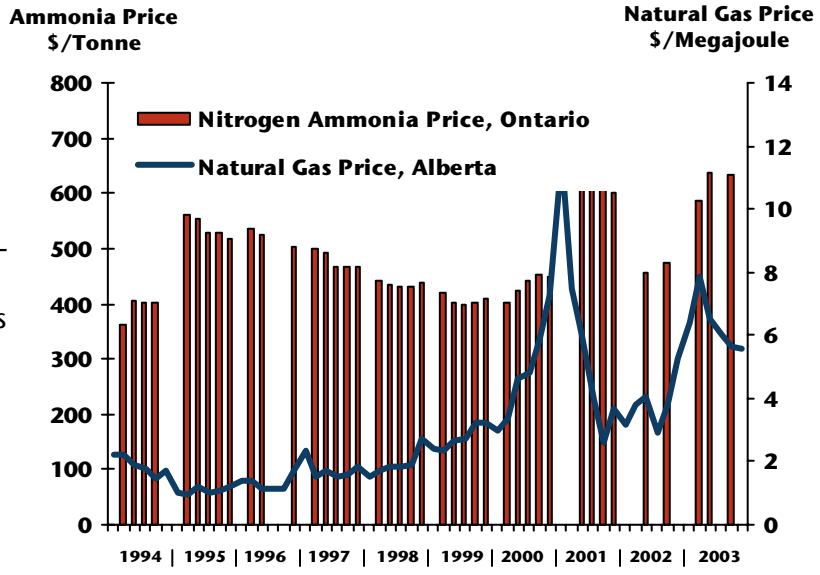



Source: Canadian Fertilizer Institute.

- **The cost of nitrogen fertilizer has followed natural gas prices over the last couple of years.** 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 tight 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 B5.11**
**Nitrogen Ammonia & Natural Gas Prices, 1994-2003, Bimonthly**




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

Section C

# Government and the Agriculture and Agri-Food System

# Government support to the agri-food sector has varied over the last decade

- **Total government expenditures in the 2002-03 fiscal year are estimated at $6.7 billion,** which is comparable to the record levels recorded in the early 1990's. The support is roughly equal in value to 46% of agricultural GDP.

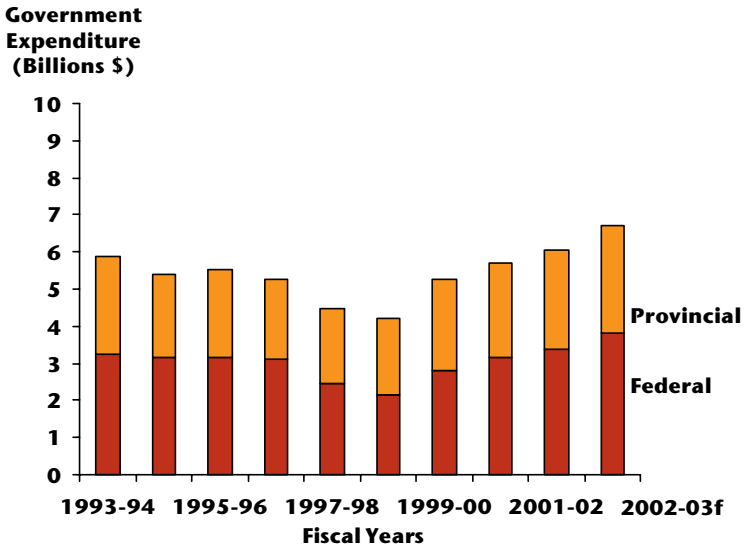
  Total support of the agri-food sector trended down in the early 1990's as a result of budgetary reductions and higher commodity prices. It has been increasing since the 1998-99 fiscal year.

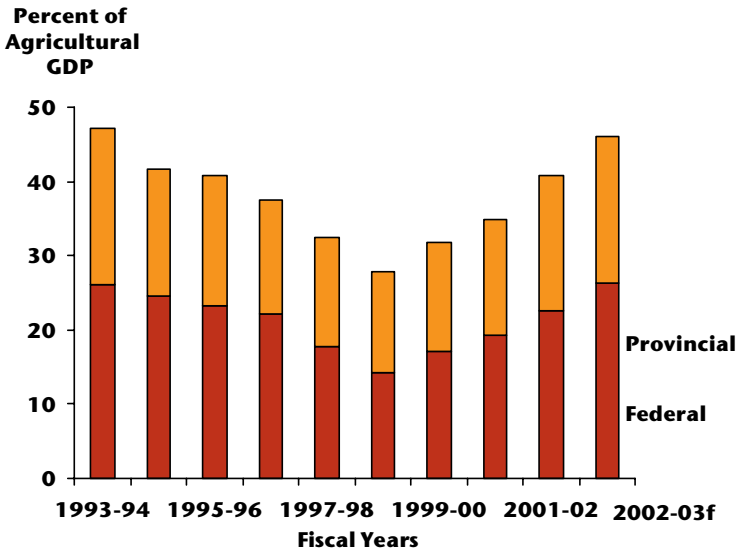
  Support in the 2003-04 fiscal year will reflect new initiatives such as the BSE Recovery Program ($520 million), and the Cull Animal Program ($120 million).

  Support includes expenditures on research and inspection, general administration and management, policy, information and statistical services and program payments.

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

**Chart C1.1**
**Government Expenditure in Support of the Agri-Food Sector,**
**1993-94 – 2002-03 Fiscal Years**




Source: AAFC.
Note: 2002-03 figures are forecasts.

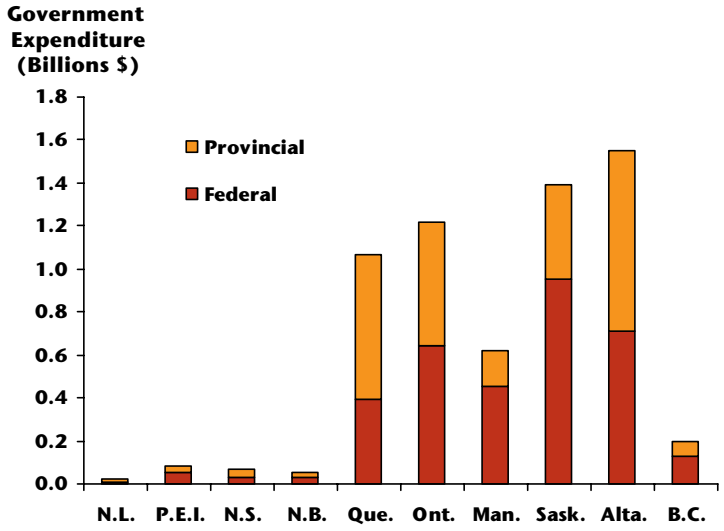
# Government support varies across provinces

- **In the 2002-03 fiscal year the four largest provinces in terms of agricultural GDP—Alberta, Saskatchewan, Ontario and Quebec—received more than $1 billion each in government support.**

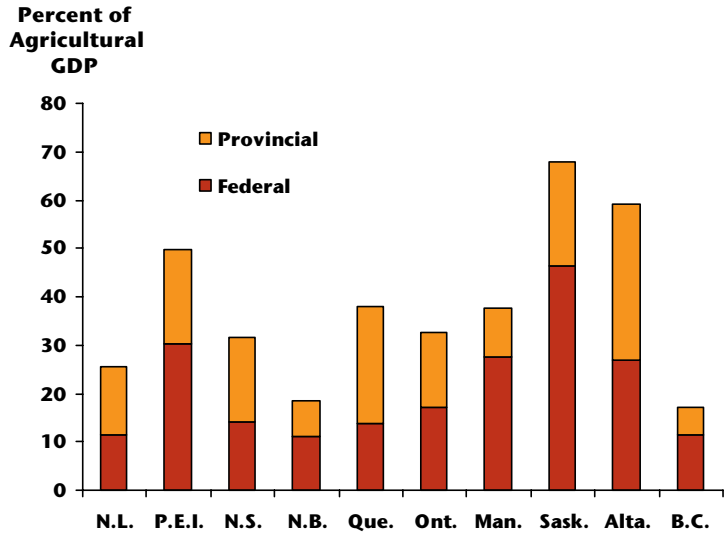
  Agriculture is a shared jurisdiction between federal and provincial governments with both levels of government cooperating in providing significant support to the sector. There is agreement on the federal-provincial funding split for risk management programming. However, the federal and provincial shares of total expenditure vary across provinces because of different provincial program offerings and other types of support.

  In the 2002 fiscal year the federal government provided the greatest share of government support in six provinces: British Columbia, Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island.

**Chart C1.2**
**Government Expenditures in Support of the Agri-Food Sector by Province, 2002-03 Fiscal Year**




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




Source: AAFC.
Note: 2002-03 figures are forecasts.

# Program payments make up a significant portion of government support

- **Program payments make up a significant proportion of federal (49%) and total provincial (46%) government support,** and are estimated at $3.2 billion for fiscal year 2002-03.

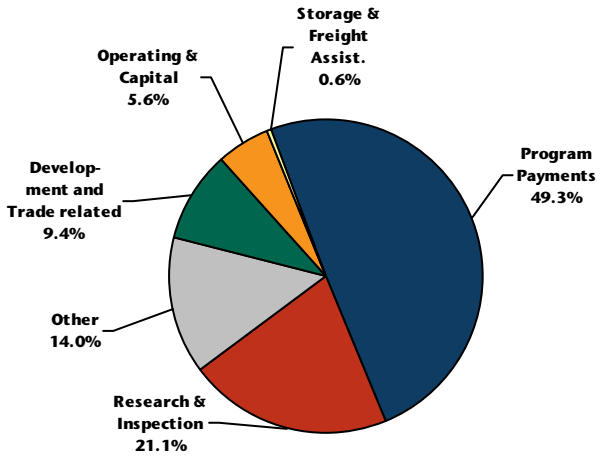
  Program payments include income support and stabilization programs, ad hoc and cost reduction programs, crop insurance programs and financing assistance programs.

  Research and inspection is the second largest public expenditure category and constitutes 21% and 8% of federal and provincial expenditures respectively, in support of the agri-food sector.

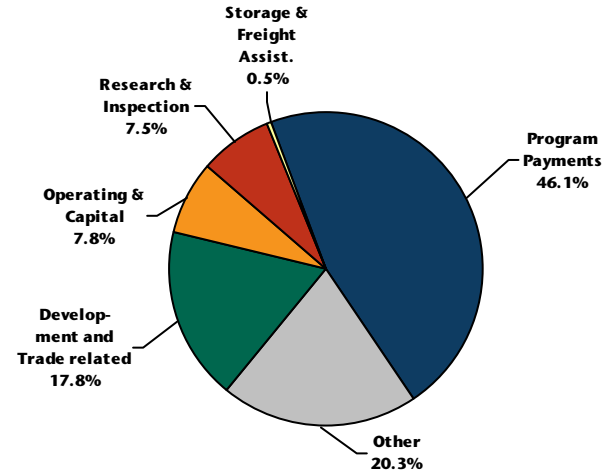
  Provincial governments, on average, increased their budget expenditure share for development, trade and environment related programs by over 50% in fiscal year 2002-03 relative to 2001-02.

**Chart C1.3**
**Government Expenditures in Support of the Agri-Food Sector by Major Category, 2002-03 Fiscal Year**

**Federal**




**Provincial**

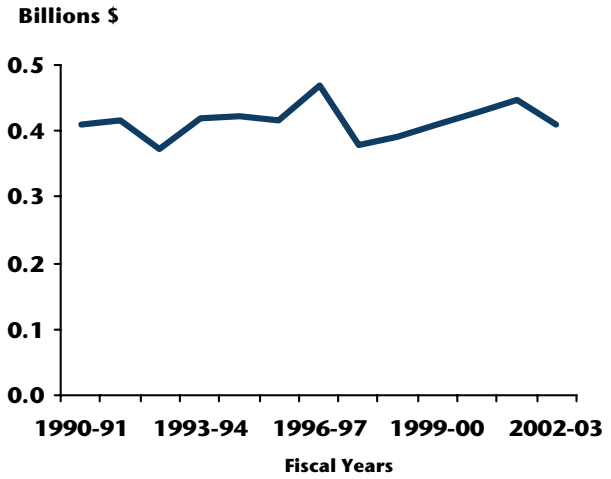



Source: AAFC.
Notes 2002 figures are forecasts.

# Canadian research expenditures on agriculture are lagging behind the U.S.

- **Total federal and provincial research expenditures on agriculture have been relatively stable over the last decade,** fluctuating at around $400 million annually.

**Chart C1.4**
**Government Research Expenditures on Agriculture, 1990-91 – 2002-03 Fiscal Years**



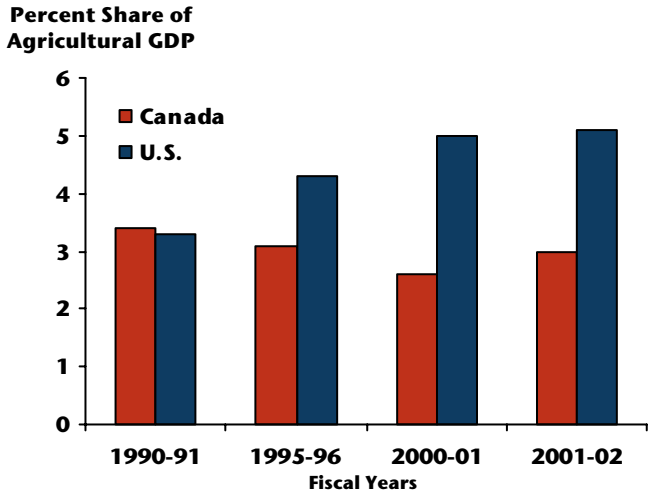

Source: AAFC.
Note: 2002 figures are forecasts.

- **But today these research expenditures represent a smaller share of agricultural GDP than they did in the 1990's** (3% compared to 3.4%).

  In contrast, U.S. expenditures as a share of agricultural GDP have been rising and now represent around a 5% share.

  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 reseach (see Chart A5.5). In the U.S. the majority of publicly funded research is carried out by private firms and land grant universities.

**Chart C1.5**
**Canadian and U.S. Public Research Expenditures on Agriculture, 1990-91 – 2001-02 Fiscal Years**




Source: Statistics Canada, AAFC, U.S. Department of Agriculture, U.S. Department of Commerce.
Note: The U.S. fiscal year runs from October 1 through to September 30 while the Canadian fiscal year runs from April 1 through to March 31.

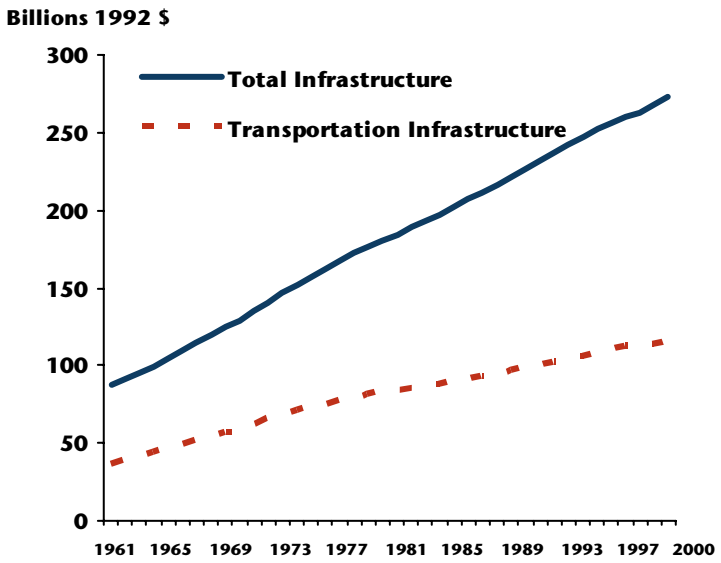
# Public infrastructure investment has contributed positively to productivity growth in food processing

- **The total amount of public infrastructure* has increased every year since 1961, but growth has slowed over time.** The annual growth rate fell from around 5% in the 1960's to around 2% in the 1980's, and since then, has roughly kept at this level.

  The decline in the growth rate of transportation infrastructure** has been more rapid, reflecting a slow down in the expansion of the road and highway systems.

  Research shows that public infrastructure investment has had a significant positive influence on productivity growth in food processing, improving the efficiency of production and output distribution[17]. For example, the re-paving of a highway could allow processors to use capital more effectively, affecting their technology and input choice, and could lower cost of delivering output to customers.

**Chart C1.6**
**Public Infrastructure in Canada, 1961-2000**




Source: Bernstein and Cahill, forthcoming 2004.

***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, sewers, and machinery such as snow removal vehicles and ambulances.**

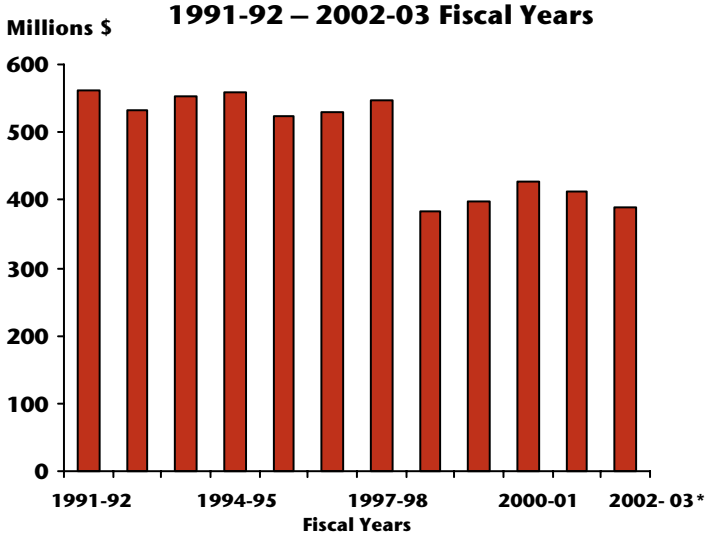
****Transportation infrastructure is a subset of engineering structures, and includes highways, roads, streets, runways, rail track, bridges and tunnels.**

# Governments also use tax rebates and exemptions and declining tax rates to support the agri-food sector

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

  In the fiscal year 2002-03, tax exemptions and rebates associated with primary agriculture production were valued at around $389 million. This does not include sales and income tax rebates.

**Chart C1.7**
**Tax Rebates and Exemptions for Primary Agriculture Production**
**1991-92 – 2002-03 Fiscal Years**




Source: Agriculture and Agri-Food Canada.

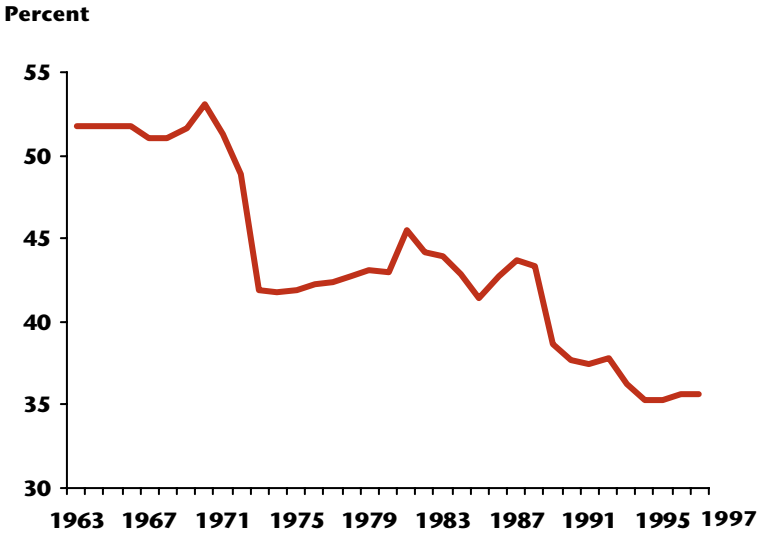
Note: Includes fuel tax rebates, fuel tax exemptions and property tax rebates, excludes sales and income tax rebates.

*2002 figures are forecasts.

- **The corporate income tax rate for manufacturing has fallen from 52% in the early 1960's to around 36% in 1997.**

  The corporate tax rate is the federal corporate income tax rate including any surtax, less the rate of federal tax abatement and the federal manufacturing/processing profits credit, plus a weighted average of provincial corporate income tax rates.

**Chart C1.8**
**Corporate Income Tax Rate in Canada for Manufacturing and Processing, 1963-1997**



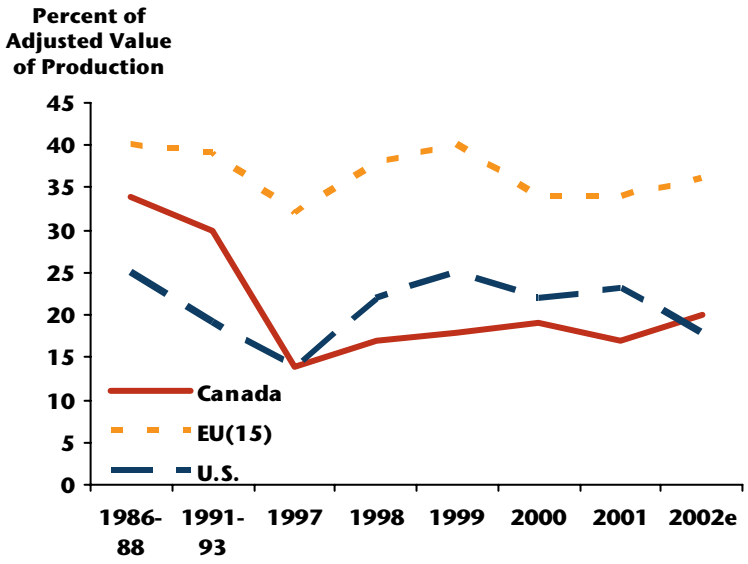

Source: Bernstein and Cahill, forthcoming 2004.

# Support to Canadian producers is comparable in size to the U.S. but less distortive

- **Over time, Canadian primary agriculture producers have become less reliant on policy support, as measured by the Producer Support Estimate (PSE).**

  In 2002, the PSE for Canada was 20% of the adjusted value of production compared to 36% for the EU(15) and 18% for the U.S.

**Chart C1.9**
**Producer Support Estimate by Region, 1986-2002**



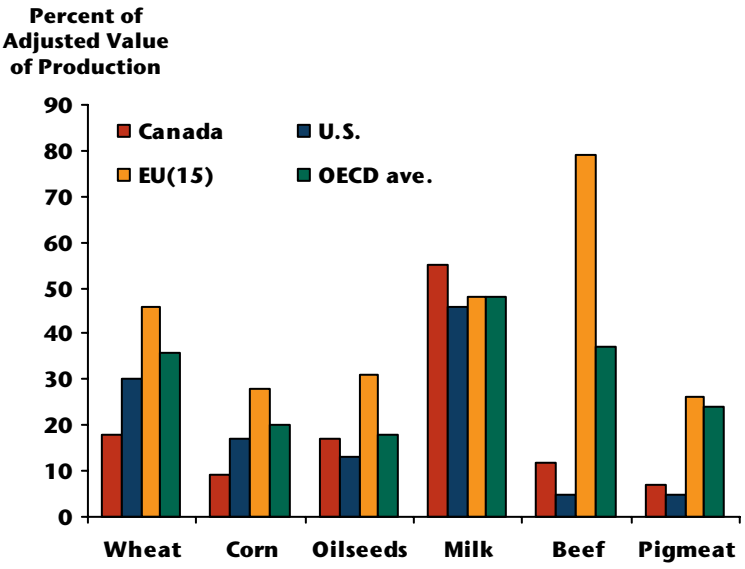

Source: OECD and AAFC estimates.

- **The level of support varies across commodities within a country.**

  European support for grains and oilseeds and red meat is much higher than in Canada. The U.S. has higher support with respect to grain.

  **With the exception of the supply managed commodities, Canadian programs also tend to be less distorting than U.S. and European support.** Canada's "whole farm" approach balances support more evenly across commodities.

**Chart C1.10**
**Producer Support Estimate by Commodity, 2002**




Source: OECD and AAFC estimates.

# Data Sources

# Data Sources

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# Glossary

# The System's Components

**Canadian Agriculture and Agri-Food System**

The Canadian Agriculture and Agri-Food System is a value chain of industries focused on producing agricultural and food products. It includes agricultural input and service suppliers, primary agriculture, food 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 |

**Agri-Food Sector**

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

**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.

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In defining the stages of the agriculture and agri-food system, an attempt has been made to be as inclusive as possible given data availability. Omissions reflect either a lack of data on an industry, or inability to separate the data for the industry from a more aggregate grouping that includes mostly non-agricultural production.

For more information on the North American Industrial Classification System (NAICS) please see http://www.statcan.ca/english/Subjects/Standard/naics/2002/naics02-menu.htm.

# The System's Components (cont'd)

**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 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.

**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).

**Food Processors**

Food 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

**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

# The System's Components (cont'd)

**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.

**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

# 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.

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For more information about the National Occupation Classification (NOC) please see http://www.statcan.ca/english/Subjects/Standard/soc/2001/nocs01-menu.htm.

# Occupations (cont'd)

## 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.

**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.

# 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.

### Direct

Involves a direct transfer of funds between taxpayers and farm producers.

### Indirect

Involves government expenditures that support the agri-food sector, but are not directly given to producers.

## 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.

# Government Support Categories (cont'd)

**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 either as a percentage of the product's unit value, or its 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.

# Economic and Statistical Terminology

**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.

**Hobby Farms**
Census farms that report less than $10,000 in sales of agricultural commodities.

# Economic and Statistical Terminology (cont'd.)

**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.

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

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

# Miscellaneous Terms

**EU(15)**
Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

**"Other" Definitions in Charts**

**Miscellaneous Farm Expenses**
Include repairs to building and fences, business insurance, custom work, stabilization premiums, legal and accounting fees and other expenses not elsewhere classified.

**Other Canadian Sources**
Include funds from related companies, from R&D contracts for other firms and grants and contractors from the provincial governments.

**Other Commodities**
Include sugar beets, potatoes, flora and nursery products, tobacco, ginseng, mustard seed, sunflower seed, lentils, canary seed, dry beans, dry peas, forage & grass seed, hay & clover, maple products, forest products, Christmas trees, miscellaneous crops, wool, honey, fur, miscellaneous livestock.

**Other Food**
Includes snack food manufacturing, coffee and tea manufacturing, flavouring syrup and concentrate manufacturing, seasoning and dressing manufacturing and all other manufacturing not elsewhere classified.

**Other Land**
Includes land on which farm buildings, barnyards, lanes, home gardens, greenhouses and mushroom houses are located; idle land; wood lots sugarbush; tree windbreaks; Christmas tree plantings; bogs; marshes; sloughs; etc.

**Other Personal Expenditures on Goods**
Include personal expenditures on drugs and pharmaceutical products and personal effects not elsewhere classified.

**Other Personal Expenditures on Services**
Include personal expenditure on accommodation services, personal care, household maintenance and childcare, education and cultural services, operating expenses of non-profit organizations and other auto-related services.

**Other Prairie Commodities**
Include sugar beets, potatoes, vegetables, fruits, flora and nursery, tobacco, forage and grass seed, hay and clover, maple products, forest products, Christmas trees, miscellaneous crops, dairy, poultry, eggs, wool, fur, honey and miscellaneous livestock.

# Miscellaneous Terms (cont'd)

**Tame Pasture**
Pasture that has been cultivated and seeded, irrigated, fertilized and/or controlled for weeds.

# Endnotes

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.

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

4. Canadian Grocer Magazine, April 2002.

5. For food processors, see Harper and Burroughs, "An Analysis of Profits within the Canadian Food Processing Sector", AAFC Performance Report Series, June 2003. For food retailers, see Smith and Trant, "Performance in the Food Retailing Sector of the Agri-Food Chain", AAFC Performance Report Series, June 2003.

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8. McCain Foods Limited, McCain Worldwide.

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17. Bernstein and Cahill, "Canadian Food and Beverage Industry, Input Efficiency, Productivity Growth, and Infrastructure Capital", AAFC Performance Report Series, Forthcoming in 2004.

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