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

Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada

Canada

AN OVERVIEW OF THE CANADIAN AGRICULTURE AND AGRI-FOOD SYSTEM

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Foreword

This report provides detailed background information to the associated summary brochure "Overview of the Canadian Agriculture and Agri-Food System." It gives an economic overview of the agri-food value chain. The report begins with the consumer and goes upstream through food distribution, food processing, agricultural production, 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 agri-food value chain;
- 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.

This report reveals the Canadian agriculture and agri-food system to be a highly complex, integrated and internationally competitive value chain that is a growing part of the Canadian economy. It is a system undergoing continuous change 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 8.4% of total Gross Domestic Product (GDP) in 2001.
- 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 in Canada, while food retail is the second largest consumer good expenditure category, and foodservice the third largest consumer service expenditure category.
- All stages of the system are growing and are profitable, with value added production leading the growth. Since 1990 cattle and hog numbers have increased by 25% and 37% respectively, while the value of food processing shipments has increased by 56% to $70 billion. Consumer-oriented products now make up one half of Canada's total agriculture and agri-food export value.
- Export opportunities are critical for the growth of most agriculture industries. Canada was the third largest exporter of agriculture and agri-food products in the world in 2001, after the U.S. and the EU15, with exports valued at $26.6 billion. At the same time, Canada was the fifth largest importer of agriculture and agri-food products in the world with imports valued at $19.2 billion.
- Agriculture and agri-food trade is concentrated on the North American market. In 2002, exports to the U.S. and Mexico accounted for over 70% of Canada's total agriculture and agri-food export value, up from 40% in 1990. The U.S. is a particularly important export destination for Canada's value added products, accounting for 80% of all such exports.
- Likewise, investment is also focussing on the North American market. U.S. investment in Canadian food processing was valued at $6.1 billion on a stock basis in 2001, accounting for 81% of total foreign direct investment in this industry, up from a 59% share in 1990. Canada's outward investment in U.S. food processing was $3.1 billion, which was a 60% share of Canada's total outward investment in food processing, up from a 30% share in 1990.

Highlights (cont'd)

- 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 less than 10% 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.
- Livestock output and crop yields are increasing in response to genetic and biotechnology advances, and better management practices. For example, cattle carcass weights have increased 33% over the last 20 years, and average corn yields have increased by nearly 50% over the last 40 years. These higher yields, along with advances in technology and industry restructuring, are contributing to strong productivity growth in primary agriculture of 3% per annum. This productivity growth rate is on par with that for U.S. primary agriculture at 3.1% per annum.
- Regulatory changes have had a major impact on the growth of the system. For example, the elimination of the Western Grain Transportation Act has contributed to the diversification of Prairie agriculture towards more value added production and higher value crops. Red meat and special crop production accounted for almost half of Prairie farm market receipts in 2001 compared to just a 36% share in 1988. The Agreement on Internal Trade, which allowed interprovincial sales of beer, has helped to support an annual average productivity growth of 1.4% in beverage production.
- There are no typical agriculture producers—agriculture producers differ widely in terms of their commodity specialization, scale of operation and motivation for farming. Differences can be discerned even among producers operating the same size farm with the same commodity specialization with respect to financial performance.
- Realized net market income for agriculture producers fluctuated over the late 1990s from a high of $2.3 billion in 1997 to a low of $0.1 billion in 2000. Government program payments, however, have acted to stabilize total farm income over this period. Payments of $3.4 billion in 2002 are expected to keep realized net farm income well above the 5 year moving average level of $3.2 billion.
- Canadian producers are less reliant on government support than are European and American producers. In 2001, the Producer Support Estimate (PSE) for Canada was 17% of the average value of production compared to 35% for the EU and 21% for the U.S.

Section A
The Agriculture and Agri-Food System and the Canadian Economy

Agriculture and Agri-Food Canada
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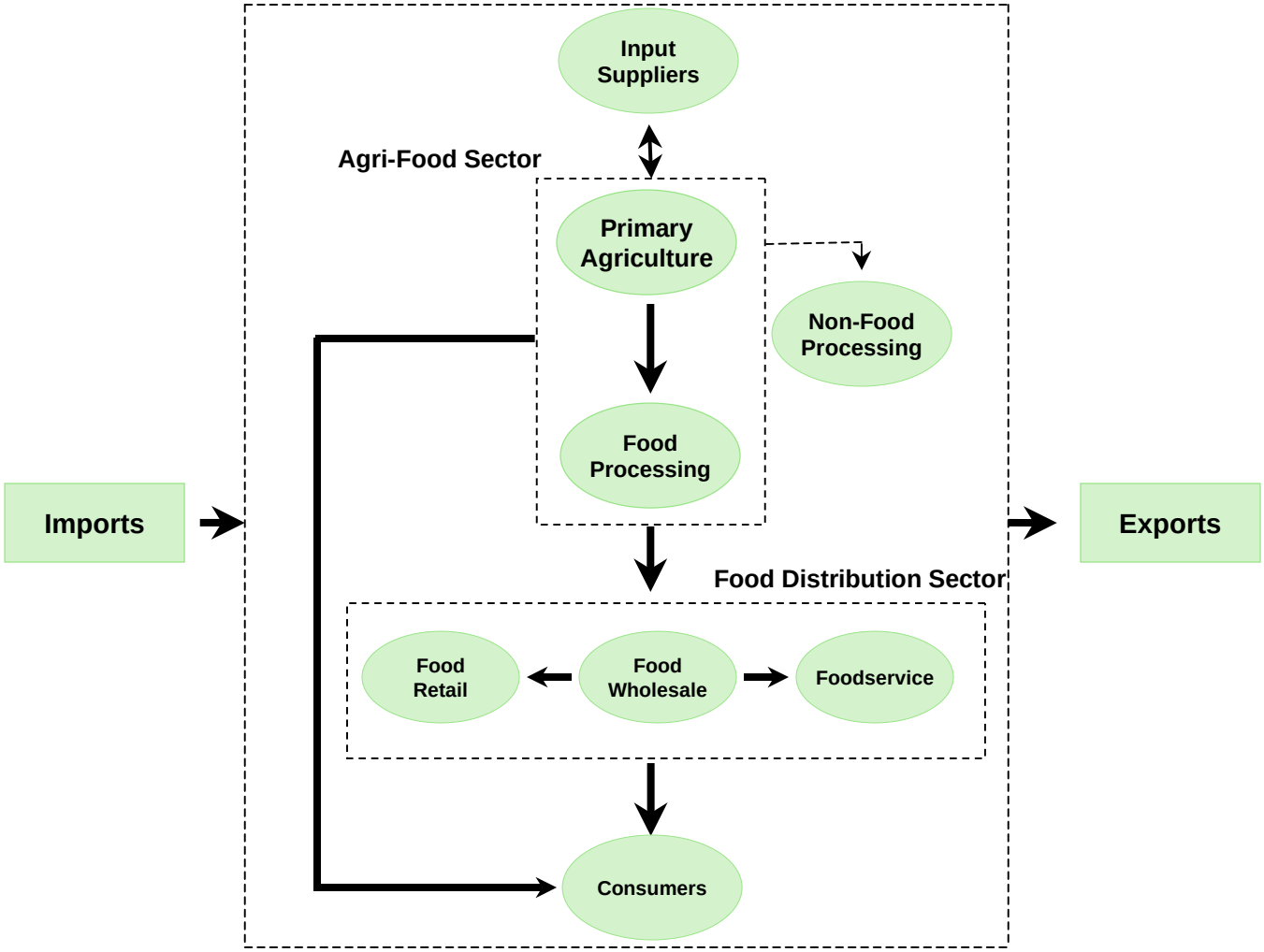
Canada

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 supply food and beverages to both Canadian and international consumers. The component industries include **agricultural input and service suppliers**, **primary agriculture**, **food processors** (including beverage and tobacco processors), **food retailers/wholesalers** and **foodservice establishments**[1].

- The whole system is an integral part of the global economy. Imports enter and exports leave at each stage in the chain.

…that is evolving

- Together, primary agriculture and food processors make up the **agri-food sector.** The **food distribution sector** encompasses food retailers, wholesalers and foodservice establishments. Input suppliers refer to the provision of agricultural specific inputs and services, and includes both manufacturing and distribution activities.
- 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 a food processor of livestock feed, an input wholesaler of livestock feed, a farm product wholesaler and a grain exporter.
- Linkages between the vertical industries are becoming more formalized with contractual arrangements, strategic alliances and other co-ordination methods. Some institutional changes are occurring to accommodate this trend. For example, the relinquishing of Prairie hog marketing boards' exclusive selling rights has allowed for direct packer-producer contracting[2].
- There is a general trend toward increasing scale of operation across the system. Increased concentration and consolidation is occurring at all stages.

Contracting in the Pork Industry

Increasingly major processors are directly contracting with hog producers. Under the terms of the contract:

- The producer is bound to specific production methods and must keep formal records. For example, he/she must vaccinate against diseases such as pneumonia as directed by veterinarians, generate ID's for individual pigs and ensure that hogs are free of drug residues.
- There are also stringent quality requirements on the final product such as acceptable fat hardness and colour score.
- In return, the producer receives a contract that covers the cost of production and assures a more predictable cash flow. He/she also receive technical assistance in the form of state of the art feed and nutrition programs and animal genetics.

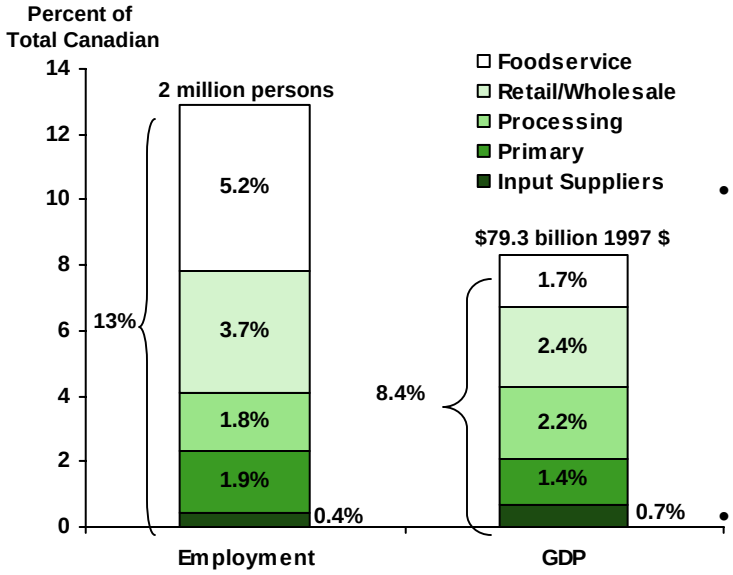
This benefits the consumer and provides an assurance that the product they are buying is safe, nutritious and high quality. This assurance is traceable and includes a formal production record system.

GDP
and
Employment

A1.

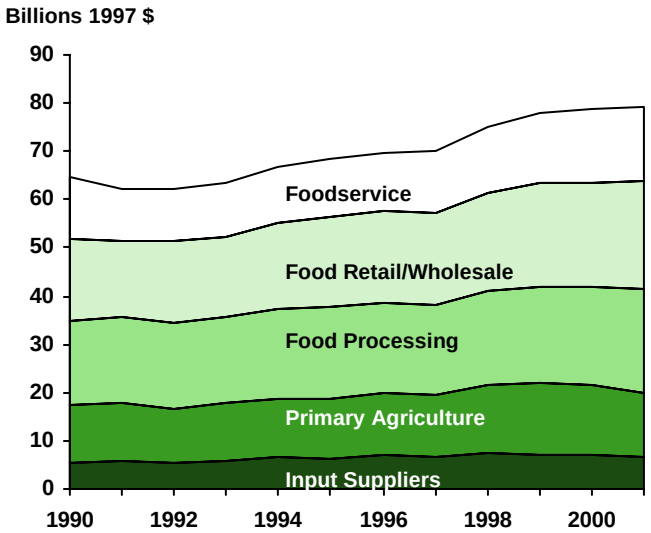
The agriculture and agri-food system plays a significant role in the Canadian economy

Chart A1.1
The Agriculture and Agri-Food System's Contribution to GDP and Employment, 2001



Source: Statistics Canada and AAFC calculations.

Chart A1.2
The Agriculture and Agri-Food System's Contribution to GDP, 1990-2001

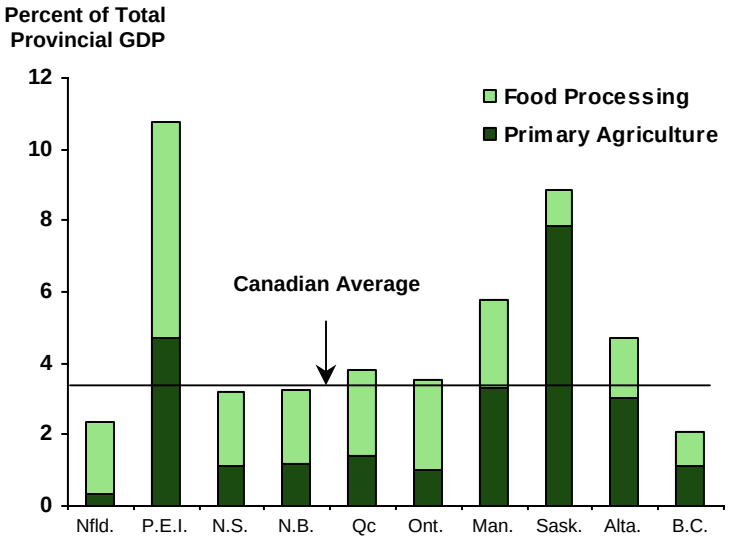


Source: Statistics Canada and AAFC calculations.

- The agriculture and agri-food system plays a significant role in the Canadian economy in terms of employment and income. It provides, in direct employment opportunities, one in eight jobs. The system also indirectly generates employment in transportation, and other logistical economic sectors.
- In 2001, it accounted for 8.4% of total Canadian **Gross Domestic Product** (GDP). The overall system has been growing in size at a pace just under 2% per annum which is less than that of the overall economy.
- **Value-added production** is leading the growth of the system. Individually, food retail is the fastest growing component with an annual average growth rate of 2.8% followed by input suppliers with an annual average growth rate of 2.4%.

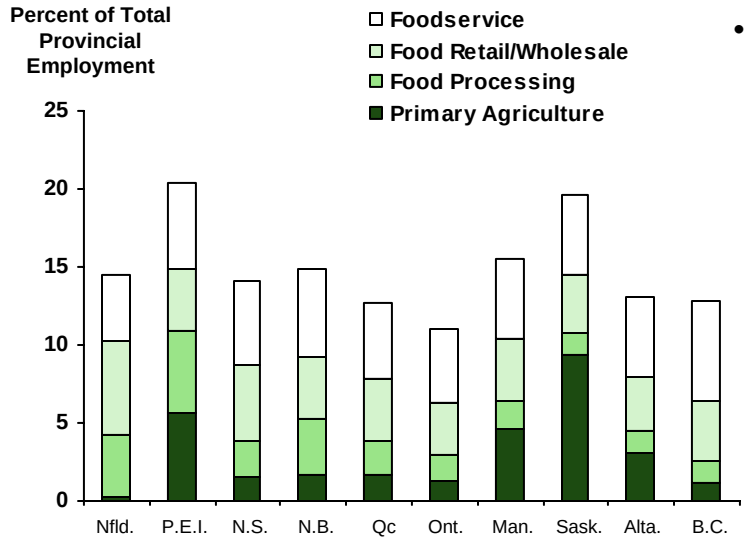
It is also important to provincial economies

Chart A1.3
The Agri-Food Sector's Contribution to Provincial GDP, 2001



Source: Conference Board of Canada and Statistics Canada.
Note: SIC80 Classification System.

Chart A1.4
The Agriculture and Agri-Food System's Contribution to Provincial Employment, 2001

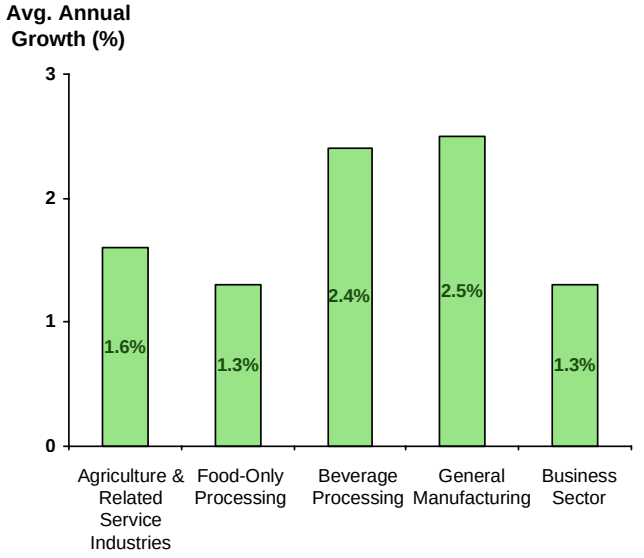


Source: Statistics Canada and AAFC calculations.
Note: Provincial input suppliers have been excluded because of reliability and confidentiality data concerns with many of its component industries.

- The size of the agri-food sector varies across Canada, with its relative size in Prince Edward Island (11%) and Saskatchewan (9%) more than double the national average of just under 4%.
- The mix between primary agriculture and 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.
- Food processing is the largest manufacturing industry in seven provinces. It is the second largest in Ontario and the third largest in British Columbia and New Brunswick.
- In absolute terms, Ontario and Quebec have the largest number of people employed in the whole system. However, the system accounts for the largest shares of provincial employment in Prince Edward Island and Saskatchewan (around 20%).
- While the agri-food sector's provincial employment share varies in accordance with primary resource location and transportation infrastructure, the food distribution sector's employment share varies in proportion to provincial population.

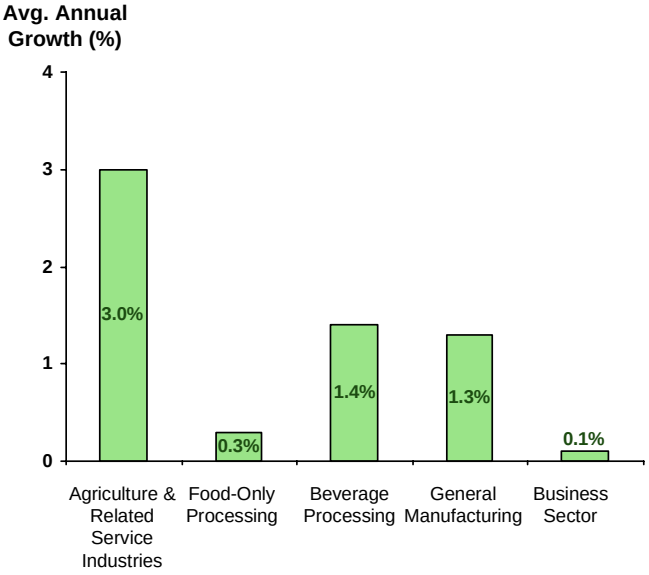
Primary agriculture is showing strong productivity growth

Chart A1.5
Labour Productivity Growth of Different Sectors, 1981-1997



Source: Statistics Canada and AAFC calculations.
Note: 1) SIC80 Classification System.
2) Agriculture and Related Service Industries include data for some input suppliers.

Chart A1.6
Multifactor Productivity Growth of Different Sectors, 1981-1997



Source: Statistics Canada and AAFC calculations.
Note: 1) SIC80 Classification System.
2) Agriculture and Related Service Industries include data for some input suppliers.

- Over time, advances in technology and industry restructuring are improving productivity. Productivity can be measured either in terms of **labour productivity** or **multifactor productivity**.

- Labour productivity is a measure of an industry's value-added per unit of labour worked. Over the last 20 years, labour productivity in primary agriculture and food-only processing has been growing roughly on par with the economy in general (i.e. the business sector).

- This contrasts with the 1970s when labour productivity in primary agriculture had an annual average growth rate (5%) more than double that of the general economy (2%). The slow down in labour productivity growth reflects several different factors. There has been a diversification in commodity specialization from grains to more labour-intensive activities (e.g. livestock, horticulture, organic production, etc.) There has also been a change in the nature of technology advances from labour-saving machines to knowledge-intensive technology (e.g. GM crops) which may not necessarily be labour saving.

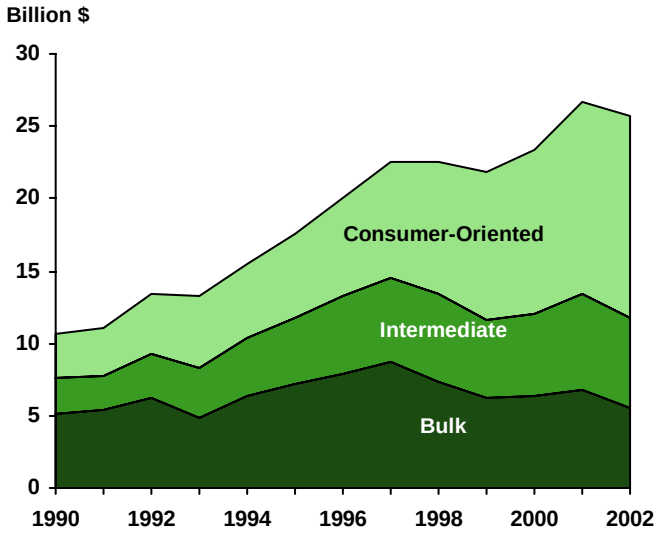
- Multifactor productivity is a better measure of productivity growth in that it measures the efficiency in use of all the production inputs rather than just a single input. This measure shows that productivity growth in primary agriculture at 3.0 % is still outpacing the average for the economy, and is comparable to U.S. productivity growth for primary agriculture of 3.1%.

International Trade

A2.

The agri-food sector is internationally focused and is becoming more value-added

Chart A2.1
Agriculture and Agri-Food Export Sales, 1990-2002

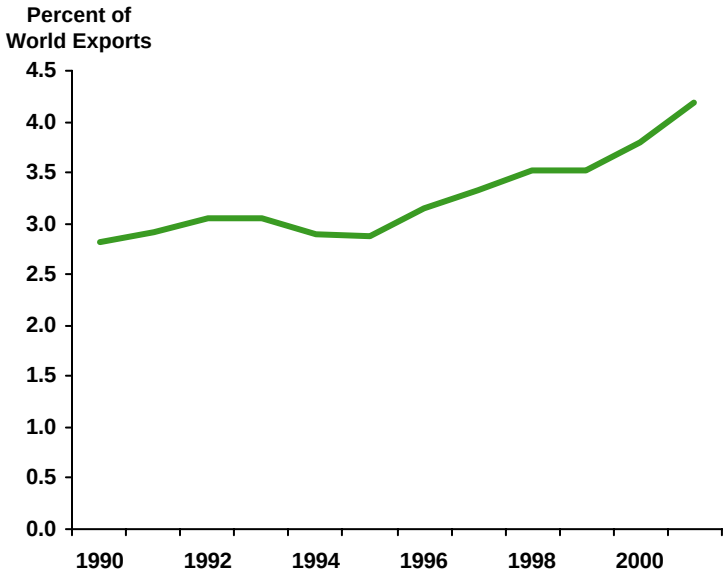


Source: Statistics Canada and AAFC calculations.

- The agri-food sector is export-oriented. In 2001, about 50% of primary production was exported either as bulk or as value-added goods.
- **Agriculture and agri-food exports** have doubled over the past decade, with export of **consumer-oriented products** more than tripling during this time. Today, consumer-oriented products now account for one half of all exports. This compares to 1991 when consumer-oriented products accounted for less than one third of total exports.
- Bulk export sales declined by 20% in 2002 because of the impact of the drought on Prairie grain and oilseed exports.

Canada's 4% share of world agri-food trade is rising

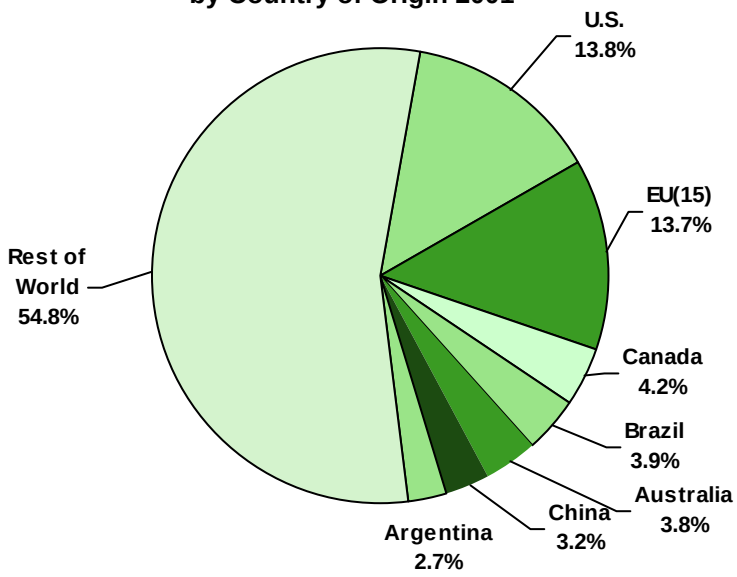
Chart A2.2
Canadian Agriculture and Agri-Food Exports as a Share of World Exports, 1990-2001



Source: FAO.

- Since the 1970s agriculture and agri-food exports have commanded between a 3% to 4% share of world exports. Canada's share has been rising since 1990.

Chart A2.3
World Agriculture and Agri-Food Export Share by Country of Origin 2001

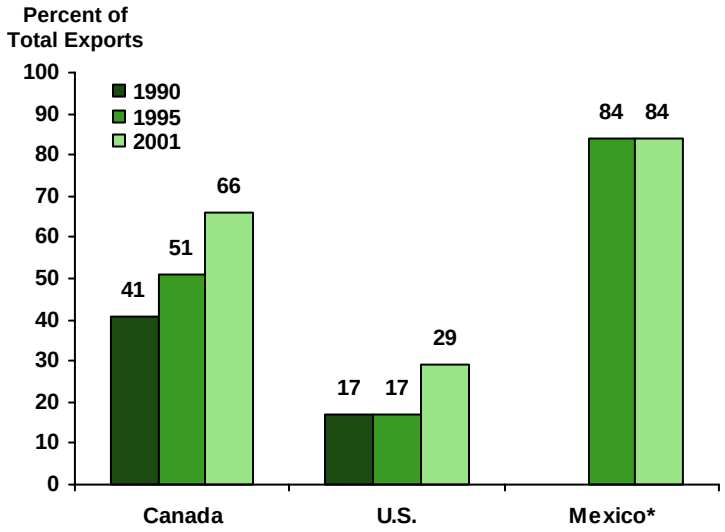


Source: FAO.

- In 2001, Canada exported $26.6 billion in agriculture and agri-food products. Canada was the third largest exporter after the U.S. and the EU15, and was ahead of Brazil, Australia, China, and Argentina.

Trade orientation is concentrating on an integrated North American market

Chart A2.4
North American Share of Agriculture and Agri-Food Exports, 1990, 1995 and 2001

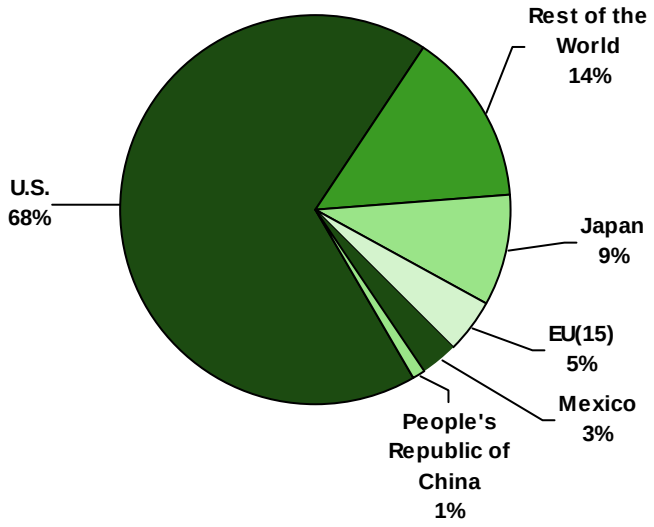


Source: Statistics Canada, Industry Canada, Strategis Trade Data Online, World Trade Atlas and AAFC calculations.

Note: *1990 data for Mexico is unavailable.

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

Chart A2.5
Destination of Canadian Agriculture and Agri-Food Exports, 2002

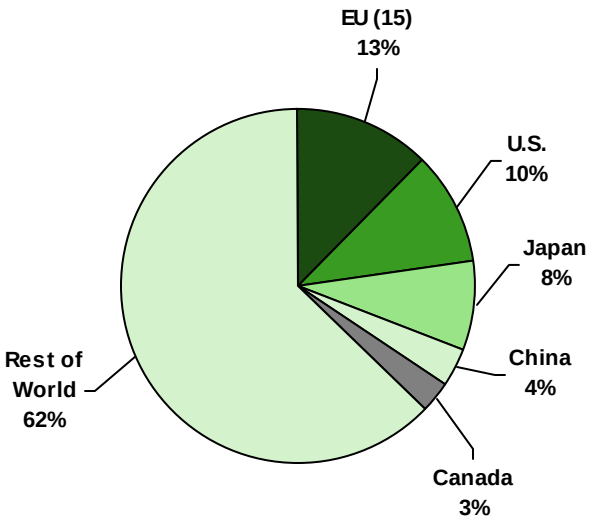


Source: Statistics Canada and AAFC calculations.

- Agriculture and agri-food export sales to the U.S. accounted for almost 70% of Canada's total agriculture and agri-food export value in 2002 compared to 44% in 1992. The U.S. market is a particularly important destination for consumer-oriented and intermediate products, accounting for 80% of the total export value of these products.
- Agriculture and agri-food export sales to Mexico have also shown substantial growth, doubling in size since 1992.

But exports to the rest of the world are also growing

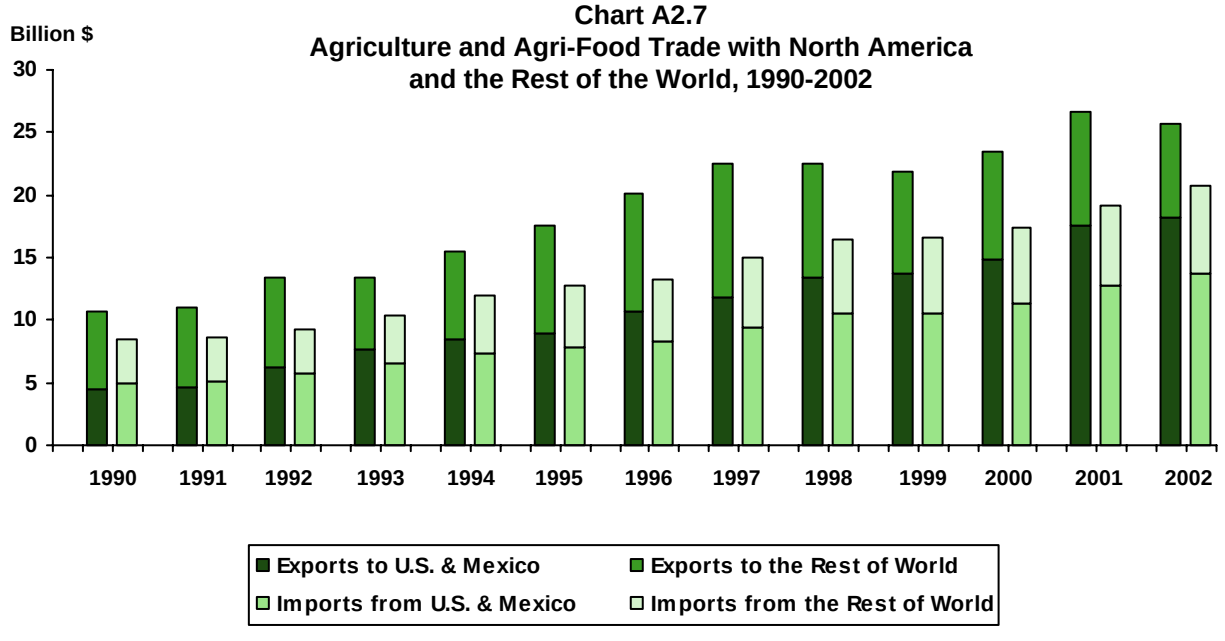
Chart A2.6
World Agriculture and Agri-Food Import Share by Country of Origin, 2001



Source: FAO.

- Agriculture and agri-food exports to the rest of the world are also growing over time. In the last decade export sales to the rest of the world have increased from $6 billion to $9 billion[3]. After the U.S., Japan is the next largest purchaser of Canadian agriculture and agri-food products accounting for a 9% share in 2002 (see Chart A2.5).
- As agriculture and agri-food exports have increased, so have agriculture and agri-food imports. Canada is the fifth largest importer of these products in the world. Imports are focused around the North American market with imports from the U.S. and Mexico growing at faster rates than those from the rest of the world.
- In total, agriculture and agri-food imports have been growing at a slower pace than exports resulting in a widening positive trade balance. In 2002, the trade surplus was $5.0 billion compared to $2.5 billion in 1991.

Chart A2.7
Agriculture and Agri-Food Trade with North America and the Rest of the World, 1990-2002



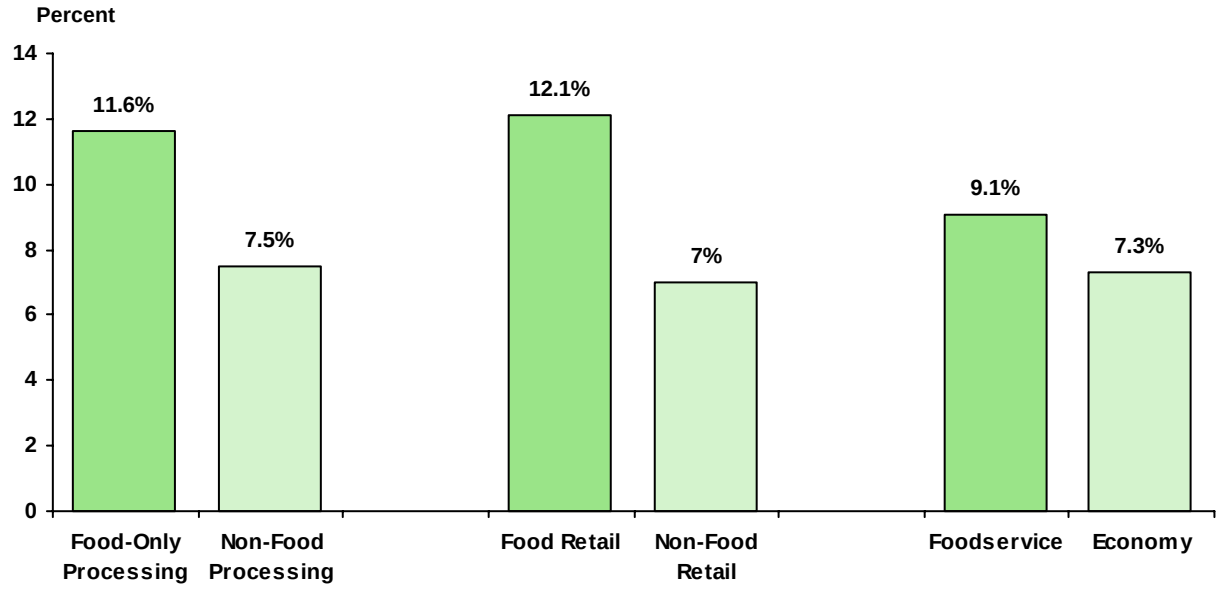
Source: Statistics Canada and AAFC calculations.

Investment, Concentration and Profitability

A3.

All stages of the value chain are profitable

Chart A3.1
Average Rate of Return on Long-Term Capital, 1990-1998

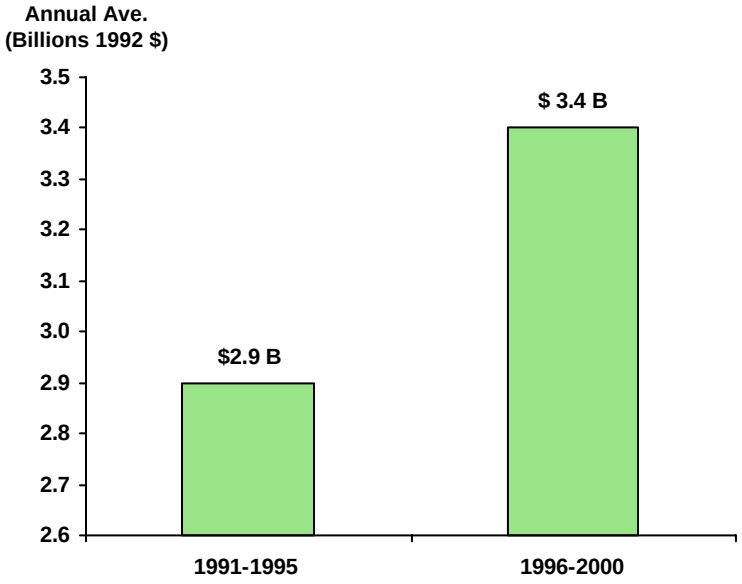


Source: Harper and Burroughs (2003), Smith and Trant (2003) and Harper and Smith (2001).

- The agriculture and agri-food system is profitable as measured by the average **rate of return to long term capital**. On average, food processors and food retailers earn higher rates than their non-food counterparts. This difference in rate of return between food and non-food processing and retail is more pronounced for large enterprises with sales of over $100 million. Large food processors and retailers, on average, tend to earn higher rates of return than do small and medium-sized food processors and retailers. Conversely, small and medium sized non-food processors and retailers tend to earn higher rates of return than large non-food enterprises[4].
- Because most farms are not incorporated, it is not meaningful to calculate the average rate of return to long term capital for agriculture producers. But other measures of profitability indicate that average farm income is roughly comparable to average income received by non-farm families (see Chart B4.26). In general, profitability of agriculture producers is independent of scale of operation (see Chart B4.28).

Investment is fuelling the growth of the system

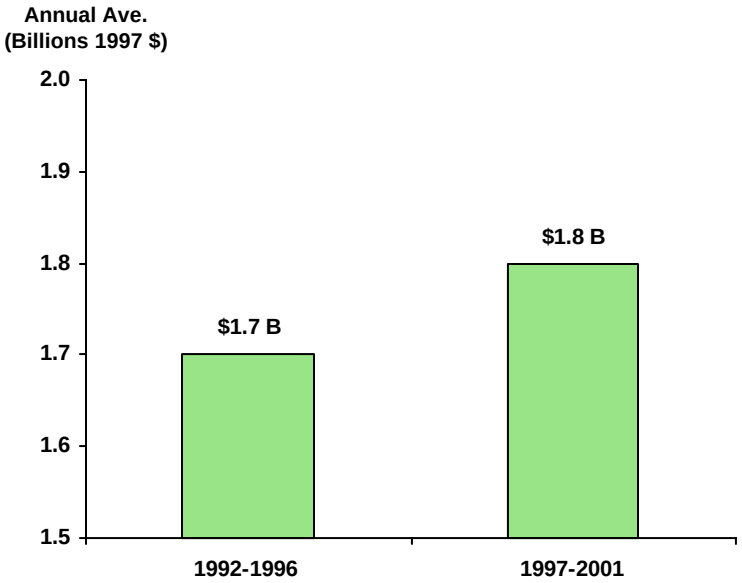
Chart A3.2
Investment in Primary Agriculture, 1991-2000



Source: Statistics Canada.

Note: Only includes machinery and equipment investment and construction investment.

Chart A3.3
Investment in Food Processing, 1992-2001

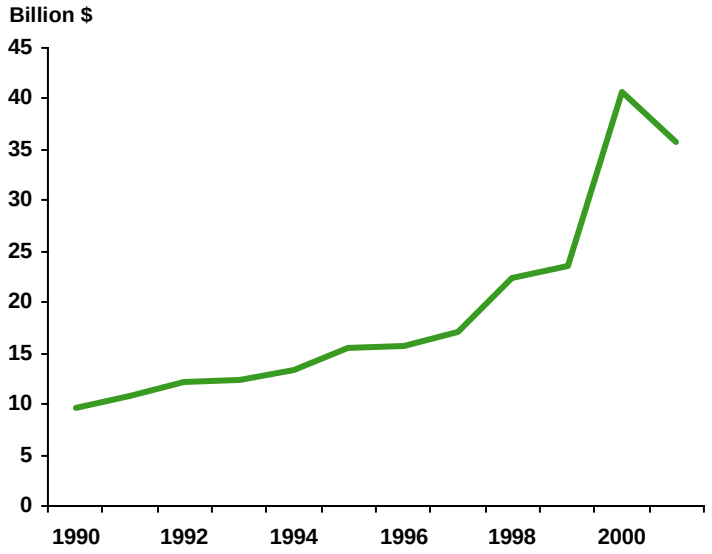


Source: Statistics Canada.

- Profitability, along with North American integration and technology advances, are just some of the forces driving consolidation and investment in the agriculture and agri-food system. In the late 1990s, real investment in the agri-food sector increased in intensity relative to the early 1990s. Annual average investment in primary agriculture and in food processing grew by 15% and 10% respectively, between these two time periods

FDI is a major source of investment funding

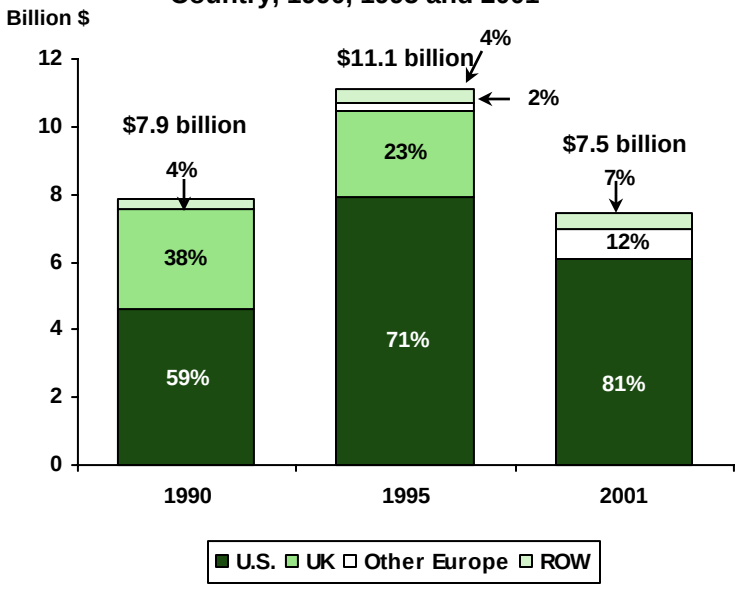
Chart A3.4
Foreign Direct Investment in the Agri-Food Value Chain, 1990-2001



Source: Statistics Canada and AAFC calculations.

Note: 1) Excludes input suppliers and foodservice; includes fishing;
2) Measured on a stock basis; 3) SIC 80 Classification System.

Chart A3.5
Foreign Direct Investment in Food Processing by Country, 1990, 1995 and 2001



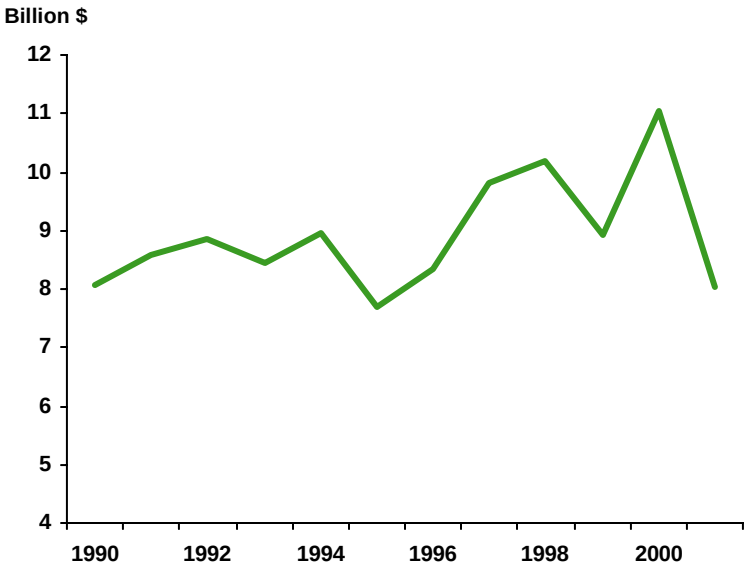
Source: Statistics Canada and AAFC aggregates.

Note: 1) Measured on a stock basis;
2) SIC80 Classification System.

- **Foreign direct investment (FDI)** is a critical source of capital for the growth of the agriculture and agri-food system. FDI benefits both the investing firm and the host country. FDI provides the investing firm with market access and allows it to achieve economies of scale. The host country benefits through technology transfer and increased competition, which can lower food costs for consumers.
- FDI in the Canadian agri-food chain more than doubled over the 1990s reaching close to $24 billion in 1999. It rose to over $40 billion in 2000, in part due to the purchase of Seagrams by Vivendi SA of France. The drop in 2001 reflects, among other things, the re-evaluation of stock values.
- As the North American market becomes more integrated, FDI is occurring more and more within this market. The U.S.'s share of FDI in food processing, for example, has increased from just under 60% in 1990 to over 80% in 2001. This is probably an underestimation of the true importance of U.S. FDI in the agriculture and agri-food system because not all of the reinvestment that U.S. firms make in Canada show up in official FDI statistics.

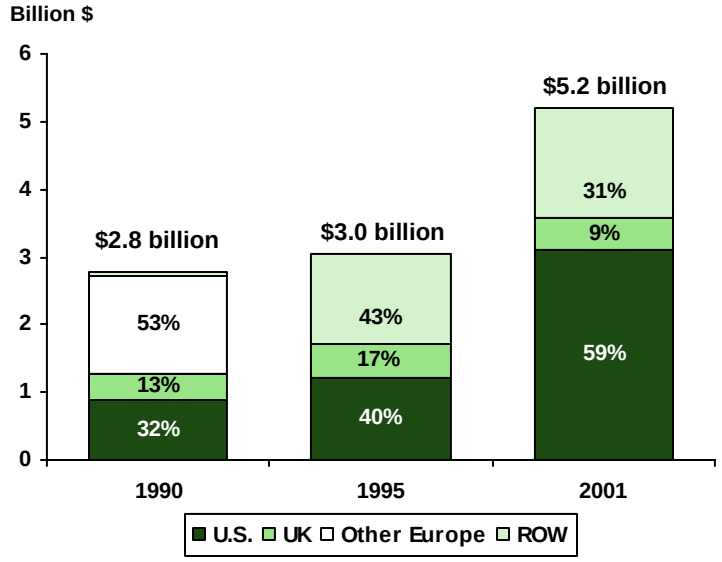
Outward investment is contributing to the system's international focus

Chart A3.6
Canadian Outward Investment in the Agri-Food Value Chain, 1990-2001



Source: Statistics Canada and AAFC calculations.
Note: 1) Excludes input suppliers and foodservice; includes fishing;
2) Food retail data for some years are unavailable due to data confidentiality. As a result outward investment is under-reported in some years;
3) Measured on a stock basis; 4) SIC80 classification system

Chart A3.7
Outward Investment in Food Processing by Country, 1990, 1995 and 2001



Source: Statistics Canada and AAFC aggregations.
Note: 1) Measured on a stock basis; 2) SIC80 Classification System

- 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. McCain Foods, for example, has about 55 production facilities on six continents.[5]

- With the buy-out of Seagrams and the retreat of Canadian retail operations from the U.S. by companies such as Loblaws and Sobeys, Canada's outward investment has been significantly reduced in recent years.

- Outward investment is focusing more on the U.S. market over time. This contrasts with the early 1990s, when over 65% of Canada's outward investment was in Europe.

Concentration varies across the agri-food chain

Chart A3.8
Concentration in the Agri-Food System

Industry	Top 4 firms sales as a percentage of total industry sales, 1993-1998
Input Suppliers	
Farm machinery, equipment and suppliers wholesale	30.9
Agriculture suppliers wholesale	28.2
Agriculture 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).

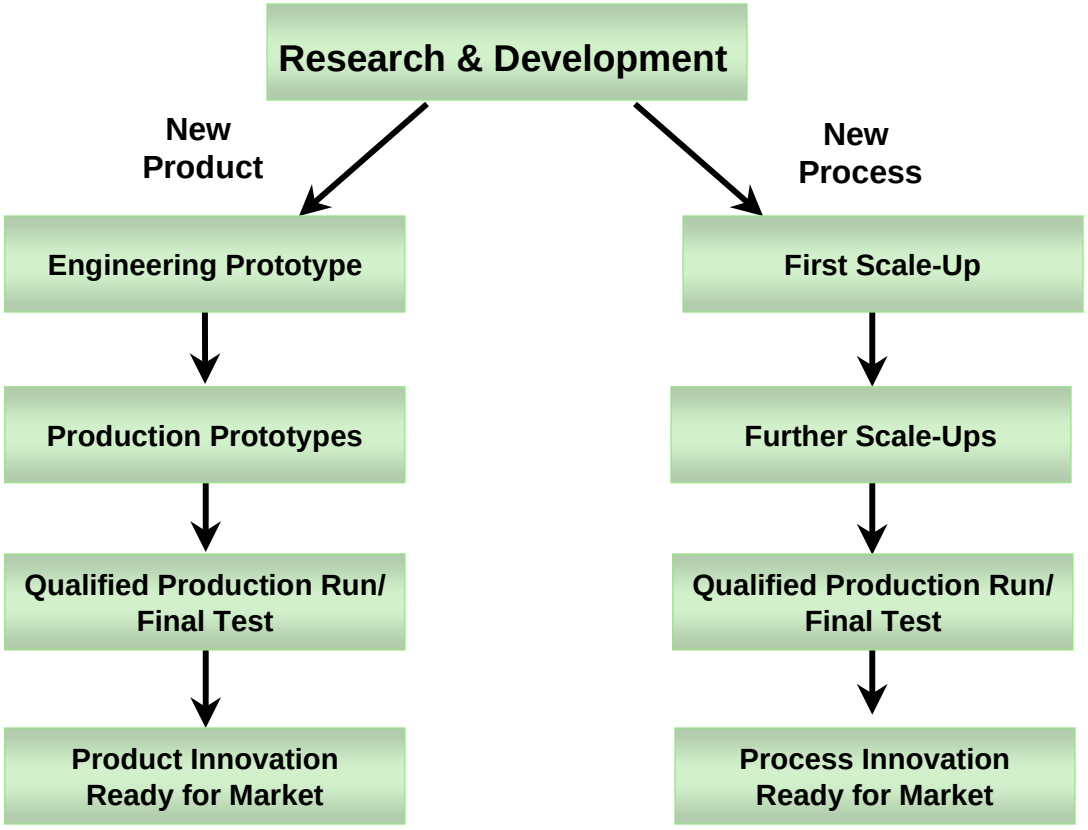
- There are large differences in concentration across the various stages of the system, and even between the component sub-sector industries that comprise each stage of the system. Primary agriculture is still relatively unconcentrated with a concentration ratio (CR4) for the top four firms of less than 5%. Food-only processing, considered as a whole, also has a relatively low CR4 of 13%. However, many of its sub-sector industries have CR4s exceeding 90%.
- In the past, increasing concentration was often linked with market power. But today, it is difficult to draw decisive conclusions. For example, globalization, by increasing competition, can reduce the ability of domestic firms to exert market power. Conversely, government policy, if it impedes trade (e.g. country of origin labelling) can increase the ability of domestic firms to exert market power.

Innovation

A4.

Innovation has helped to make agriculture a highly productive sector

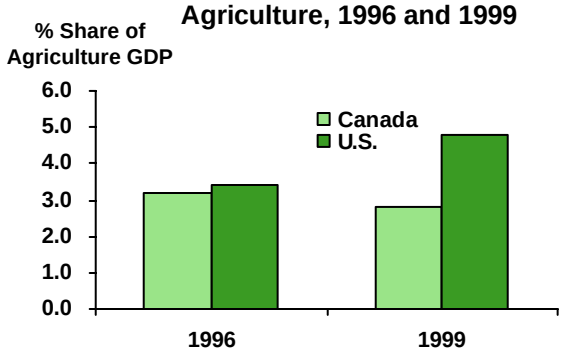
Chart A4.1
Steps in Agriculture and Agri-Food Innovation



- Innovation is 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. It is a key competitive strategy of the agriculture and agri-food system. Innovation in the form of new technological processes has helped to fuel productivity growth in primary agriculture for over 50 years. Food processors are constantly bringing out new product innovations to capture new markets. New value chain relationships are being developed in some agri-food industries to improve efficiencies.
- Similar to other economic sectors, innovation in the agriculture and agri-food system involves much more than just research and development (R&D). R&D is only the beginning of a complicated, and often high risk, process that takes the results from the laboratory, creates product/technology mock-ups and runs them through production tests.

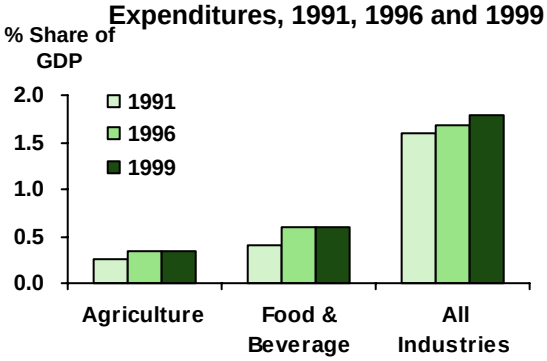
A large part of R&D in primary agriculture is carried out by government

Chart A4.2
Canadian and U.S. Public R&D Expenditure on Agriculture, 1996 and 1999



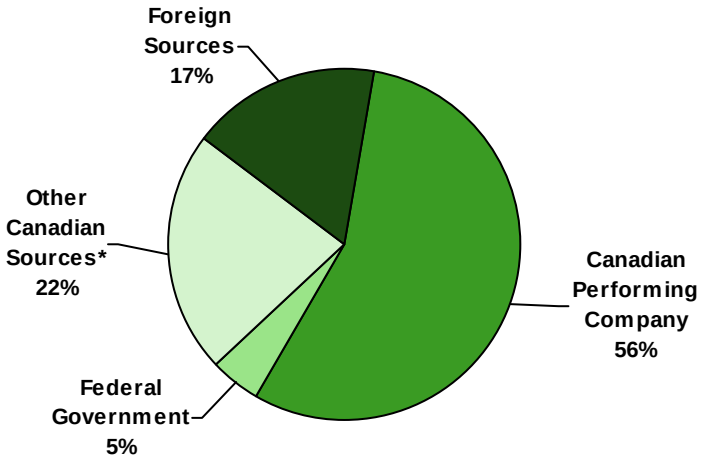
Source: Statistics Canada, U.S. Bureau of Economic Analysis and AAFC.

Chart A4.3
Canadian Private Industry Intramural R&D Expenditures, 1991, 1996 and 1999



Source: Statistics Canada and OECD.

Chart A4.4
Sources of Funds for Private Industry's Intramural R&D Expenditures on Agriculture, Forestry, Fishing and Hunting, 2000



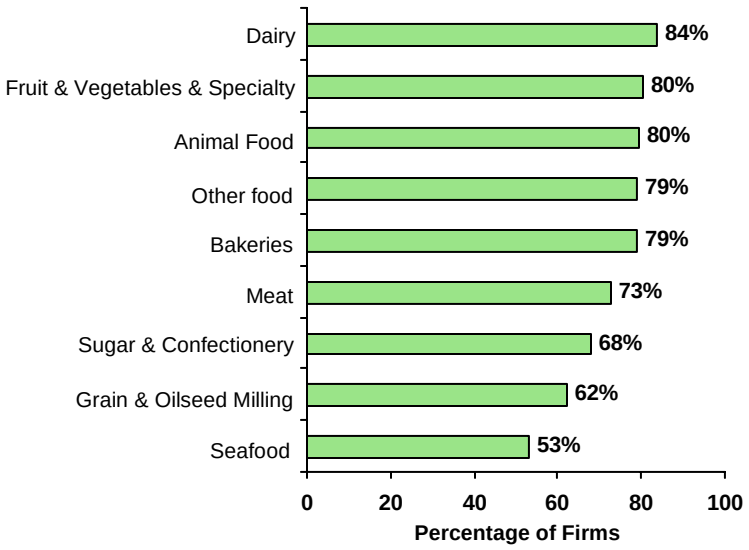
Source: Statistics Canada.

Note: *Other Canadian Sources include funding from provincial governments.

- In 1996 public R&D expenditures in Canada on primary agriculture, expressed as a share of agricultural GDP, was roughly on par with that of the U.S. at around 3.3%. By 1999 Canada's public spending had declined slightly to 2.8% of Canadian agricultural GDP, while U.S. public spending had increased to 4.8% of U.S. agricultural GDP.
- There is, however, a difference between Canadian and U.S. public spending on R&D. In Canada a large part of the publicly funded R&D is carried out by the federal government while in the U.S. the majority is carried out by land grant universities. In 1999 U.S. R&D expenditures performed by government agencies amounted to only 1.4% of total U.S. agricultural GDP.
- The Canadian federal and provincial governments give research grants and contributions to private industry, as well as to universities and non-profit research institutions. In 2000 roughly 5% of private industry's R&D expenditures were financed by the federal government, 17% by foreign sources and another 22% by other Canadian sources including provincial governments.
- In 1999 private industry's total **intramural R&D expenditures** on agriculture were 0.4% of agriculture GDP. This compared with an intramural R&D expenditure share for food processing of 0.6%, and for the general economy of 1.8%.

Food processors are product innovators

Chart A4.5
Firms Reporting One or More Product Innovations by Food-only Industries, 1997-1999



Source: Statistics Canada.

- Product innovation is a well-recognized competitive strategy by food processors. A Statistics Canada Innovation Survey found that between 1997 and 1999, 25% of food processors had more than 10 new product innovations, an additional 50% had up to 10 new product innovations and only 25% reported no new product innovations resulting in about 9,000 new products annually.

- The survey also found that among the food processing innovators, 11% reported that they earned over a quarter of their sales revenues from the new innovations.

Section B

The Agriculture and Agri-Food System's Components

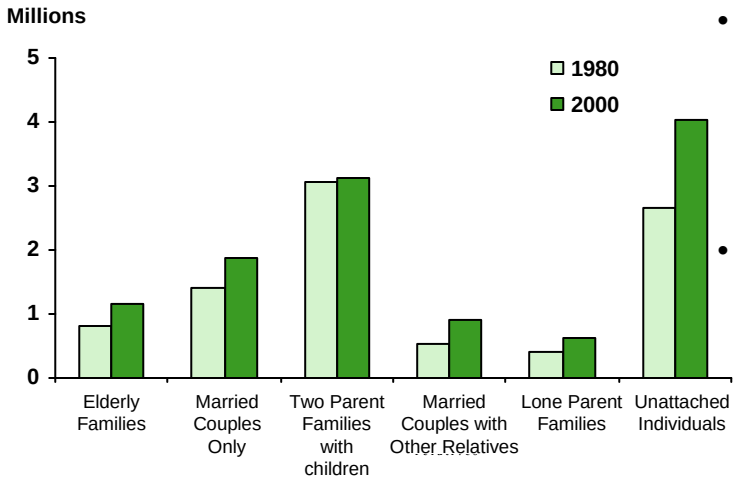
Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Canada

Consumers

B1.

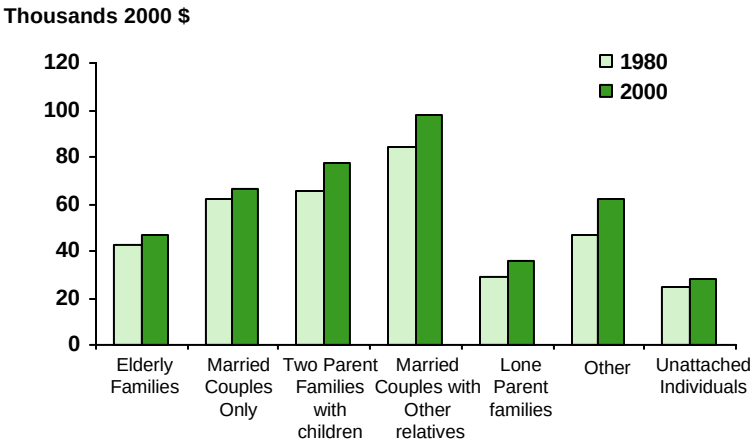
Consumer demands are becoming segmented

Chart B1.1
Number of Families by Family Type in Canada, 1980 and 2000



Source: Statistics Canada.

Chart B1.2
Family Income by Family Type in Canada, 1980 and 2000



Source: Statistics Canada.

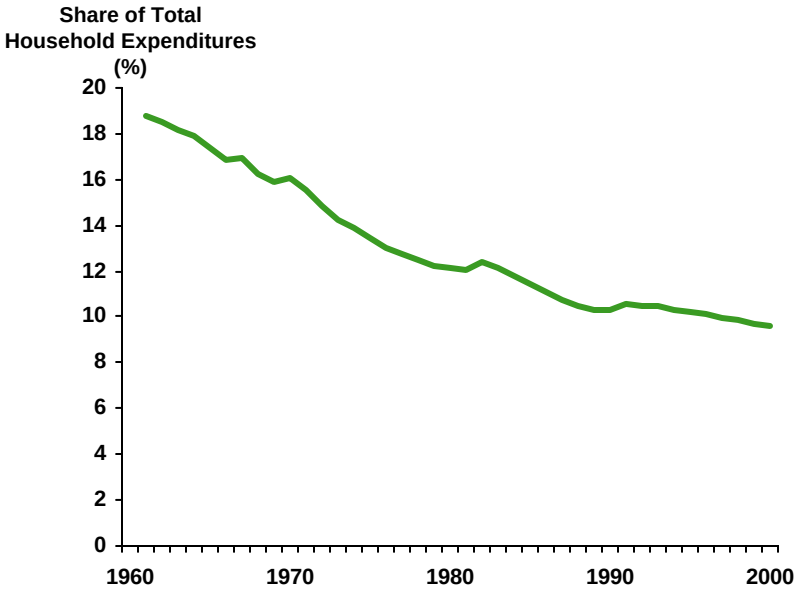
- Consumers, at home and abroad, are the final link in the agri-food chain. Their changing demands are helping to shape directions of change throughout the whole agriculture and agri-food system.

- There are several forces at work that are contributing to food demand changes in wealthy nations. One is demographic composition. Low birthrates coupled with longer life expectancies are creating aging populations. At the same time, the family make-up is changing. While the number of two parent families with children in Canada has remained relatively stable over the last 20 years, all other types of families have experienced significant growth.

- The changing demographics are creating diversity in households. This, in turn, is leading to greater market segmentation. More unattached people means more demand for individual serving sizes, while more elderly people means more demand for easy to read packaging. Dual earner families have increased the demand for convenience and innovative foods.

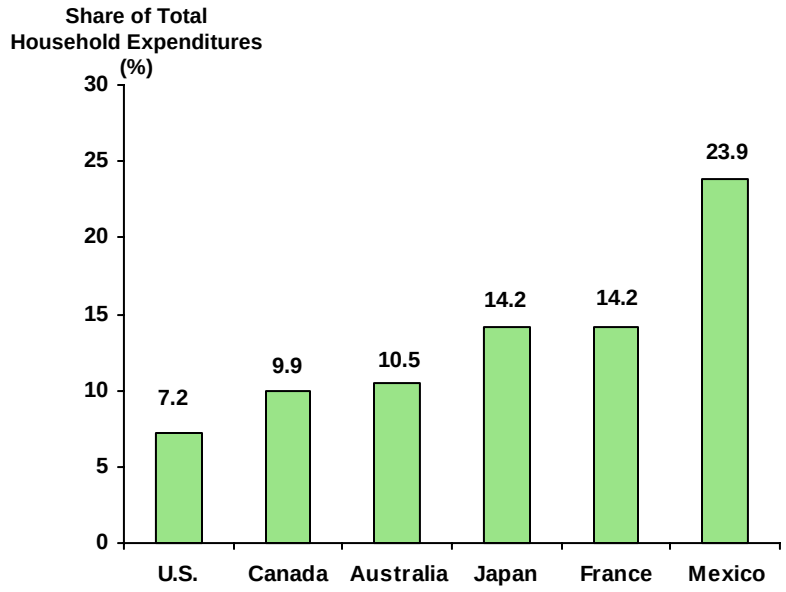
Canadians enjoy some of the lowest cost food in the world

Chart B1.3
Food Expenditures in Canada, 1961-2000



Source: Statistics Canada.
Note: Excludes alcohol.

Chart B1.4
Food Expenditures in OECD Countries, 2000

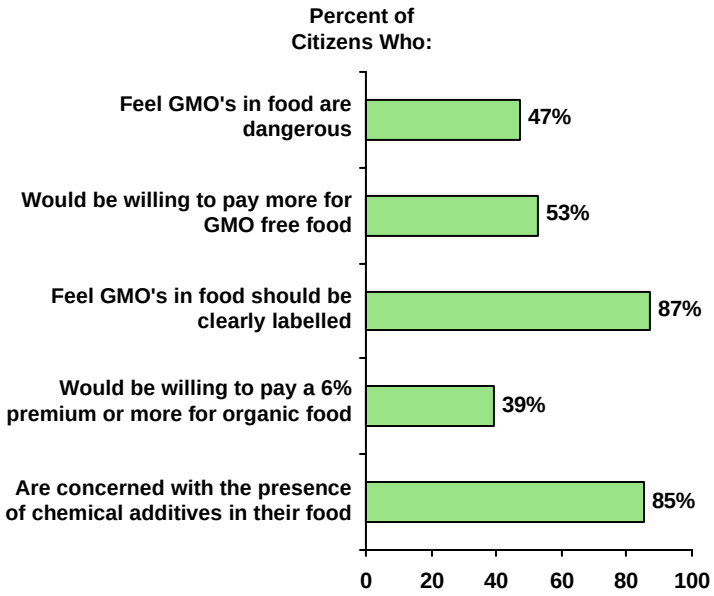


Source: OECD and Statistics Canada.
Note: 1) Excludes alcohol;
2) Because Chart B1.4 was calculated in current $'s while Chart B1.3 was calculated in constant 1992 $, the two charts are not directly comparable.

- In Canada the share of food in total household expenditures has been falling for the past 40 years, and was less than 10% in 2000. This compares to a household expenditure share of food of 14% in Japan and France, and 7% in the U.S.
- Increasing real incomes have largely contributed to the declining household expenditure share of food (see Chart B1.2).
- Because the cost of food only accounts for a relatively small portion of household budgets in wealthy nations, consumers in these nations are increasingly demanding, willing and able to pay for food differentiated by attribute.

Consumers are concerned about food safety

Chart B1.5
Canadian Consumer Attitudes to Food Issues, 2001



Source: Canadian Press/Leger Marketing. June 2002 and July 2002.

Chart B1.6
The Food Issue of Greatest Concern, 2000

Percentage of citizens who feel the food issue of greatest concern is	Food Safety	Food Price	Nutritional Value
Canada	42%	13%	28%
Germany	69%	6%	7%
Great Britain	50%	21%	12%
Japan	63%	7%	5%
U.S.	43%	13%	24%

Source: Environics International, 2001.
"Food Issues Monitor," pg.57.

- Globalization, world travel and rapid information technology are creating more health and environmentally conscious consumers. These sophisticated consumers are demanding more choice with respect to physical and credence attributes of food and more information on production practices (e.g. organic, GMO, environmentally friendly, animal welfare, etc.)

- Consumers are particularly aware and concerned about food safety. This concern has been stimulated by high profile food safety incidents in other countries and media reports about the possibility of bioterrorism threats. Based on a survey of citizens of 8 countries (Brazil, Canada, Germany, Great Britain, India Japan, Mexico, U.S.), a 2001 Environics International Survey found that 77% of the citizens consider food safety to be at least as serious a social problem as poverty, unemployment, health care and education.[6]

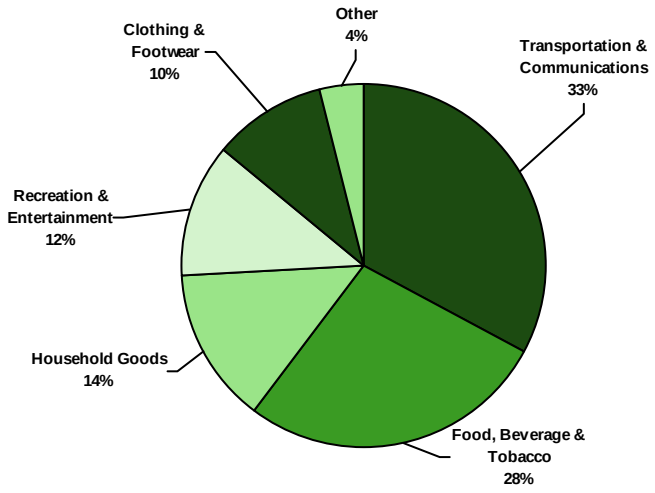
- Another Environics International Survey found that roughly half of the citizens in developed countries feel food safety is an issue of greater concern than nutrition and price of food.[7]

Food Distribution (Retail/Wholesale and Foodservice)

B2.

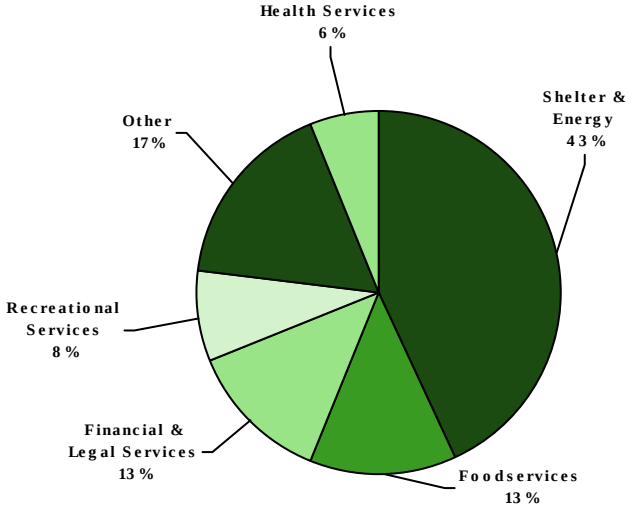
Food distribution is a major part of Canada's consumer goods and services sector

Chart B2.1
Personal Expenditure on Goods, 2001



Source: Statistics Canada.

Chart B2.2
Personal Expenditure on Services, 2001



Source: Statistics Canada and Canadian Restaurants and Foodservices Association.

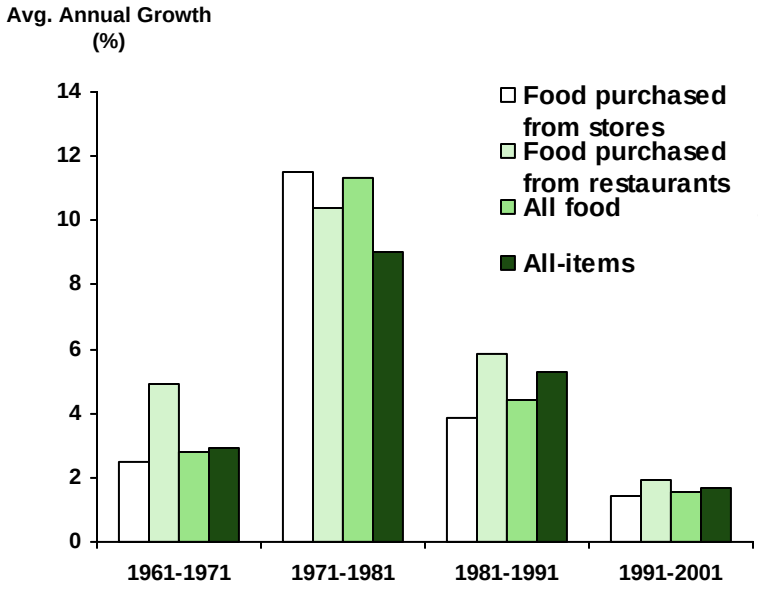
- In 2001, Canadians spent $112 billion on food and beverage products. As such, food and beverage expenditures represent the second largest consumer good expenditure category while foodservice is the third largest service expenditure category.

- The food distribution sector, which includes both food retail/wholesale and foodservice, employs 1.4 million Canadians and accounts for one in every eight jobs in the service sector. It makes up 6% of the service sector GDP.

- Food distribution plays several different roles in the agriculture and agri-food system. It acts as an interpreter of consumer preferences, it performs quality checks and supplies feedback to upstream industries and it acts as quasi-manufacturers with respect to private label development and marketing.

Food price inflation remains under the general inflation rate

Chart B2.3
Consumer Price Indices for Food and Other Goods and Services, 1961- 2001



Source: Statistics Canada.

- With the exception of the 1970s, retail food prices have been increasing at rates just under the rate of general inflation. For example, in the 1990s food prices grew at an average rate of 1.6% per annum against a general inflation rate of 1.7% per annum.
- Food price inflation is measured using a consumption weighted average of the consumer price index (CPI) of food purchased from stores and food purchased at restaurants. The bulk (64%) of consumer food spending is made through retail channels with the remaining 36% through foodservices.

Food retail is becoming more global and consolidated in its operations

Chart B2.4
Top Global Retailers

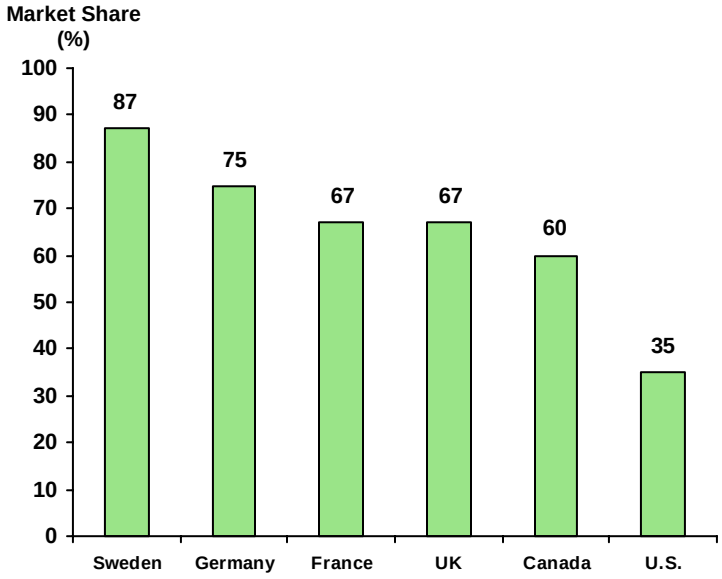
Rank	Company/ Headquarters	Sales (billions US$)	Regions of Operations*
1	Wal-Mart, U.S.	$218	NA, SA, EU, Asia
2	Carrefour, France	62	EU,SA, Asia
3	Ahold, Netherlands	60	NA, SA,EU
4	Kroger, U.S.	50	U.S.
5	Metro, Germany/Switzerland	44	EU
6	Albertsons, U.S.	38	U.S.
7	K-Mart, U.S.	36	U.S., SA
8	Safeway, U.S.	34	U.S., Canada
9	Costco, U.S.	34	NA, SA, EU, Asia
10	Tesco, UK.	34	EU, Asia

Source: Supermarket News, the SN List - Top 25 Global Grocery Retailers, December 30, 2002.

Note: *NA - North America; SA-South America; EU-European Union.

- The world's largest food retailers are expanding internationally beyond their home base to take advantage of new opportunities. As they enter Canada, they bring with them their own procurement, distribution and merchandising systems.

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



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

- The five largest food retailers in Canada account for about 60% of national grocery sales up from 50% a decade ago. While this level of concentration is high, it is consistent with the experiences of the UK and other EU countries. Concentration is lower in the U.S. but is increasing over time, and can be high on a regional basis.

- With consolidation, independent food stores have seen their share of grocery sales gradually erode in favour of chain food stores. In 2001, independents had 42% of the grocery market sales, which is down from 48% a decade ago.

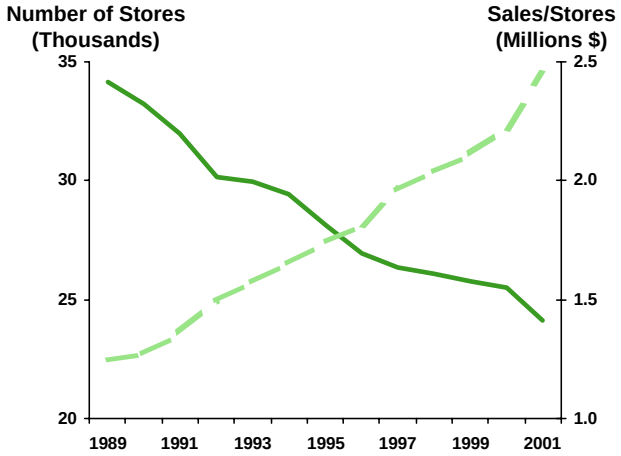
Lines between food and non-food retail are becoming blurred

Chart B2.6
Food Retail Channel Share, 2001

	%
Supermarkets (Grocery Stores)	71
Mass Merchandisers, Gas Stations and Other Service Stations	8
Other Food Stores (e.g. Specialty)	6
Drug Stores	1
Other Retail Stores	71.6

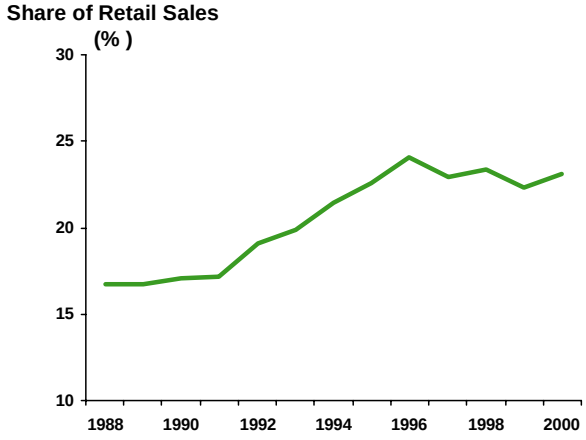
Source: Statistics Canada, The Daily, April 10, 2002 "Food Retail Channel Share 2001".

Chart B2.7
Number of Canadian Food Stores and Average Sales



Source: Canadian Grocer, Statistics Canada and AAFC calculations.

Chart B2.8
Private Label Penetration, 1988-2000



Source: 1999-2000 Canadian Grocer Executive Report 2002, p.7 (based on ACNielsen data); 1988-1998 Globe and Mail Nov.30, 1998 (Nielsen Warehouse Shipments Service).

- Lines between food and non-food retailers /wholesalers are becoming blurred as department stores, pharmacies and gas stations are increasingly selling food items while traditional food retailers/wholesalers have expanded their non-food selections.
- Food retail and wholesale operations remain largely integrated with large retailers also owning wholesale operations.
- Significant store rationalization has occurred during the past decade to achieve efficiency. Investment has been made in larger operations with greater product and service offerings, such as private label products.
- More and more food retailers are using private labels as a business strategy to better respond to consumers' cost sensitivities and/or specific quality demands and to offer better product differentiation.

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

Chart B2.9
Market Share by Foodservice Category 2001

	%
Commercial	**78**
Full service Restaurants	38
Limited-service Restaurants	28
Social and Contract Caterers	6
Pubs, Nightclubs	6
Non-Commercial	**22**
Accomodation Foodservice	10
Institutional Foodservice	6
Retail Foodservice	2
Other Foodservice	4

Source: Foodservice Facts 2002.

- Foodservice includes both commercial and non-commercial categories with commercial accounting for 78% of all foodservice sales in 2001. This is up from 72% in 1990, due to rising consumer demand for convenience.
- Foodservice in Canada remains underdeveloped compared to the U.S. as more Canadians prefer to prepare meals at home.

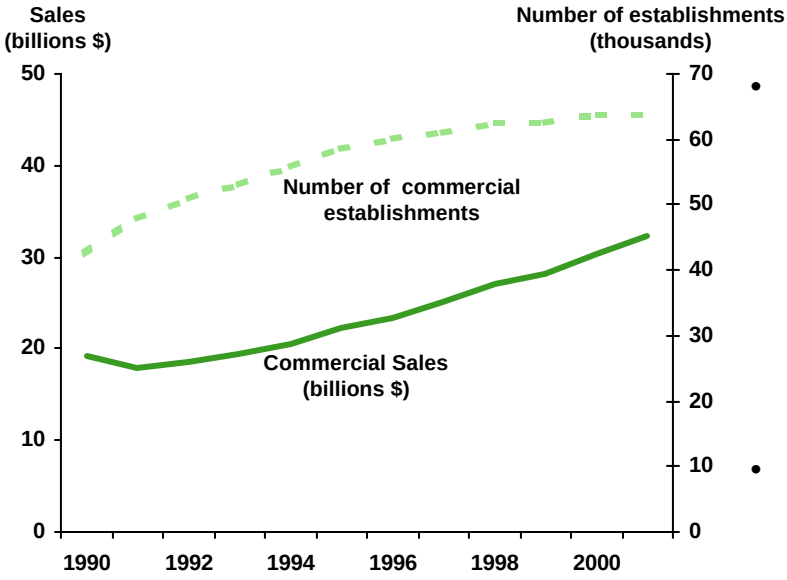
Chart B2.10
Where Canadians Eat Their Meals

	% 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: Foodservice Facts 2002. (Sourced from Eating Patterns in Canada Report 2002, NPD Group Canada Inc.)

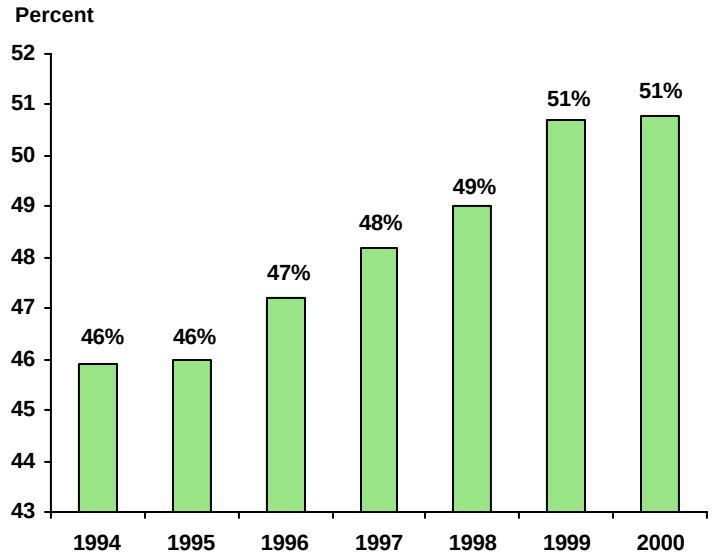
Foodservice is more fragmented than food retail

Chart B2.11
Foodservice Sales and Number of Commercial Establishments



Source: Canadian Restaurant and Foodservices Association.

Chart B2.12
Top 50 Foodservice Companies Share of Commercial Foodservice Sales



Source: Canadian Restaurant and Foodservices Association.

- Foodservice sales in Canada reached $41 billion in 2001 ($32 billion of which were commercial sales). This represents an increase of 53% in a decade. The growth in the number of establishments has tapered off since 1997, averaging 1.3% per year compared to 4.7% per year between 1992 and 1997.

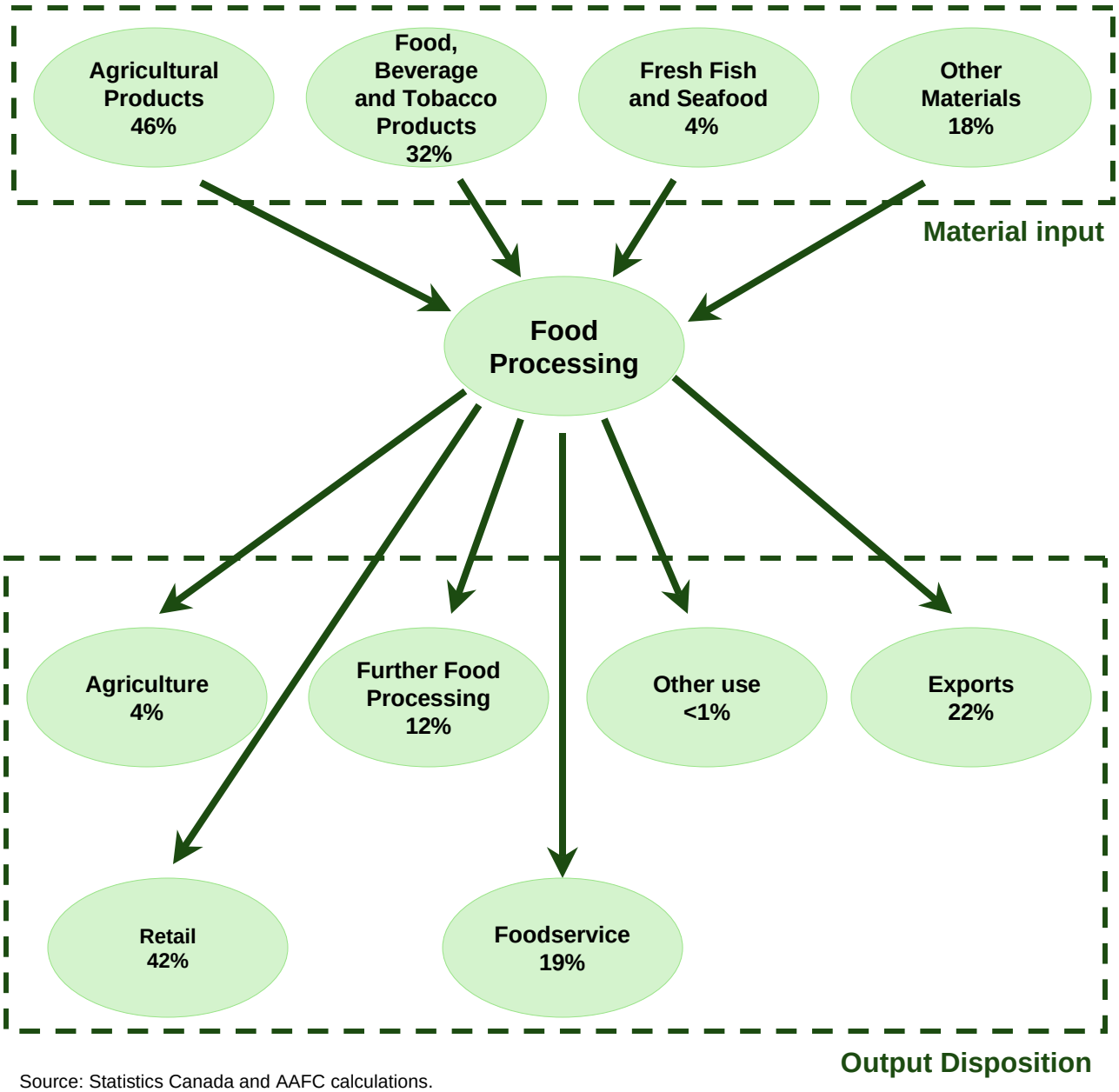
- The commercial foodservice sector had over 64,000 establishments in 2001 and remains quite fragmented with 66% of locations owned by independents compared to chains. Still, concentration is occurring as chain restaurant companies continue to expand. In 2000, the top 50 foodservice companies had 51% of the commercial foodservice sales, up 5% from 1994.

Food Processing

B3.

Food processing is a whole chain of industries...

Chart B3.1
Food Processing Input Composition and Output Disposition in Canada, 1998

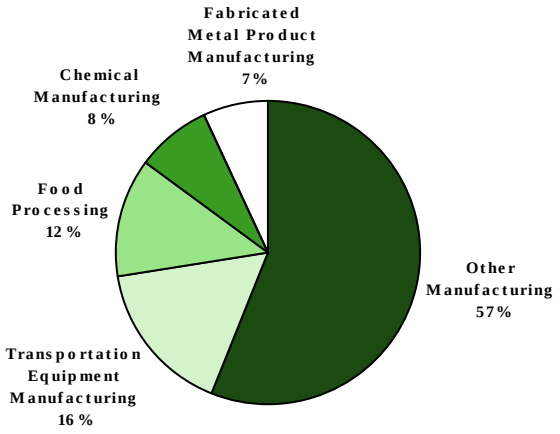


Source: Statistics Canada and AAFC calculations.

- Food processing is in itself a chain of industries ranging from primary processors, such as flour mills and abattoirs, to further processors, such as bakeries and meat canneries.
- A small portion (4%) of processed product feeds back upstream to agriculture producers and input suppliers.

...that are an important and growing part of the manufacturing sector

Chart B3.2
Distribution of Total Manufacturing GDP by Sector, 2001

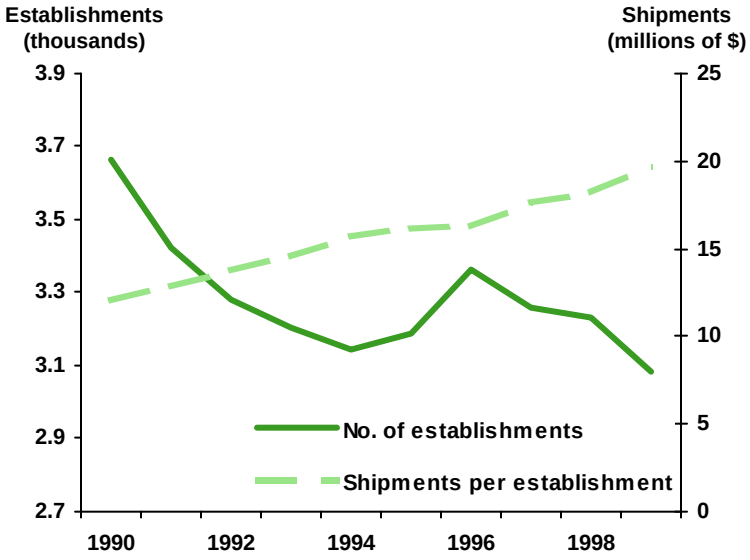


Source: Statistics Canada.

- Food processing is the second largest contributor to total manufacturing GDP in Canada, following transportation equipment manufacturing. In 2001, food processing's share of manufacturing GDP was 12% (food-only accounting for 10% and beverage accounting for 2%).

- Responding to competitive pressures, the trend to fewer but larger food processing plants remains. While scale is important, economies of scope and product differentiation are also important sources of competitiveness in the North American market.

Chart B3.3
Number of Food Processing Establishments and Average Value of Shipments



Source: Statistics Canada and AAFC calculations.

Note: Data has been adjusted to exclude retail bakeries.

Food processing is becoming more international in scope

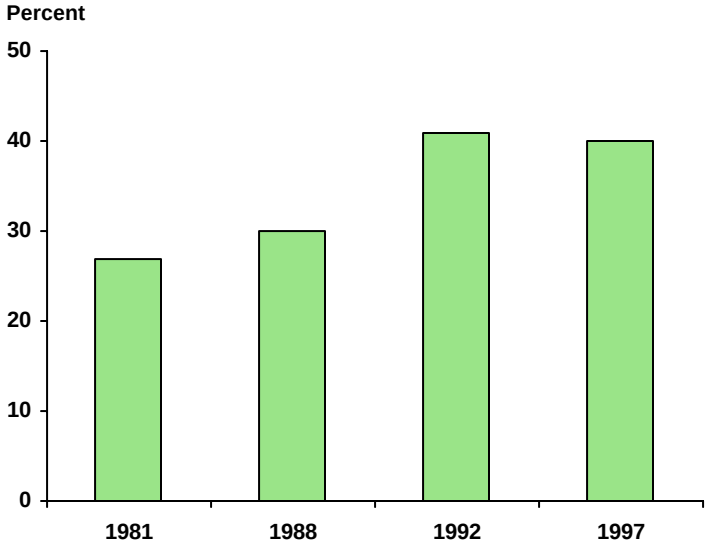
Chart B3.4
Top Global Food Manufacturers

Rank	Company	Sales (billions US$)
1	Nestlé	47
2	Kraft Foods	38
3	Con Agra	28
4	PepsiCo	27
5	Unilever	27
57	McCain Foods	3.8
69	Maple Leaf Foods	3.1
84	George Weston	2.5
95	Saputo	2.2

Source: Prepared Foods, December 2002.

- Food processors are becoming more international in scope. Their global transactions include **intra-industry trade, intra-firm trade** and FDI.

Chart B3.5
Foreign Controlled Establishment Share of Food-Only Shipments

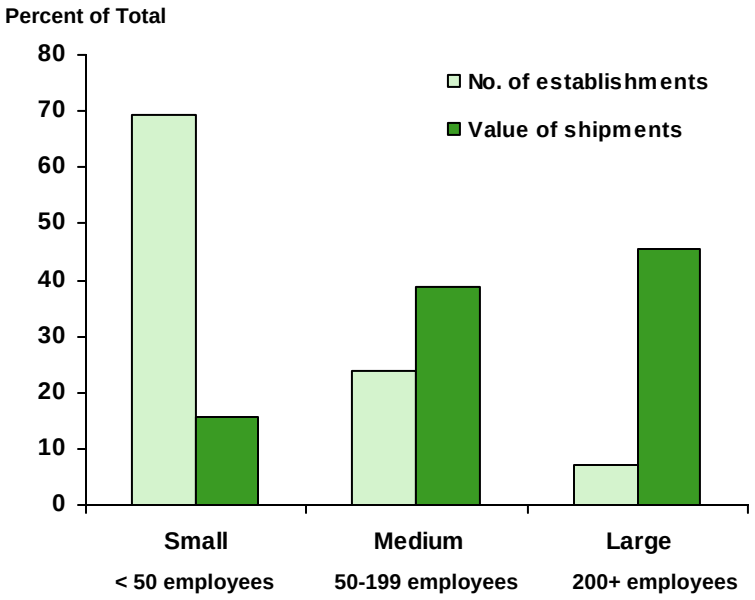


Source: Statistics Canada "Advanced Technology in the Canadian Food Industry, 1999" and AAFC calculation based on Statistics Canada data for 1997.

- FDI in food-only processing was given a boost by the introduction of the Canada-U.S. Free Trade Agreement (CUSTA). Between 1981 and 1992, foreign owned operations' production share rose from approximately 25% to 40%. Since 1992, this share has stabilized at around 40%. In contrast, foreign-owned operations' production share in beverage processing has increased recently with the sale of Seagrams (see discussion in Section A3).

Large food processing establishments produce the bulk of output

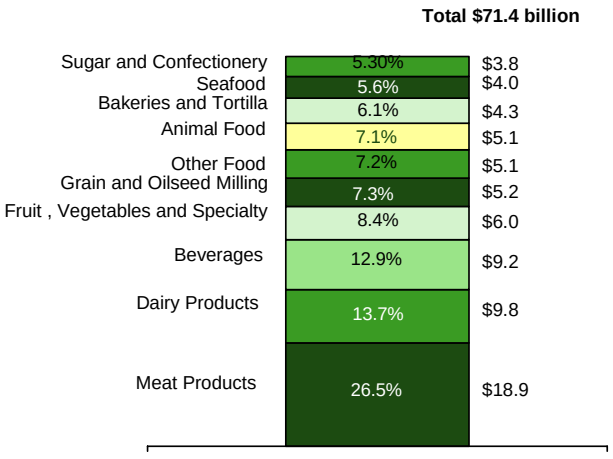
Chart B3.6
Distribution of Canada's Food Processing Shipments and Number of Establishments by Employment Size, 1997



Source: Statistics Canada.

- In 1997 large food processing establishments comprised only 7% of the total number of establishments but accounted for 45% of the value of shipments. In contrast small establishments comprised nearly 70% of the total number of establishments but only accounted for 16% of the total value of shipments.

Chart B3.7
Value of Food Processing Shipments, 2001

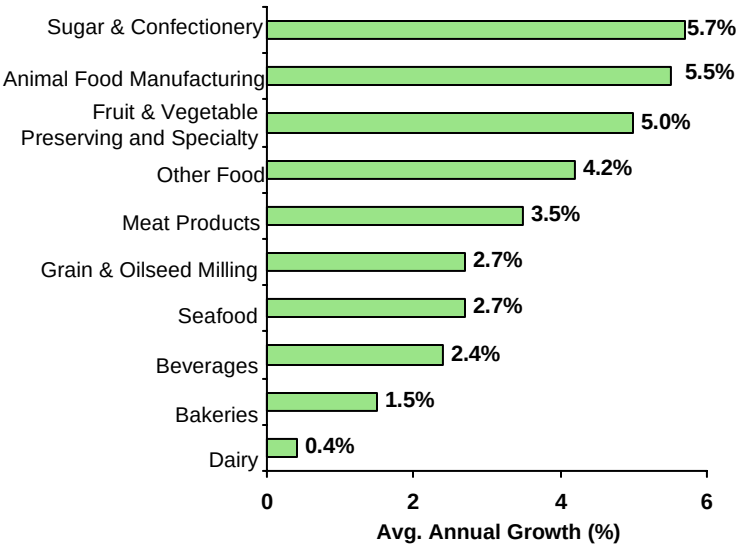


Source: Statistics Canada.

- The largest food processing industry is meat product manufacturing which accounts for one quarter of all shipments or approximately $19 billion in sales. Dairy product manufacturing is the second largest industry with sales of nearly $10 billion followed by beverage manufacturing with sales of $9 billion.

Output growth is strong...

Chart B3.8
Growth of Real Value of Shipments by Food Processing Industry, 1992-2001

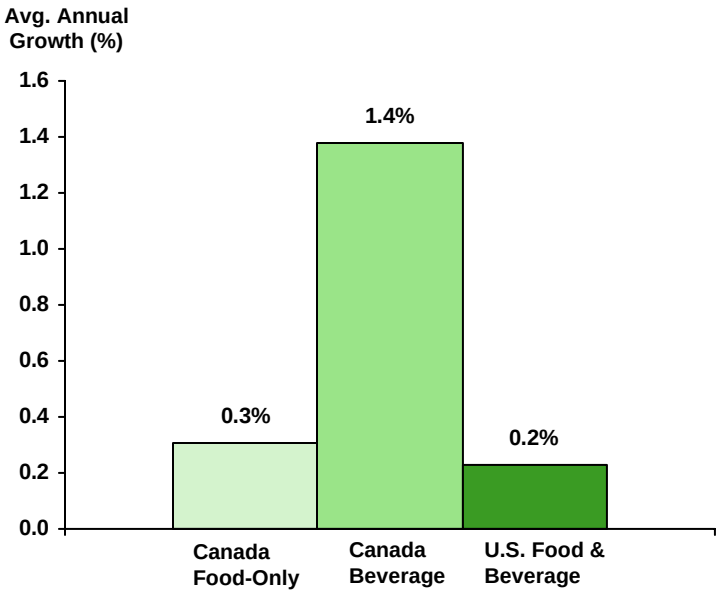


Source: Statistics Canada and AAFC calculations.

- Processed food shipments have been growing over time. In 2001 the value of shipments was $71 billion, up from $45 billion in 1990 (see Chart B3.7).
- Most food processing industries have experienced real average annual growth in excess of 3% since 1992. Sugar and confectionery and animal food products led the growth with rates in excess of 5%.
- Over three-quarters of shipments are destined for Canadian consumers and the rest is exported. The U.S. and Japan account for over 95% of export shipments.

… but productivity growth is not as strong

Chart B3.9
Canadian and U.S. Multifactor Productivity Growth in Food Processing, 1981-1997



Source: Statistics Canada and U.S. Bureau of Labor Statistics.

Note: U.S. productivity statistics do not provide separate estimates for food-only processing and beverage processing.

- Productivity growth accounts for very little of the output growth in food-only processing. This implies that output growth is being sourced in other ways, such as, through increased input usage and cost competitiveness. Cost competitiveness concerns the prices which domestic and foreign consumers have to pay for Canadian products, and the prices which Canadian processors have to pay for their inputs. Two major factors influencing cost competitiveness are the exchange rate and labour compensation rates.

- Similarly, productivity growth also plays only a small part in overall output growth of food processing in the U.S.

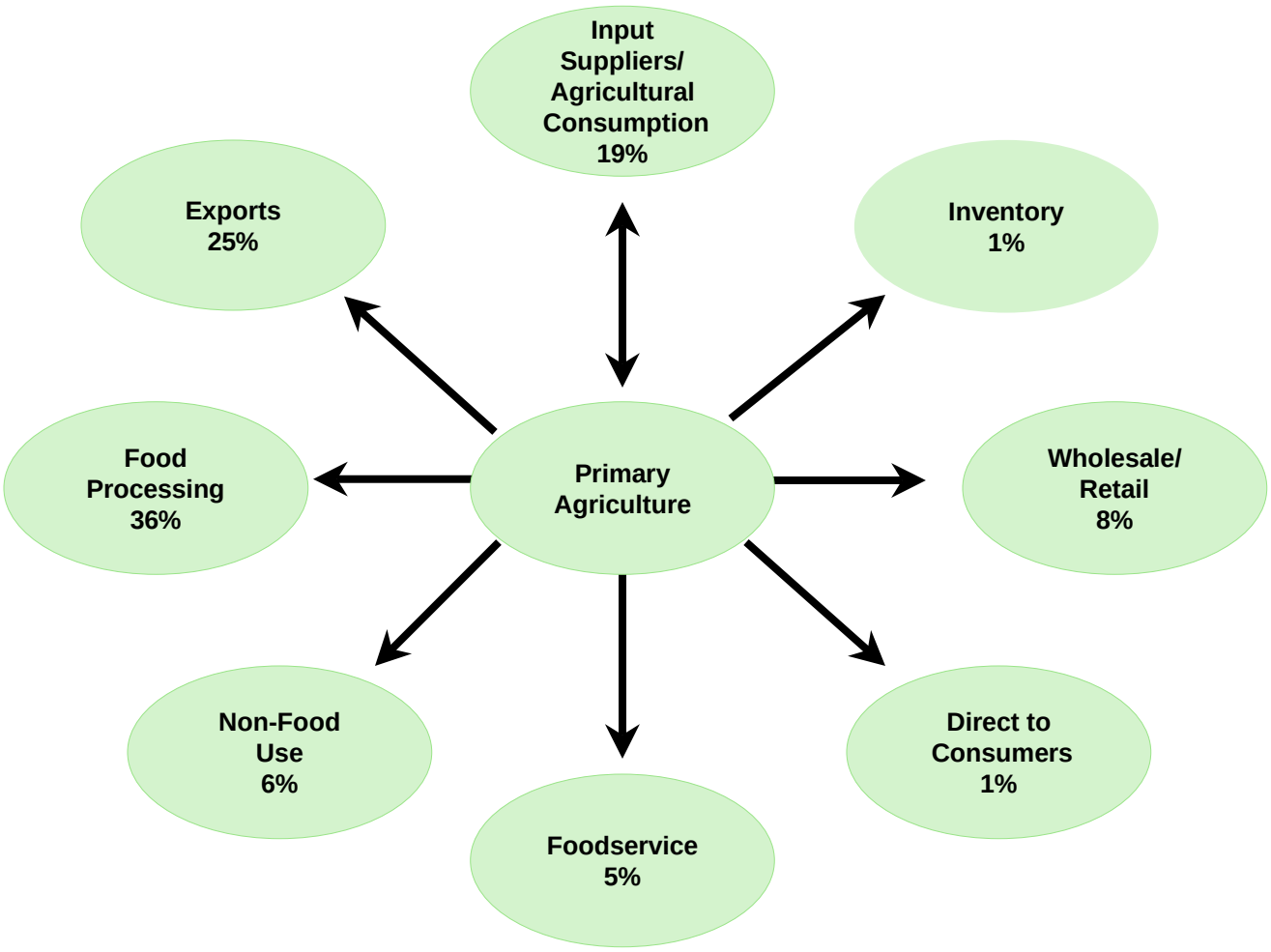
- Productivity in Canadian beverage processing, however, has been growing at an annual average rate of 1.4% per year. The brewery industry accounts for a large part of this productivity growth. By increasing international and domestic market access, the North American Free Trade Agreement (NAFTA) and the Agreement on Internal Trade (AIT) have allowed breweries to rationalize and gain economies of scale, and have encouraged them to invest in new technologies.

Primary Agriculture

B4.

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

Chart B4.1 Disposition of the Value of Agricultural Production 1998

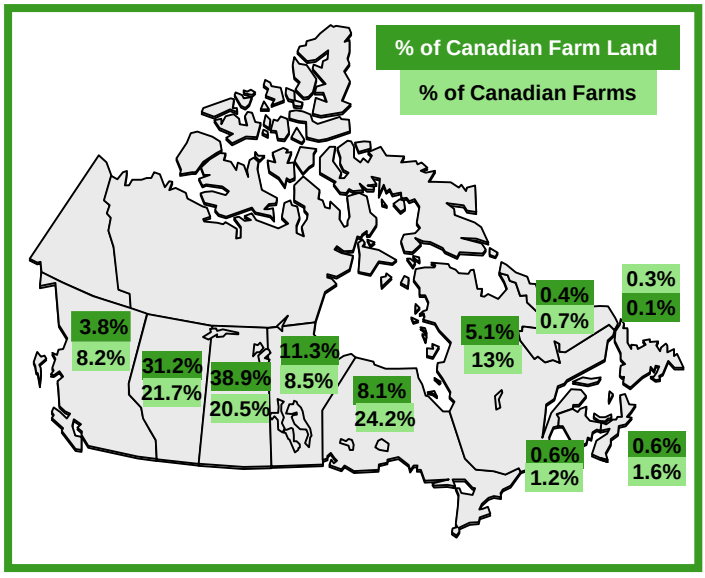


Source: Statistics Canada and AAFC calculations.

- Agricultural producers have many alternative marketing choices. In 1998, 36% of farm production went to food processing, 25% was exported, and another 19% was consumed within the agriculture industry. The latter includes farm-own consumption as well as transfer to other agricultural producers either through direct sales or the medium of input suppliers. Only 1% of farm produce went directly to consumers.

Production occurs across Canada

Chart B4.2
Provincial Shares of Agricultural Production, 2001



Source: Statistics Canada.

Chart B4.3
Number and Size of Farms, 2001

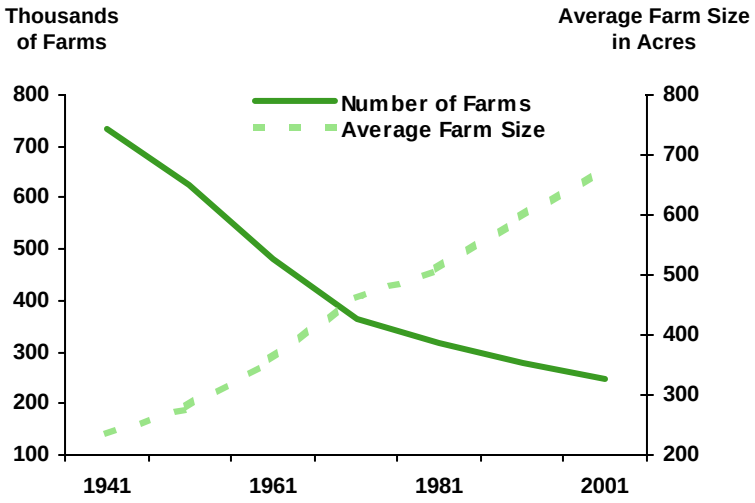
	Farmland (Thousands acres)	Farms (No.)	Avg. Farm Size (acres)	Farm Operators (No.)	Farm Employment (No.)
Canada	**166,802**	**246,923**	676	**346,195**	**293,000**
Nfld.	100	643	156	780	600
P.E.I.	646	1,845	350	2,455	3,700
N.S.	1,006	3,923	256	5,080	6,500
N.B.	959	3,034	316	3,895	5,700
Que.	8,444	32,139	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	1283	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.

- 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.
- Farm size varies across Canada. The average farm size in Ontario is around 230 acres. The average farm size in Saskatchewan is nearly 6 times this size or 1,300 acres.
- There are more farm operators than there are farms because of partnerships and other joint ownership arrangements. The 2001 Census allowed respondents to report up to 3 operators per farm.
- There are also more farm operators than there are people reported in farm employment. 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.
- Employment per farm is correlated to farm size, commodity specialization, availability of off-farm employment and farm typology group (see chart B4.24).

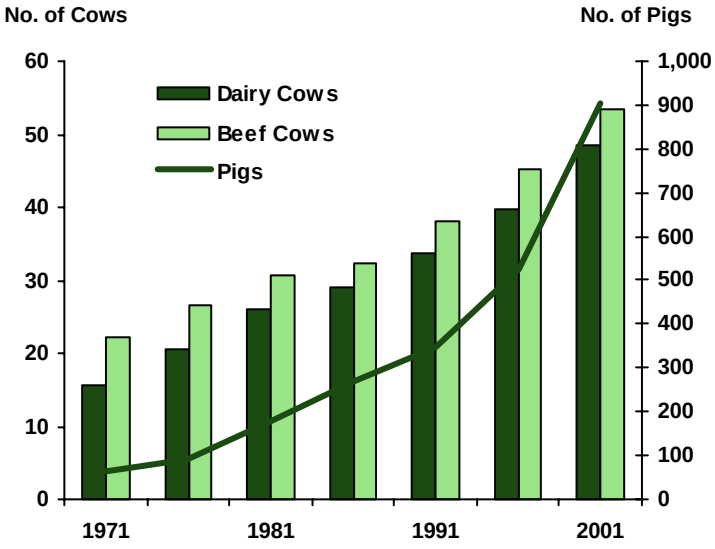
Average farm size is increasing...

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



Source: Statistics Canada.

Chart B4.5
Average Herd Size, 1971-2001



Source: Statistics Canada and AAFC calculations.

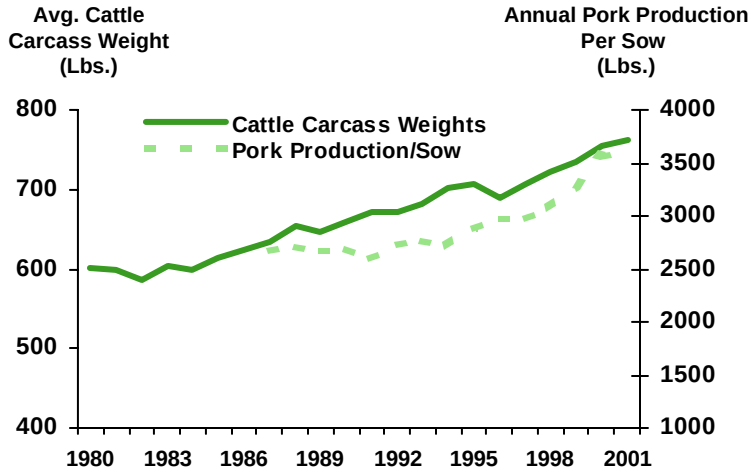
- There is a general trend towards increasing scale of operation and consolidation in agricultural production reflecting the large productivity gains that have occurred in agricultural labour and capital inputs.

- Over the last 60 years, farm size has been steadily increasing in terms of land area, and the average farm size is now 676 acres. Farm size is also increasing in terms of herd size. For example, 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.

- This expansion in farm size, however, has not been obtained at the expense of the family farm. 98% of all farms are still family owned and operated.

… while yields are growing

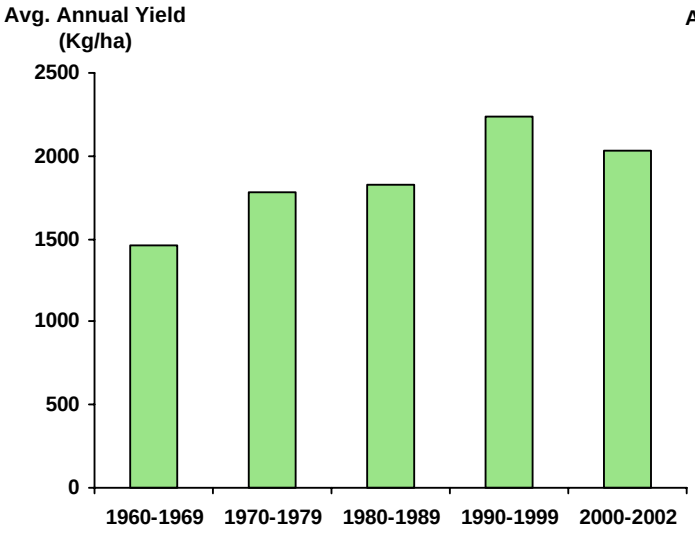
Chart B4.6
Livestock Yields 1980-2001



Source: Canadian Beef Grading Agency and Statistics Canada.
Note: Data for pork production begins in 1987.

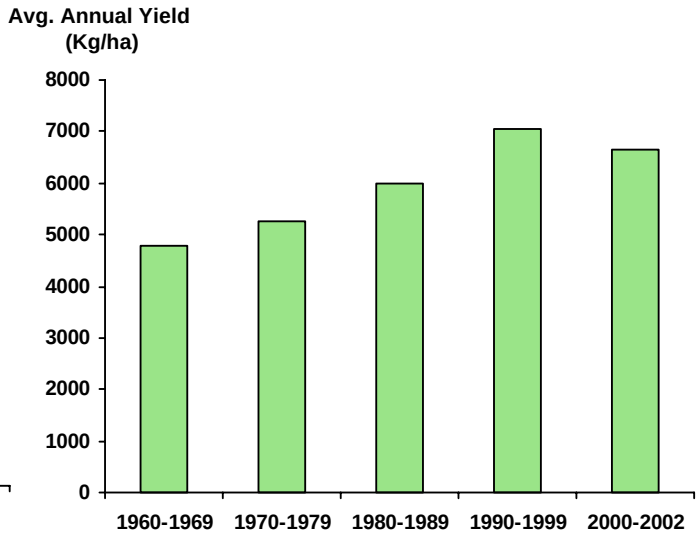
- Livestock and crop yields have been increasing over time as a result of genetics, biotechnology and better management practices. For instance, over the last 20 years cattle carcass weights have increased by 33%. Larger litter sizes in the last 7 years have resulted in a 25% increase in pork production per sow. Similarly, crop yields have also seen a steady growth but droughts over the last couple of summers have had a temporary impact on crop yields.

Chart B4.7
Spring Wheat Yields, 1960-2002



Source: Statistics Canada.

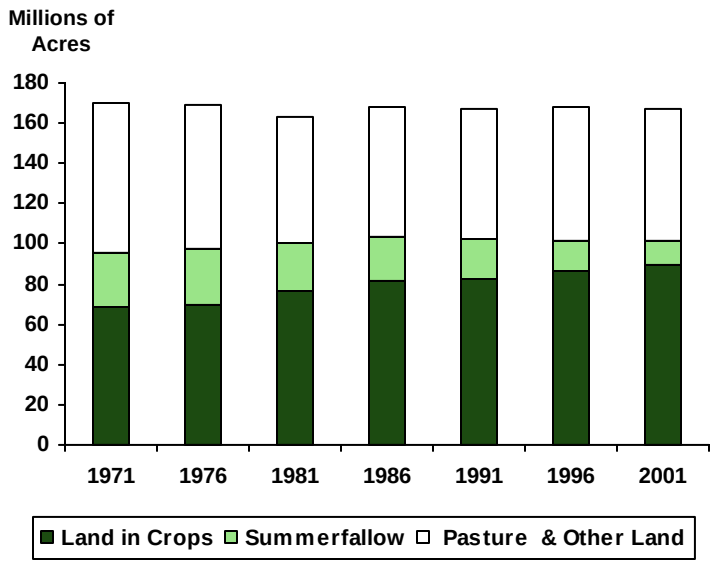
Chart B4.8
Corn Yields, 1960-2002



Source: Statistics Canada.

Improved management technologies are reducing the need for summerfallow

Chart B4.9
Land Use, 1971-2001



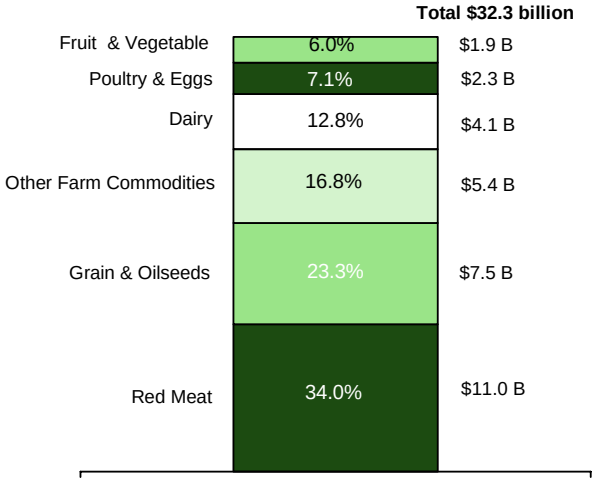
Source: Statistics Canada.

- 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.

- The productivity of cultivated land varies across the country depending on soils and climate. Over the last 30 years there has been a strong decline in summerfallow area in the Prairies and a corresponding increase in land in crops. The decline in summerfallow has been enabled by the adoption of improved land management and farming techniques.

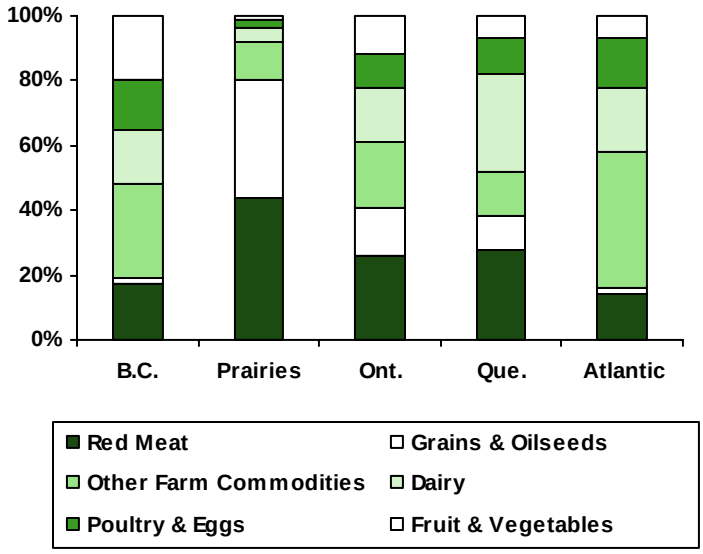
Canada's agriculture industry is diverse

Chart B4.10
Farm Market Receipts by Commodity, 2002



Source: Statistics Canada.

Chart B4.11
Regional Farm Market Receipts by Commodity Share, 2002



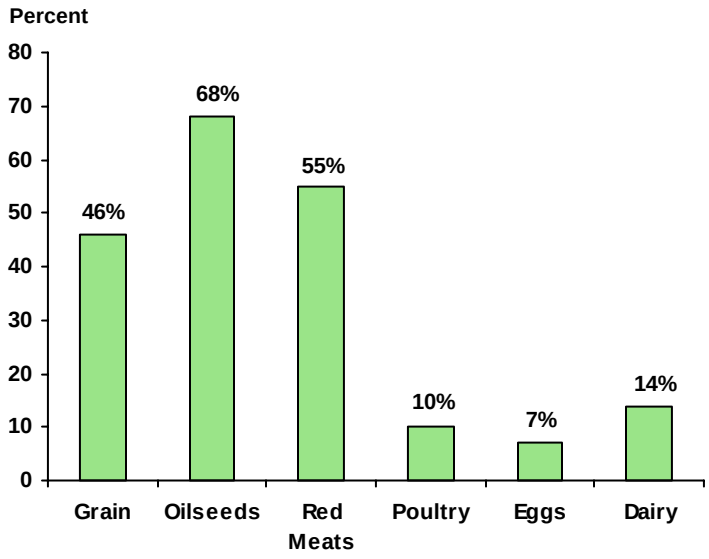
Source: Statistics Canada.

- There is diversity in commodity specialization across Canada. Overall, red meats, grains and oilseeds and dairy are the most important commodities. They contribute in farm market receipts 70% of the $32.3 billion total.

- However, 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 account for over 80% of market receipts. In Ontario and Quebec, red meats and dairy dominate market receipts. In Atlantic Canada, potatoes and dairy are the most important commodities.

A large proportion of farm cash receipts come from exports

Chart B4.12
Portion of Farm Market Receipts from Export Sales, 2001
(measured in volume terms)



Source: AAFC calculations based on Statistics Canada and AAFC data.

- In 2001 grain and red meat producers earned around half of their cash receipts from the export market and oilseeds producers nearly 70% of their cash receipts. Grain and oilseed producers have always been very export dependent. The export dependency of red meat producers has nearly doubled over the last decade from 30% in 1991 to 55% in 2001.

- Dairy and poultry producers are largely dependent on the domestic market for their income. With the new WTO ruling on Commercial Export Milk (CEM), dairy exports may be reduced by as much as 50% in the 2003 dairy year (August–July).

Some changeover is occurring, but farm operators are getting older

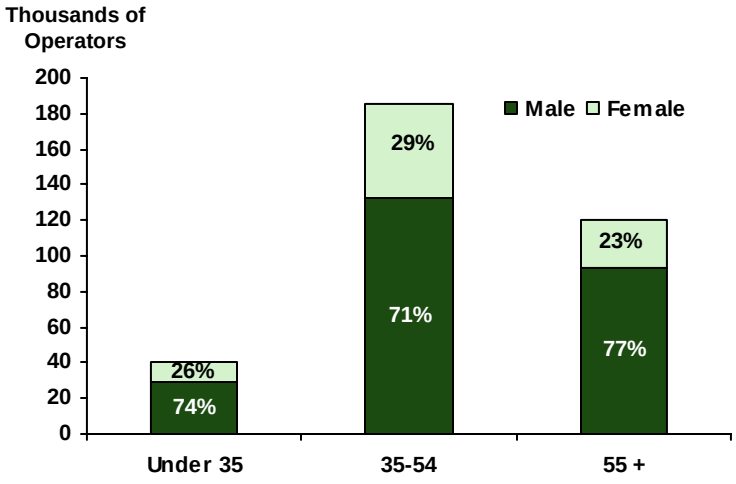
Chart B4.13
New Entrants and Exits in Agricultural Production, 1995-2001

	1995-2001
New Entrants	50,000
Exits	-79,625
Net Decrease	-29,625

Source: Statistics Canada, The Daily, Wednesday, May 15, 2002.

- The long term trend of declining farm numbers masks the internal dynamics that are ongoing in the agricultural labour force.
- While nearly 80,000 people quit farming between 1995 and 2001, there were another 50,000 new entrants.
- The vast majority of farm operators are male and are over the age of 35. In 2001, over one-third of total farm operators were over the age of 55 while only 12% were under the age of 35. While this partly reflects the age distribution of the entire population, it does raise concerns about the next generation of farmers.

Chart B4.14
Farm Operators by Sex and Age, 2001

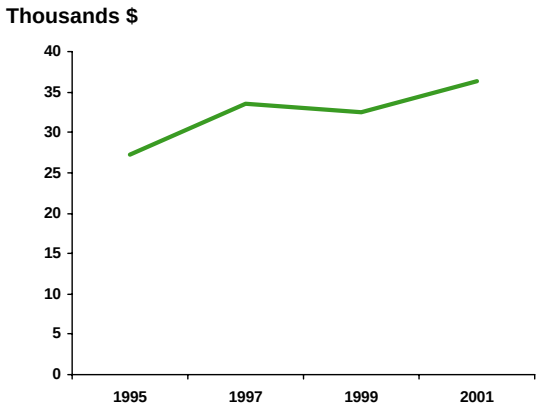


Source: Statistics Canada.

Note: The Census of Agriculture allows respondents to report up to three operators per farm.

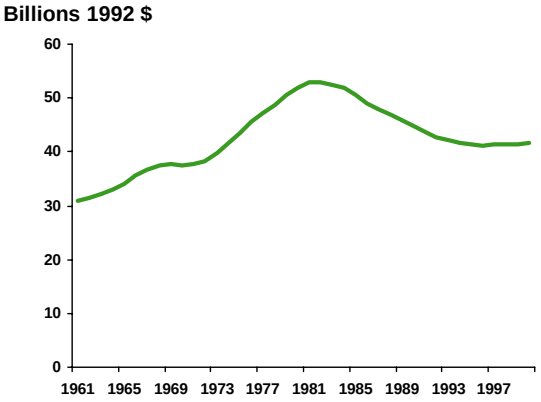
More efficient capital use is helping to grow net worth

Chart B4.15
Average Farm Net Capital Investment, 1995-2001



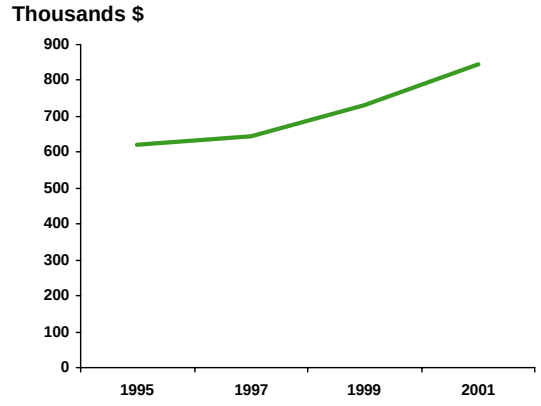
Source: Statistics Canada and AAFC.

Chart B4.16
Capital Stock in Primary Agriculture, 1961-2000



Source: Statistics Canada.

Chart B4.17
Average Farm Total Net Worth, 1995-2001

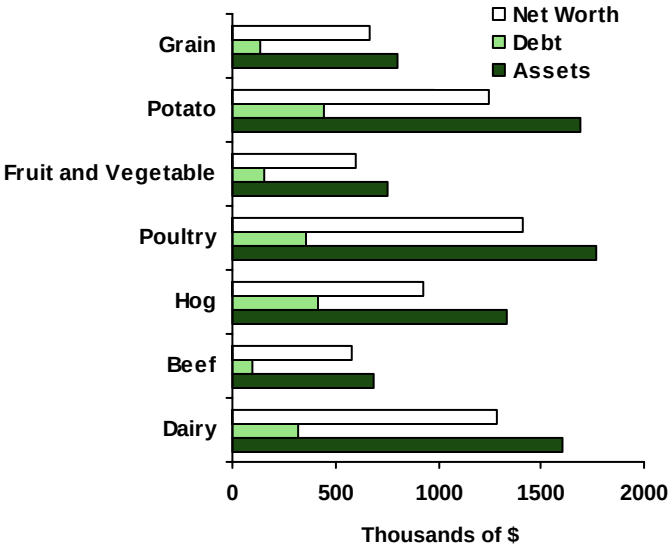


Source: Statistics Canada and AAFC.

- On a per farm basis average net capital investment has been increasing both in nominal and real terms since 1995.
- However, the last couple of decades have seen an overall decline in total capital stock in primary agriculture. Most of this decline is with respect to farm machinery and equipment. This trend is common in the U.S. Among other things, it reflects a consolidation in farms and the more efficient use of machinery and equipment, which in turn has shown up as large productivity gains.
- The growth in net investment by individual farms is helping to grow their net worth. The average farm's total net worth has grown from $621,000 in 1995 to $844,000 in 2001.

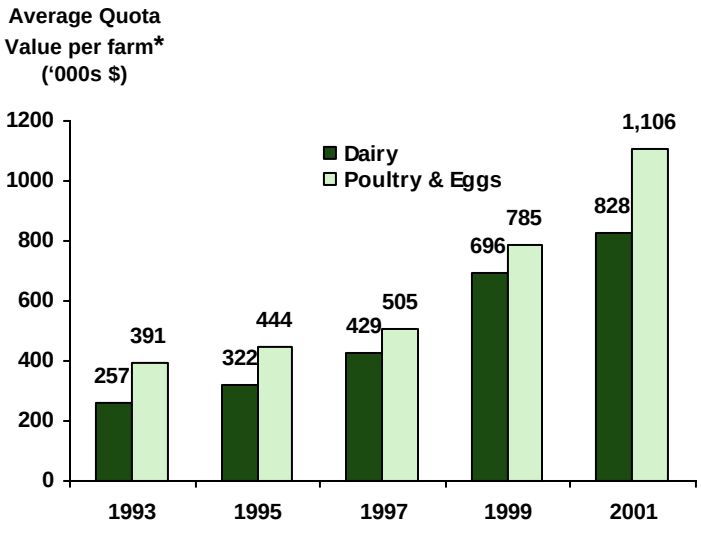
Farm net worth varies across industries

Chart B4.18
Average Assets, Liabilities and Net Worth by Farm Type, 1999



Source: AAFC.

Chart B4.19
Average Quota Value for Supply Managed Farms, 1993-2001



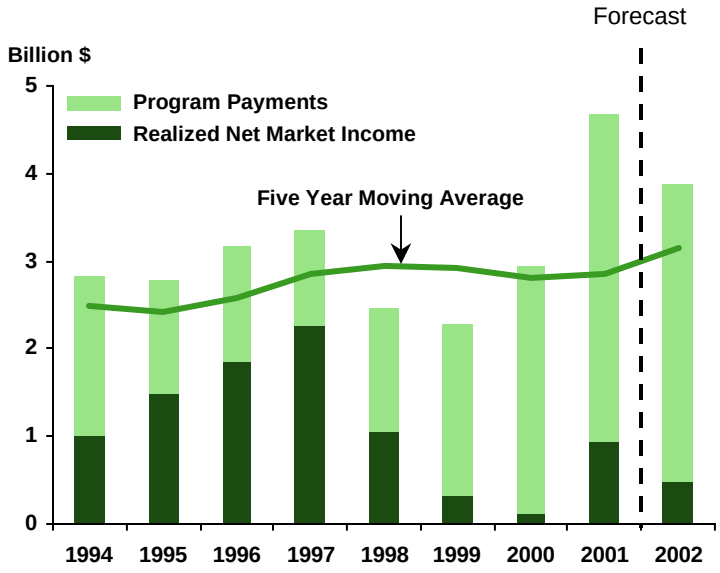
Source: Statistics Canada and AAFC.

Note: *Market Value.

- Net worth is increasing for all farm types. On average poultry, dairy and potato farms have the highest net worth (exceeding $1 million in 1999).
- Quota values in the supply managed industries have grown significantly in recent years, and now account for a substantial proportion of the total assets of these types of farms. For example, in 1999 the average dairy farm had around $0.8 million worth of quota, which accounted for nearly two-thirds of its total farm assets of around $1.3 million.
- Potatoes and hog farms carry the largest debts (exceeding $400,000 per farm) followed by poultry and dairy (exceeding $300,000 per farm).

Program payments have helped to stabilize farm income

Chart B4.20
Total Realized Net Farm Income

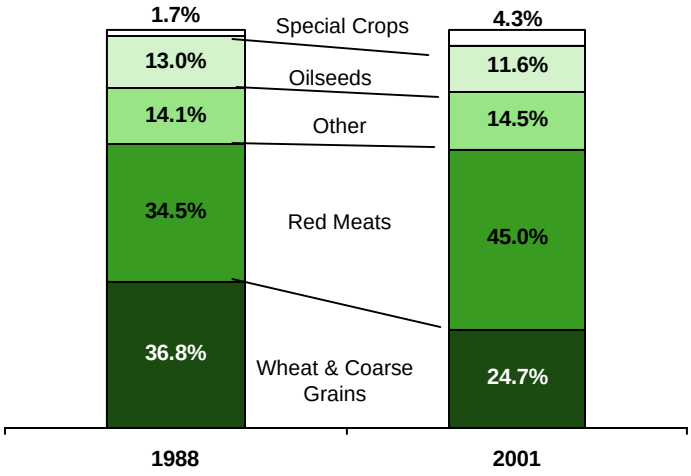


Source: Statistics Canada and AAFC.

- Realized net market income has fluctuated over the 1990s due to variations in marketing and production conditions. Program payments, however, have helped to minimize variations in realized net farm income. For example, program payments are expected to keep realized net farm income above the 1997-2001 five year average in 2002 despite the impact of the Prairie drought.

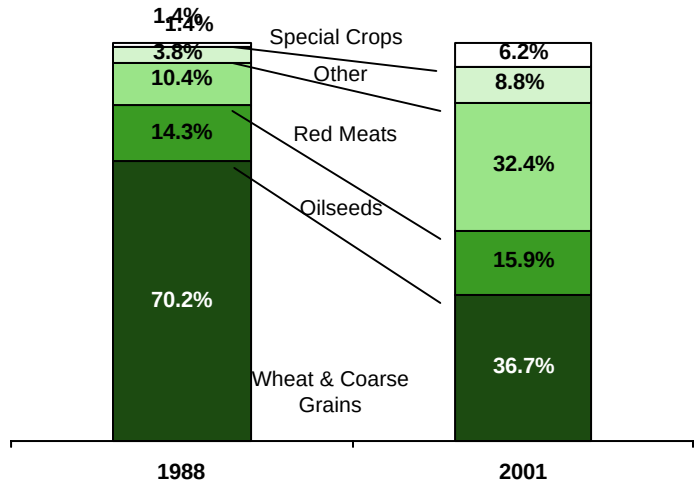
Individual producers are diversifying production mix

Chart B4.21
Evolution of Prairie Farm Market Receipts by Commodity - 1988 and 2001



Source: Statistics Canada and AAFC calculations.

Chart B4.22
Evolution of Prairie Exports by Commodity - 1988 and 2001

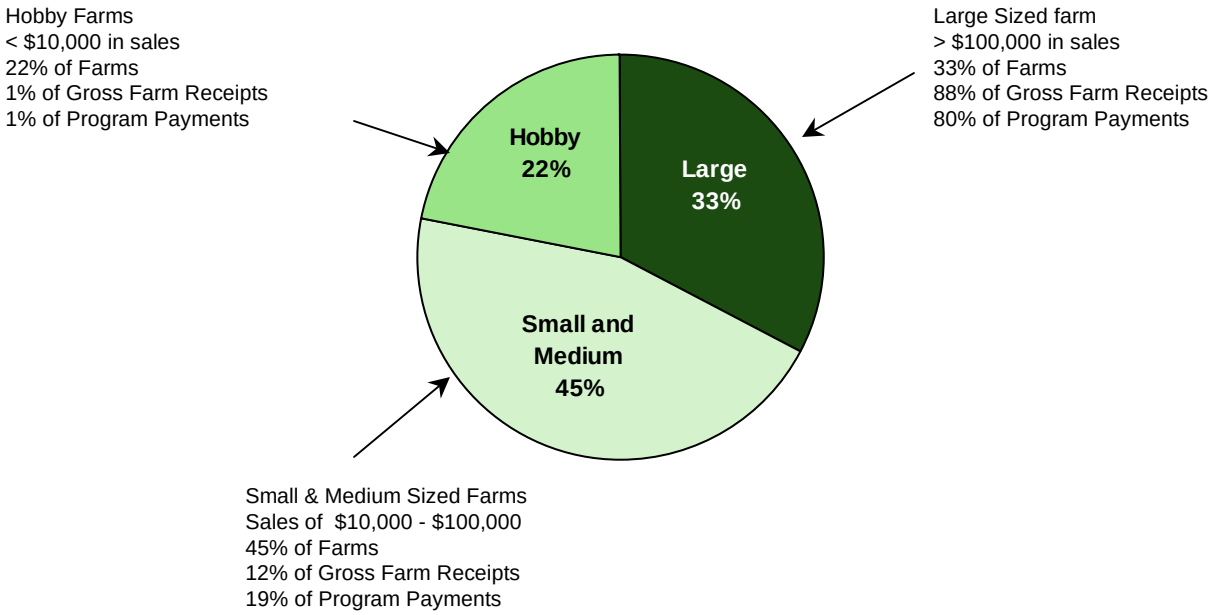


Source: Statistics Canada and AAFC calculations.

- Farmers are continuously adjusting to changes in market conditions. This trend has been clearly evident in the Prairies where there has been significant diversification in production. Among other factors, this diversification reflects declining grain prices and domestic policy reforms such as the elimination of the Western Grain Transportation Act in 1995.
- Grain's share of Prairie market receipts has dropped from 37% in 1988 to around 25% in 2001, with a corresponding rise in the shares of red meats and special crops.
- Translated into export shares the change is even more dramatic. Red meats' share of Prairie exports has tripled and special crops' share has quadrupled, while the share of wheat and coarse grains has declined by almost half.

Their scale of operation is also diverse

Chart B4.23
Distribution of Canada's 247,000 Farms by Sales, 2001



Source: Statistics Canada.

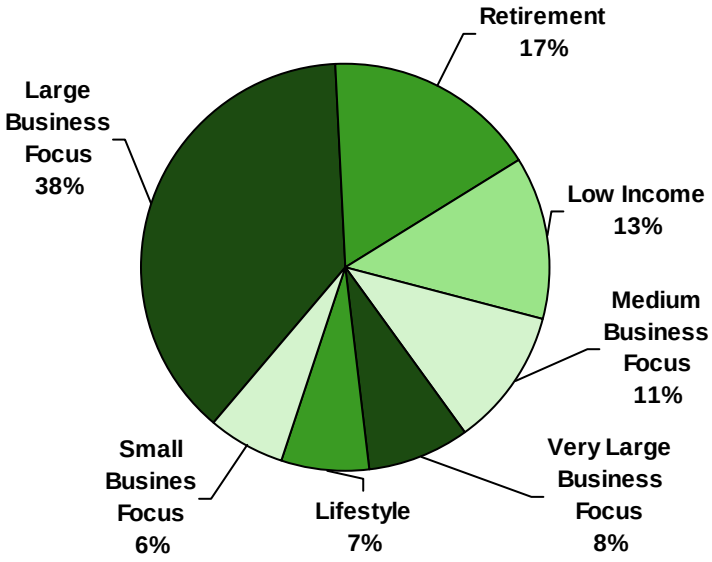
- While only one third of census farms are large with sales over $100,000, these farms account for nearly 90% of farm production and receive 80% of agricultural program payments.
- Small and medium sized farms account for nearly half of all farms in Canada, but account for only 12% of production and 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.

Motivation for farming differs

Chart B4.24
Farm Typology Groups

- Retirement - farms managed by an operator 60 years of age or older
- Lifestyle - small 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-focused - all other family farms
  - Small - revenues of $10,000 - $49,000
  - Medium - revenues of $50,000 - $99,999
  - Large - revenues of $100,000 - $499,000
  - Very Large - revenues of $500,000 and over
- Non Family Farms - Hutterite Colonies, other commercial operations, non-family corporations, and co-operatives.

Chart B4.25
Distribution of Farms with $10,000 in Sales or More by Typology Group, 2001



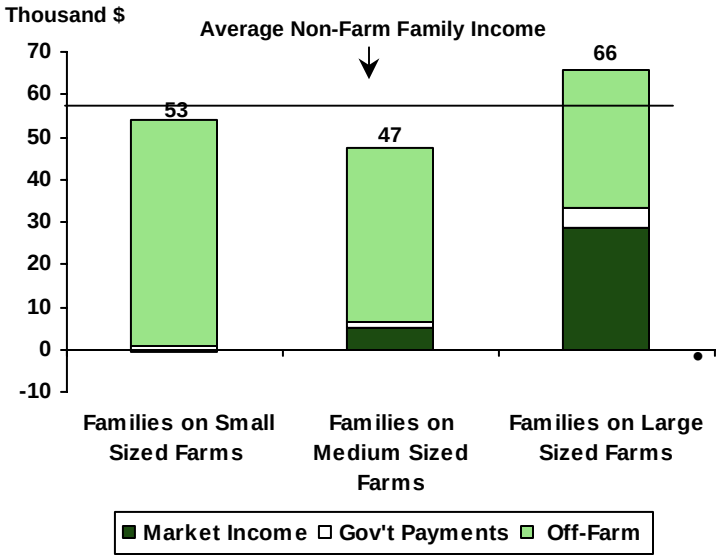
Source: Statistics Canada and AAFC.

- Different people farm for different reasons. Some people farm just as a hobby. All farms earning less than $10,000 in sales are classified as hobby farms. There are 54 thousand hobby farms in Canada.

- The remaining 193 thousand farms with sales greater than $10,000 can be further segmented based on age, business motivation and financial situation (see Chart B4.25). Of these, Retirement and Lifestyle farms account for approximately one-quarter. Another 13% are farms that have a total income less than $30,000. The remaining 63% of farms are business focused and can be further categorized according to their scale of operation, ranging from small sized farms to very large sized farms.

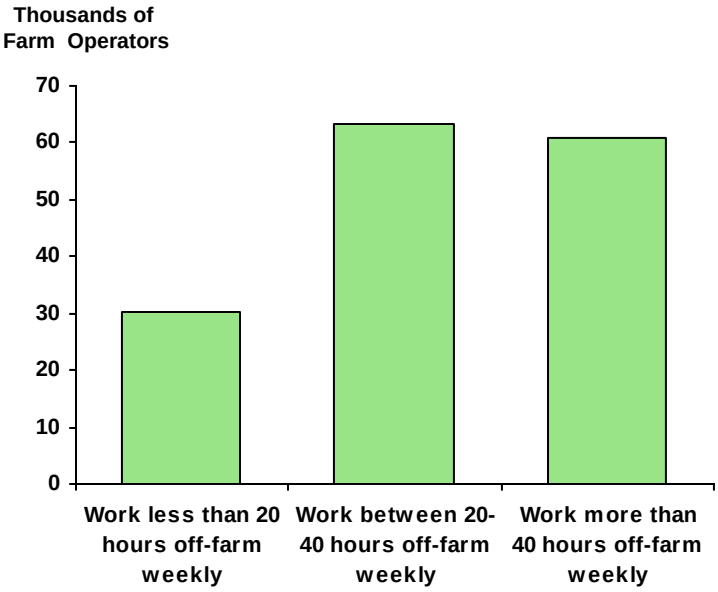
On average, farm family income compares to the rest of the economy

Chart B4.26
Farm Family Income by Sales Class, 1998



Source: Statistics Canada.

Chart B4.27
Farm Operators Off-Farm Employment, 2001



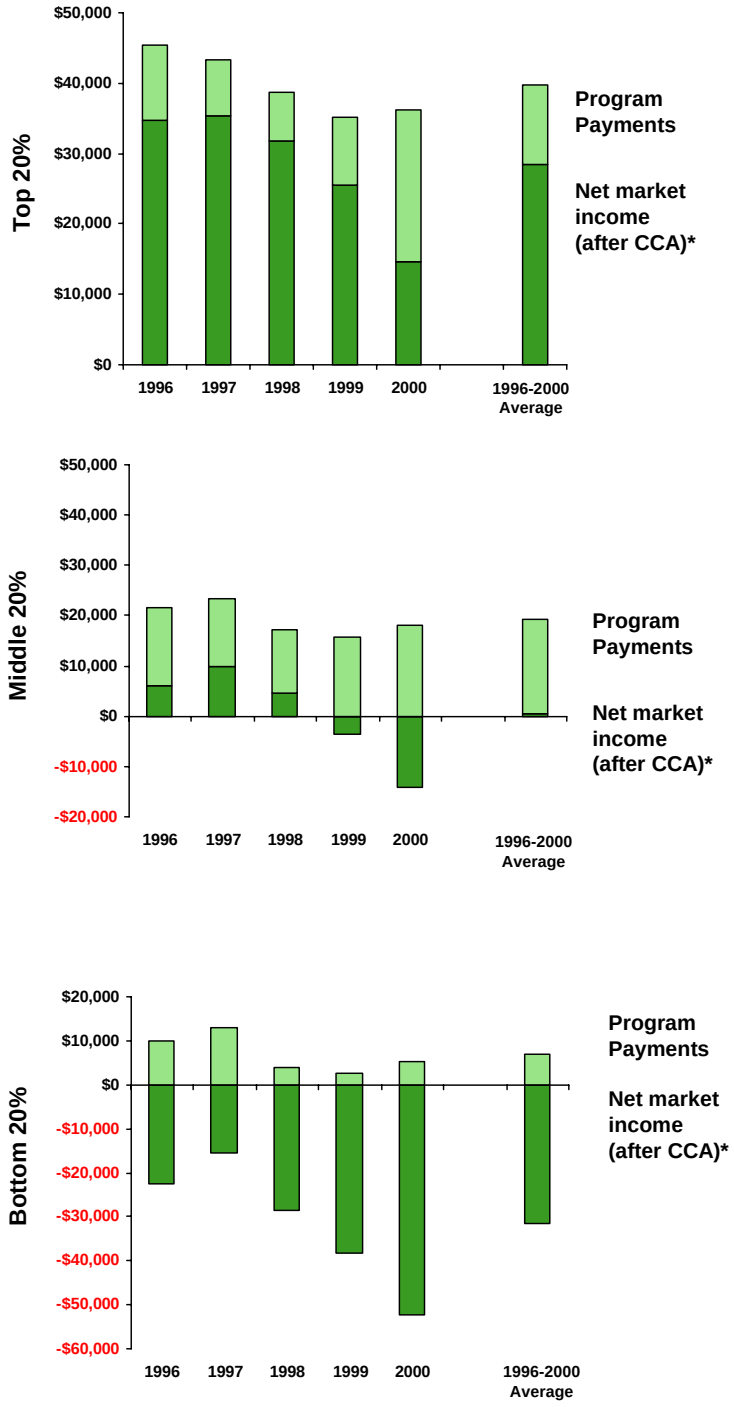
Source: Statistics Canada.

- Average farm family income is comparable to the average income received by non-farm families. When all income sources are taken into account, families on small and medium-sized farms have income slightly below the average of non-farm families. Families on large sized farms have income above the average.

- For most farm families, a significant part of family income comes from off-farm sources. In 2001 nearly 45% of all farm operators earned some portion of their family income from off-farm work. Even operators on farms with sales greater than $100,000 earn about one-half of their family income off the farm. Small and medium size 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.

Performance varies among farm operators

Chart B4.28
Net Income of Large Canadian Grain and Oilseed Farms, 1996-2000



- Financial performance varies among farm operators, even among producers operating the same size farm with the same commodity specialization. These variations in performance are consistent over time. Top performers tend to receive most of their income from the market while the bottom performers tend to be more dependent upon program payments.

Source: NISA Database.

Note: *CCA - Capital Cost Allowance.

Producers tend to continue operating at the same performance level over time

Chart B4.29 Number of Large Manitoba Grain and Oilseed Farms Remaining in a Specific Quintile for Three or More Years, 1996-2000

Quintile	Bottom 20%	Top 20%
0-20	314	0
20-40	68	0
40-60	5	7
60-80	1	75
80-100	1	335

Source: NISA Database and AAFC calculations.

- Producers tend to continue operating at the same performance level over time. Top performers remain in the top income quintiles while bottom performers remain in the bottom income quintiles.

Farm size is not a limiting factor in performance

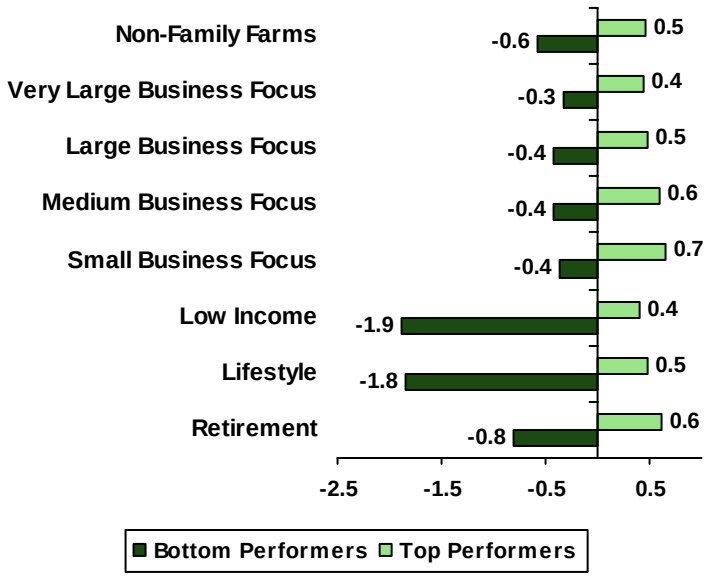
Chart B4.30
Selected Average Expenses of Manitoba Large Grain and Oilseed Farms, 1996-2000

Costs	Bottom Performers	Top Performers
Salaries and Wages	$19,166	$9,523
Fertilizer	$44,935	$31,804
Pesticides	$30,846	$24,124
Fuel	$13,510	$9,361
Repairs	$17,195	$9,736
Interest	$10,111	$50,555

Source: NISA Database and AAFC calculations.

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

Chart B4.31 Gross Margin Ratios reported by Top and Low 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.

- 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. For example, the top performers among producers operating large grain and oilseed farms in Manitoba have, on average, lower annual expenses than do the bottom performers.

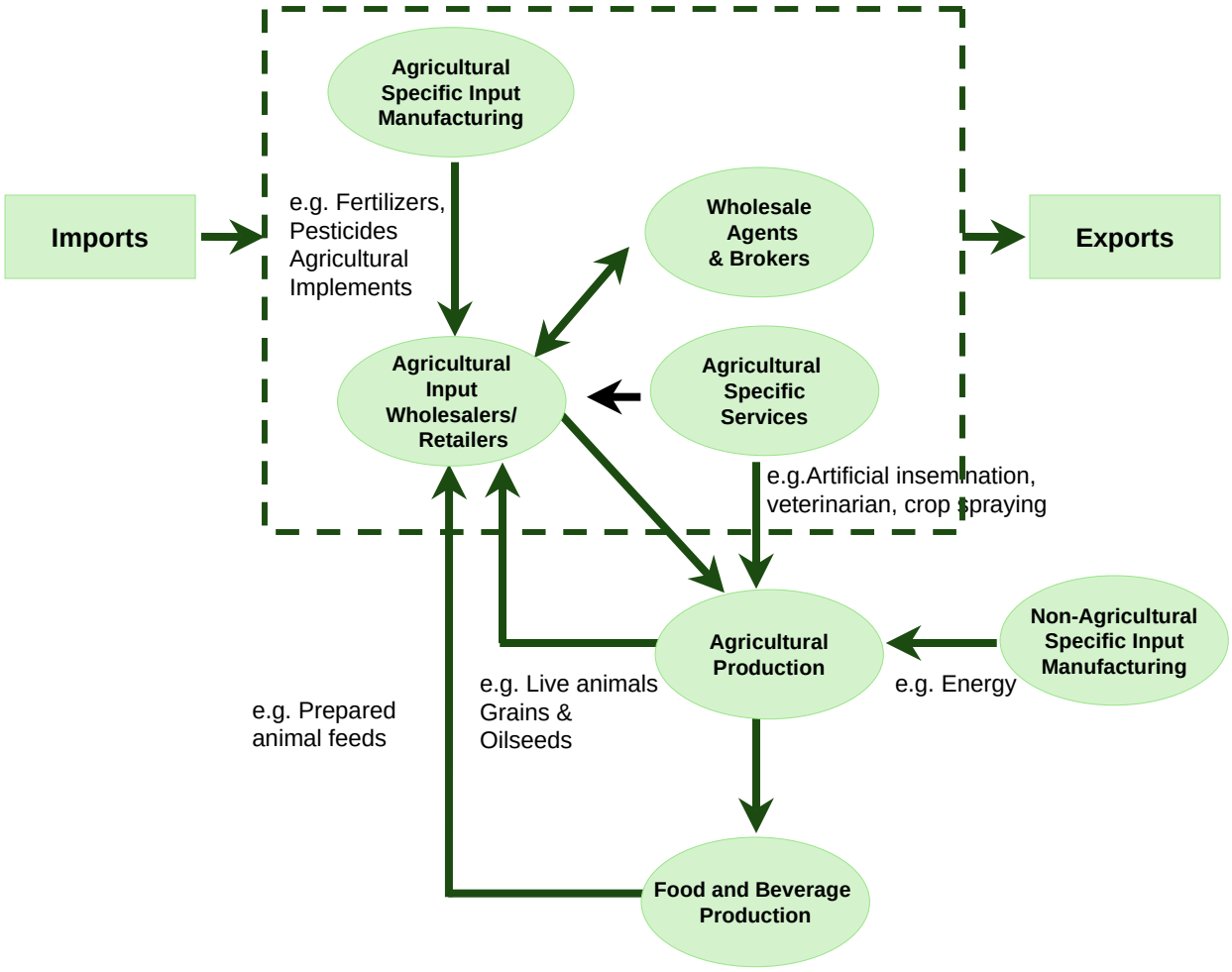
- Farm size, however is not a limiting factor in financial performance. Top performers operating small sized farms can generate a gross margin ratio comparable to top performers operating large sized farms.

Agricultural Input and Service Suppliers

B5.

Input suppliers are a whole value chain

Chart B5.1 Agriculture Specific Input and Service Suppliers

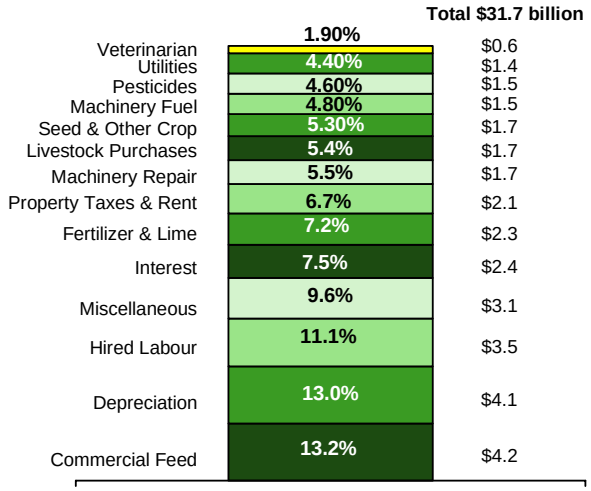


- In 2001 agricultural specific input and service suppliers contributed nearly $7 billion in constant 1997$ to total GDP. They constitute a whole value chain within the agriculture and agri-food system that includes manufacturing, service and retail/wholesale activities. They supply and support primary 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 in nature 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.

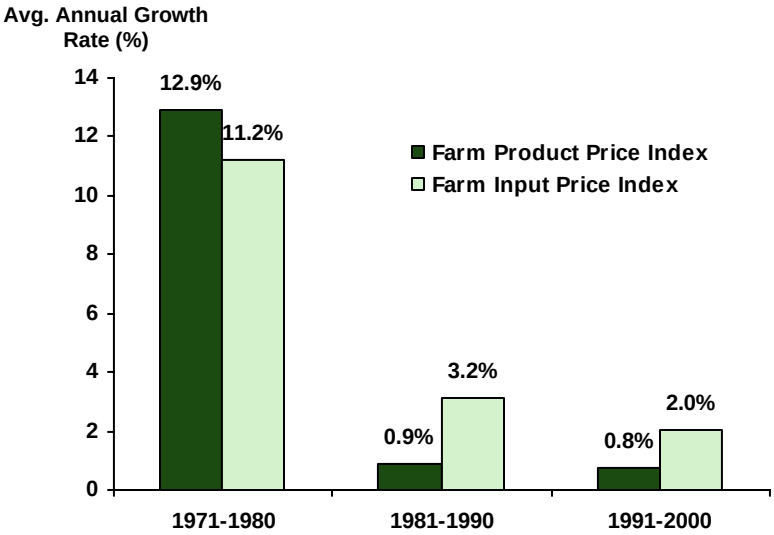
Input costs have been rising over time reflecting high input demand and significant changes in quality

Chart B5.2
Farm Expenses, 2001



Source: Statistics Canada.

Chart B5.3
Farm Input Prices and Farm Product Prices, 1971-2000



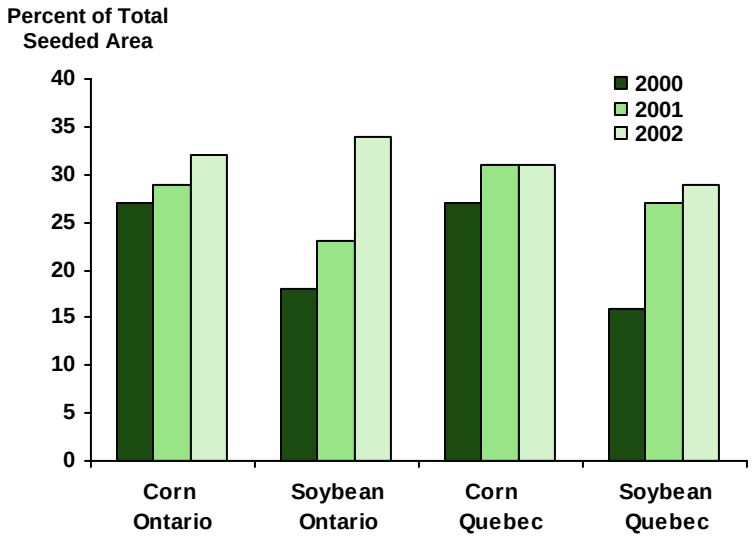
Source: Statistics Canada.

- In 2001 agricultural producers spent $27 billion on operating expenses after rebates, and incurred another $4 billion in depreciation expenses. The largest individual expense category is for commercial feed at $4 billion, followed by hired labour at $3 billion.

- For the last two decades, input prices have shown higher growth rates than farm product prices. While this reflects in part competitive pressures facing agriculture, it is much more reflective of high input demand. New technologies that entail high input usage, input quality improvements and output productivity gains that allow more and more output to be produced from a unit of input have all contributed to this high demand. In fact, input quantities sold explain more (around 55%) of farm expense increases over time than do the input price increases.

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

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



Source: Hategekimana and Beaulieu (2002).

Chart B5.5
Number of Certified Organic Growers, 1997-2001

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

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

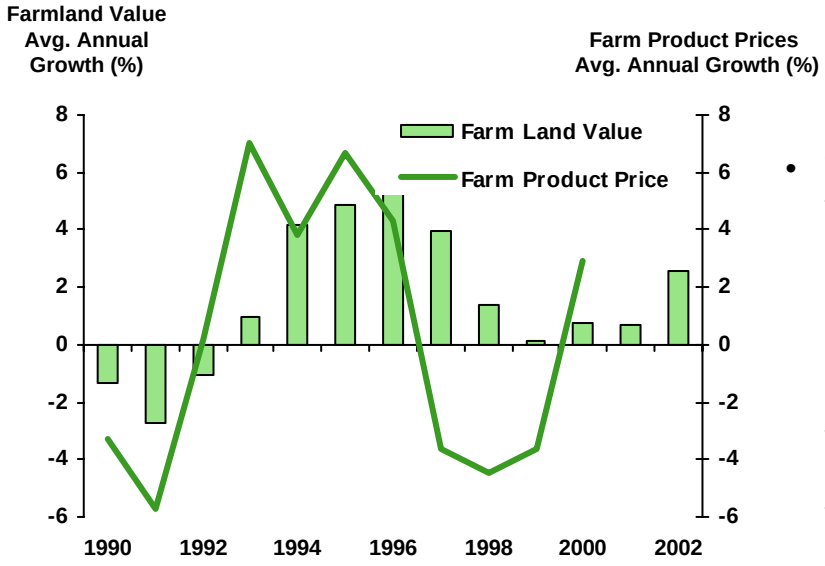
- Increasingly the market is distinguishing between agricultural products, not only by variety, and quality grade, but also by the production process used to grow them. More and more agricultural producers are differentiating their products through the adoption of different farming practices. This in turn is creating demand for different kinds of inputs.

- Crop seeds are a good example of an input facing different demands. Crop seeds today have been specially bred for more vigour and higher yield. Genetically modified (GM) seeds with their own built-in pest resistance and weed control capacity are becoming more popular overtime. In 2002 around 30% of total corn and soybean area in Ontario and Quebec was planted to GM crops.

- At the same time as GM and other hybrid seeds have been gaining popularity, there has been an increasing trend towards chemical-free production to satisfy the organic market. Over the last five years, the number of certified organic producers has increased by 75%, and land in organic production has more than doubled in area.

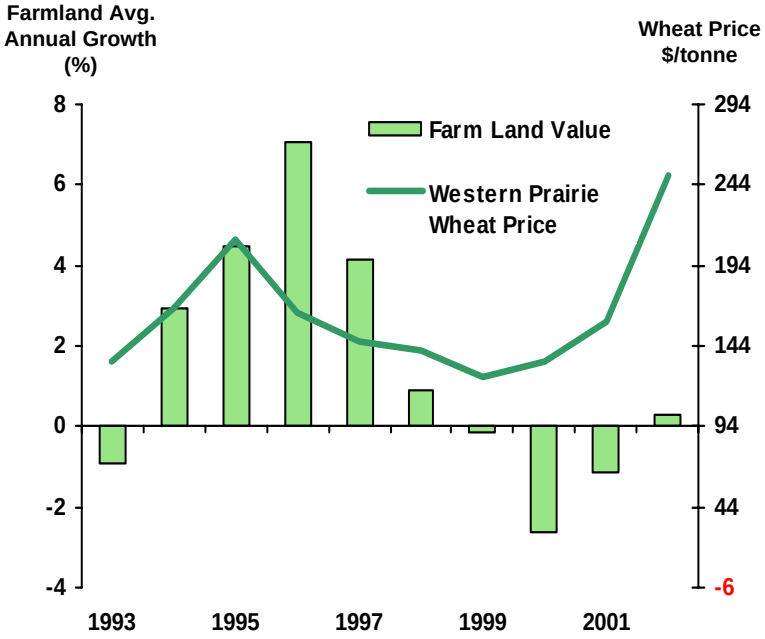
Farmland value reflects commodity price movements

Chart B5.6
Farmland Value and Farm Product Prices in Canada, 1990-2002



Source: Farm Credit Corporation and Statistics Canada.

Chart B5.7
Farmland Value and Western Prairie Wheat Prices in Saskatchewan, 1993-2002



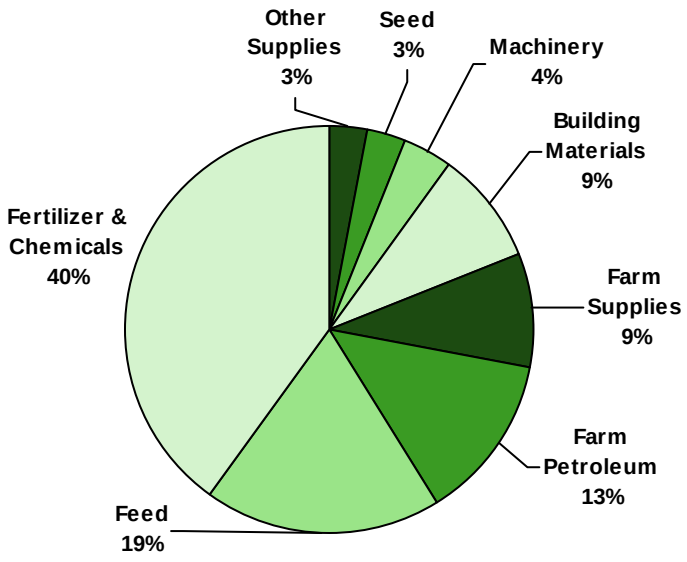
Source: Farm Credit Corporation and Statistics Canada.

- The value of any particular piece of farmland in Canada is determined by several different factors - including the quality of the land itself, its distance from major urban centers, policy changes, and general economic conditions. Over time, however, one of the strongest determinants of farmland value is the overall health of the agriculture sector. Because land is a fixed input, commodity prices and government program payments tend to become capitalized in land values.

- The correlation between commodity price movements and changes in land value is more pronounced in Saskatchewan with land prices closely following the price of wheat. Saskatchewan land price recovery has lagged behind the rest of Canada partly due to the drought.

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

Chart B5.8
Supply Cooperative Sales, 2000



Source: Cooperatives Secretariat.

Chart B5.9
Market Shares of Co-operatives in Farm Supplies

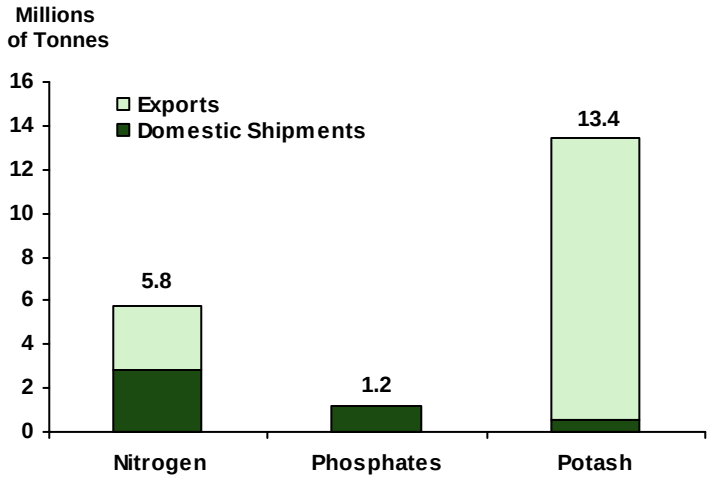
	1986	1991	1996	2000
	% of Total Farm Expenditures			
Fertilizers & Chemicals	31	36	35	40
Farm Petroleum	22	29	27	31
Seed	23	17	17	11
Feed.	26	25	17	15

Source: Cooperatives Secretariat and Statistics Canada.

- In response to growing concentration in the input supply industry, agriculture producers have traditionally set up co-operatives to negate market power exertion by input suppliers.
- 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 (home garden seeds and clothing).
- Market share for co-op sales of farm petroleum and fertilizer and chemicals has risen since 1986 primarily due to expanded operations in Western Canada. In the same time period, market share for co-op feed has fallen consistently due to slower growth in co-op sales relative to the industry. Co-op seed sales have also lost market share as a result of decreased sales in Western Canada and overall stagnant seed sales.

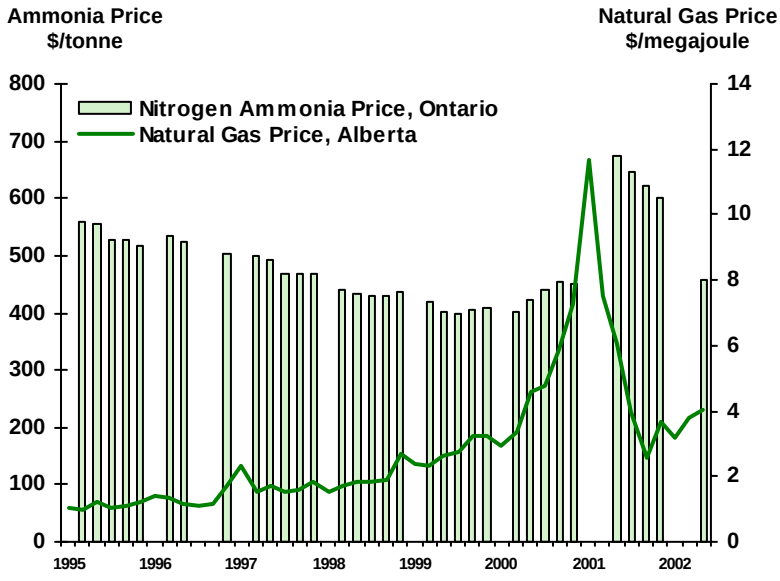
Canada is a world scale producer of fertilizers

Chart B5.10
Canadian Fertilizer Shipments and Exports, 2001



Source: Canadian Fertilizer Institute.

Chart B5.11
Nitrogen Ammonia & Natural Gas Prices, 1994-2002, Bimonthly



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

- Canada is a major world producer of fertilizers. The fertilizer industry employs about 6000 people at the production level. 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 produces about 30% of the world's potash and holds most of the world's reserves.

- Canada exports about 95% of its potash production and about one-half of its nitrogen products. Overall fertilizer exports are valued at about $3.2 billion compared to imports of approximately $500 million.

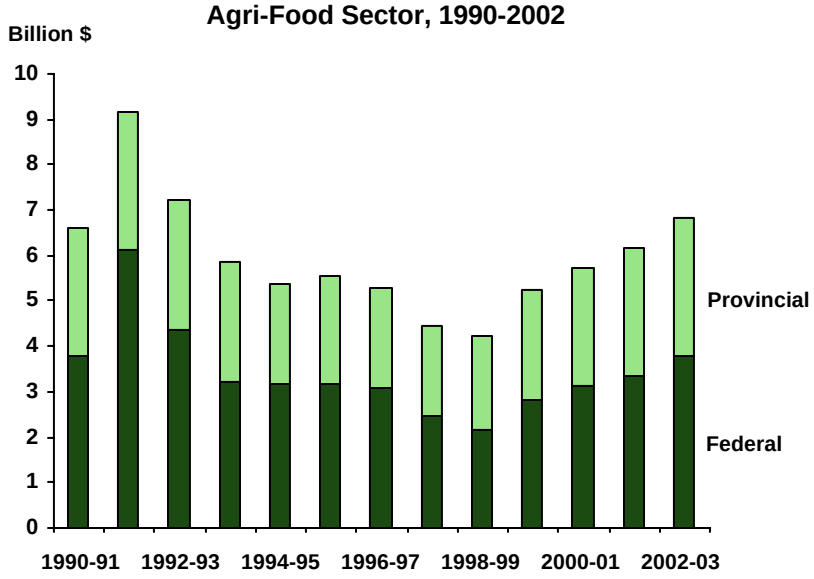
- Ammonia is the basic component used in the manufacture of all types of nitrogen fertilizers. In turn, natural gas is the main input into ammonia production, and accounts for 70-80% of its production cost (excluding fixed costs). Because of this dependency on natural gas input, nitrogen fertilizer prices have followed natural gas prices over the last couple of years. This tight relationship, however, has not always held. In the mid-1990s strong fertilizer demand in combination with near-full industry capacity utilization kept fertilizer prices high despite low natural gas prices.

Section C
Government Support of the Agriculture and Agri-Food System

Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Canada

Governments continue supporting the agri-food sector

Chart C1.1
Government Expenditure in Support of the Agri-Food Sector, 1990-2002

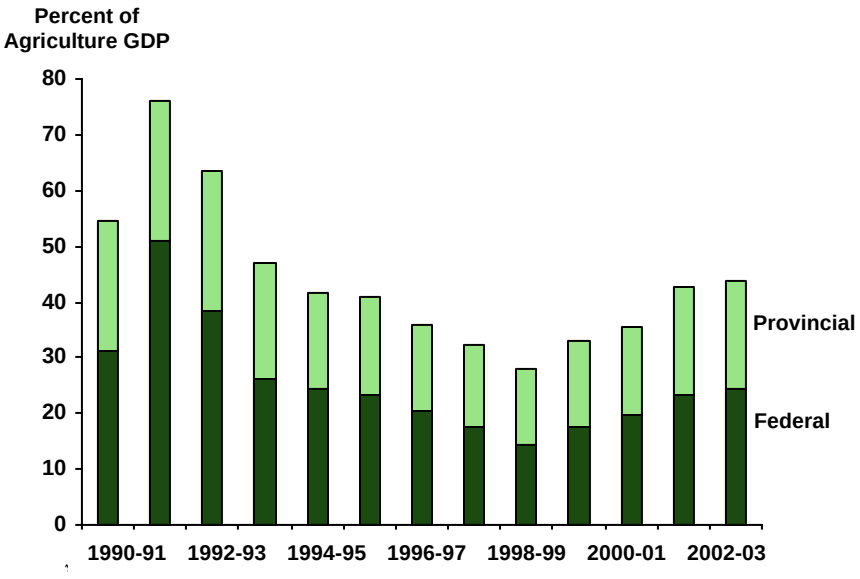


Source: AAFC

Note: 2002-03 figures are estimates.

- Total support of the agri-food sector trended down for the first part of the 1990s as a result of budgetary reductions and higher commodity prices. Since then there has been a considerable relaxing of government budgetary restrictions.
- In 2002, **government expenditure** in support of the agri-food sector was 44% of total agricultural GDP. This includes expenditures on research and inspection, general administration and management, policy, information and statistical services and program payments.

Chart C1.2
Government Expenditure in Support of the Agri-Food Sector, 1990-2002

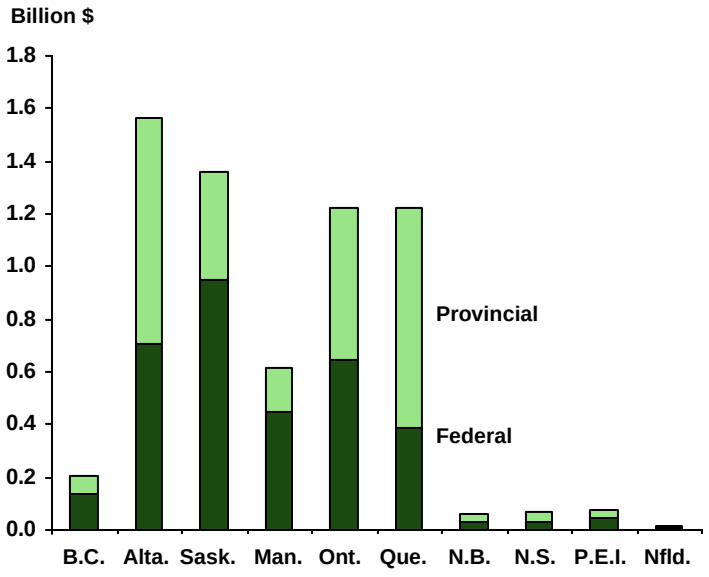


Source: AAFC

Note: 2002-03 figures are estimates.

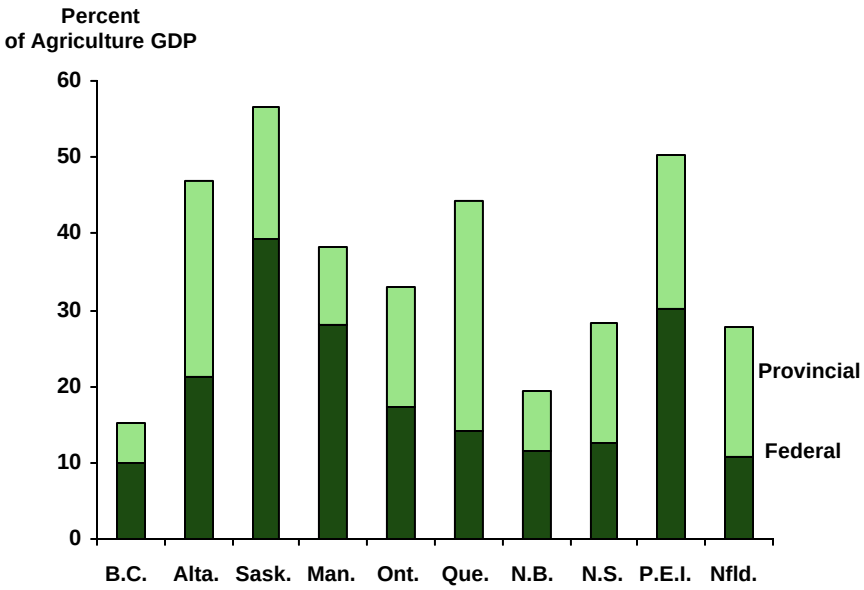
Government support varies across provinces

Chart C1.3
Government Expenditures in Support of the Agri-Food Sector by Province, 2002-2003*



Source: AAFC
Note: *2002-03 Estimates

Chart C1.4
Government Expenditure in Support of the Agri-Food Sector by Province, 2002-2003*



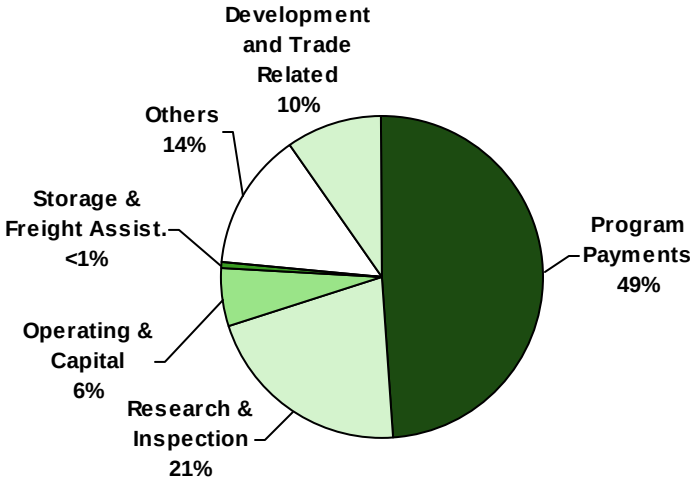
Source: AAFC
Note: *Estimates.

- Agriculture is a shared jurisdiction between federal and provincial governments. Both levels of government have committed significant resources in support of the agri-food sector. In terms of absolute spending, 4 provinces (Alberta, Saskatchewan, Ontario and Quebec) receive more than $1 billion each in total government support. However, the provincial picture is slightly different when looking at government support relative to agricultural GDP. On this basis, Alberta, Saskatchewan and Prince Edward Island receive the most government support.

- While there is agreement for a 60:40 federal-provincial funding split for safety nets and risk management strategies, the federal-provincial funding split still varies across provinces because of different provincial program offerings and other types of support. In 2002, the federal government provided the greatest share of total government support in 6 provinces (British Columbia, Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island).

Program payments make up a significant proportion of government support

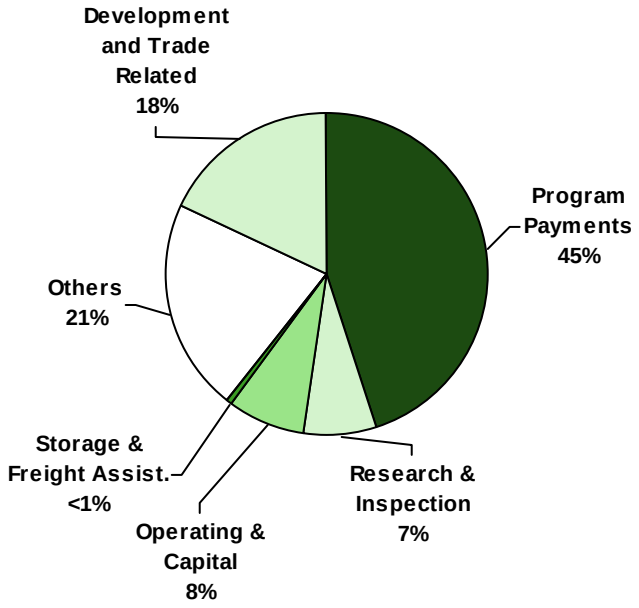
Chart C1.5
Federal Government Expenditures in Support of the Agri-Food Sector by Major Category, 2002-2003*



Source: AAFC

Note: *2002-03 figures are estimates.

Chart C1.6
Provincial Government Expenditures in Support of the Agri-Food Sector by Major Category, 2002-2003*



Source: AAFC

Note: *2002-03 figures are estimates.

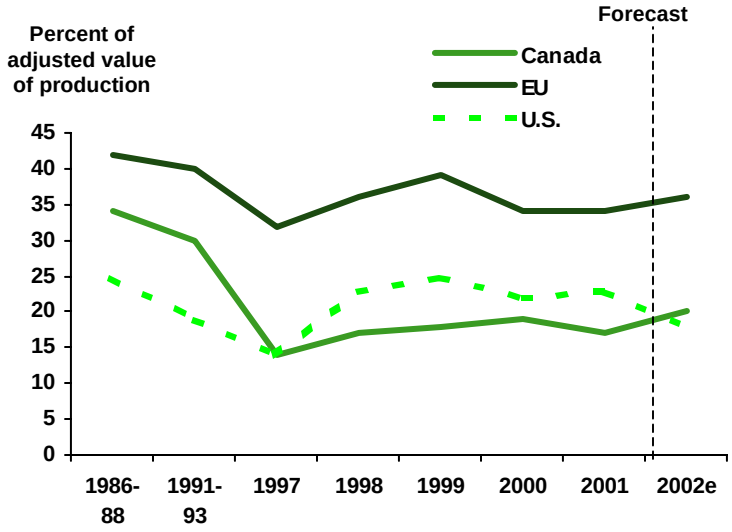
- Program payments make up a significant proportion of federal (48%) and total provincial (45%) government support and are estimated in total to be $3.2 billion for 2002. They include income support and stabilization programs, ad hoc and cost reduction programs, crop insurance programs and financing assistance programs.

- Research and inspection is the second largest public expenditure category and constitutes 22% and 7% 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 2002 relative to 2001.

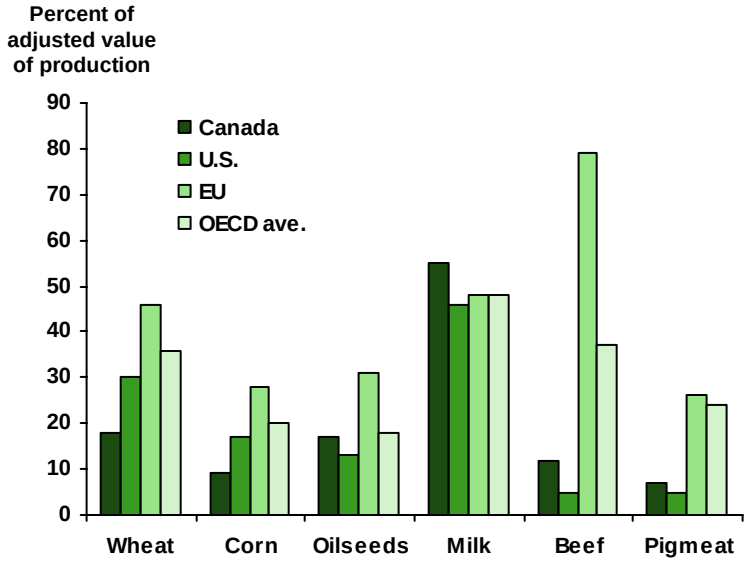
Canadian producers are less reliant on government support than are European and American producers

Chart C1.7
Producer Support Estimate, All Commodities
1986-2002



Source: OECD and AAFC estimates.

Chart C1.8
Producer Support Estimate by Commodity, 2002



Source: OECD and AAFC estimates.

- Over time, Canadian producers have been less dependent on policy support, as measured by the Producer Support Estimate (PSE), than European and American producers. In 2002, the PSE for Canada was 20% of **adjusted value of production** compared to 36% for the E.U. and 18% for the U.S.

- The level of support also varies across commodities within a county. European support for grains and oilseeds and red meat is much higher than in Canada. The U.S. also has significantly higher support for grains than Canada. American support for red meat industries is slightly lower than Canadian support.

Data Sources

Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Canada

Data Sources

Agriculture and Agri-Food Canada (AAFC)

- Characteristics of Canada's Diverse Farm Sector, http://www.agr.gc.ca/spb/fiap/publication/pub_2109/pb2109_e.html
- Co-operatives Secretariat http://www.agr.gc.ca/policy/coop/
- Farm Income, Financial Conditions and Government Assistance Data Book. Various issues. http://www.agr.gc.ca/spb/fiap/publication/databook/2002/jul2002/jul2002e.htm
- Fertilizer Pricing in Canada, http://www.agr.gc.ca/spb/fiap/fertilizer/template_etoc.html
- Provincial Farm Income Forecasts, http://www.agr.gc.ca/spb/fiap/publication/forecast/forcst_e.html
- Trade Summary Tables http://www.agr.gc.ca/policy/epad/english/pubs/qrthigh/2002/TST_02_e.htm

Agriculture and Agri-Food Canada and Statistics Canada

- Farm Financial Survey (FFS), Catalogue No. 21-F008-XIB, http://www.agr.gc.ca/spb/fiap/pubse.html
- Taxfiler Data, http://www.agr.gc.ca/spb/fiap/pubse.html
- Whole Farm Database, Catalogue No. 21-F0001-XCB

Canadian Restaurant and Foodservice Association

- Foodservice Facts 2002 - Quarterly Report on the Foodservice Industry

Conference Board of Canada

- Special Data Tabulations for AAFC

Farm Credit Corporation (FCC)

- Farmland Values Report http://www.fcc-fac.ca/english/our_company/media/publications/

Food and Agriculture Organization of the United Nations (FAO)

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

Data Sources (cont'd)

Global Trade Information Services, Inc.

- World Trade Atlas, http://www.gtis.com/intro_country.html

Industry Canada

- Strategis Trade Data Online, http://strategis.gc.ca/sc_mrkti/tdst/engdoc/tr_homep.html

Organization for Economic Co-operation and Development (OECD)

- Main Science and Technology Indicators http://www.oecd.org
- National Accounts of OECD Countries http://www.oecd.org

Statistics Canada

- Agriculture Economic Statistics (AES), Catalogue No. 21-603XPE
- Annual Survey of Manufactures (ASM), Catalogue No. 15-001-XIE and Special Tabulation for AAFC
- Balance of Payments Division, Special Tabulation for AAFC
- Canadian International Merchandise Trade Database ,AAFC aggregations
- CANSIM/CANSIM II, http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?CANSIMFile =CII/CII_1_E.HTM&RootDir=CII/
- Census of Agriculture 2001, http://www.statcan.ca/english/agcensus2001/index.htm and Special Tabulations for AAFC
- The Daily, http://www.statcan.ca/english/dai-quo/
- Historical Overview of Canadian Agriculture, Catalogue No. 93-358-XPB
- Income in Canada, Catalogue No. 75-202-XIE
- Labour Force Survey (LFS), Special Tabulation for AAFC
- Livestock Animal Products Section, Special Data Requests
- Manufacturing Construction and Energy Division. Special Data Requests
- National Wealth and Capital Stock Section, Special Data Requests
- Science Statistics, Service Bulletin, Catalogue No.88-001-X1B
- Survey of Innovation, Special Tabulation for AAFC

Data Sources (cont'd)

U.S. Bureau of Commerce

- Bureau of Economic Analysis, Industry Accounts Data, http://www.bea.gov/bea/dn2.htm

U.S. Department of Agriculture (USDA)

- Current Research Information System, http://cristel.nal.usda.gov/
- Economic Research Service, Special Data Requests.

U.S. Department of Labor

- Bureau of Labor Statistics, http://www.bls.gov/mfp/home.htm

Glossary

Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Canada

The System

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 (NAIC):

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 & Garden Machinery & 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.

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).

In defining the stages of the agriculture and agri-food system, the attempt has been 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.

The System (cont'd)

Food Processers

Food processors are composed of the following industries as defined by NAICS:

at the 3-digit level:

311 Food Manufacturing
312 Beverage and Tobacco 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 4 digit level:

4542 Vending Machine Operators

at the 5 digit level

41911 Farm Product Agents and Brokers
41913 Food, Beverage and Tobacco Agents and Brokers
44422 Nursery and Garden Centres
49312 Refrigerated Warehousing and Storage
49313 Farm Product Warehousing and Storage

Foodservice Establishments

Foodservice establishments are composed of the following industries as defined by NAICS:

at the 3 digit level

722 Foodservices and Drinking Places

The System (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.

Primary Agriculture

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

at the 4 digit level

1111	Oilseed and Grain 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

Trade Definitions

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)**
  Bulk products are those which have received little or no processing, such as, wheat, feed grains and oilseeds.

- **Intermediate (I)**
  Intermediate products are those 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)**
  Consumer oriented products 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.

Economic and Statistical Terms

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 4 firms in the industry.

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 Terms (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.

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.

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

Government Support Definitions

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.

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.

Miscellaneous Definitions

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
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 Farm Commodities
Other farm commodities (Charts B4.10 & B4.11) 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
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
Other land (Chart B4.9) 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
Personal expenditures on drugs and pharmaceutical products and personal effects not elsewhere classified.

Other Personal Expenditures on Services
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.

Miscellaneous Definitions (cont'd)

Other Prairie Commodities
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.

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

End Notes

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

2. See Hobbs and Young. "Vertical Linkages in Agri-Food Supply Chains in Canada and the United States." Report commissioned by AAFC. June 2001.

3. Exports to the rest of the world dropped b ack to $7.5 B in 2002 as a result of the Prairie drought impact on grain and oilseed exports.

4. For food processors, see Harper and Burroughs. "An Analysis of Profits within the Canadian Food Processing Sector." AAFC Working Paper forthcoming in 2003. For food retailers, see Smith and Trant. "Performance in the Food Retailing Sector of the Agri-Food Chain." AAFC Working Paper forthcoming in 2003.

5. See *http://www.mccain.com/McCainWorldWide/*

6. See Environics International. **2001 Global Issues Monitor**.

7. See Environics International. **2001 Food issues Monitor**.

8. See Ashmead Economic Research & Serecon Management Consultants. "Non-Food / Feed Industrial Uses of Agricultural Products". Commissioned Report by AAFC. 1997.

References

Ashmead Economic Research & Serecon Management Consultants. 1997. "*Non-Food/Feed Industrial Uses of Agricultural Products*". AAFC Commissioned Report.

Beaulieu, M. 2002. *"Financial Characteristics of Acquired Firms in the Canadian Food Industry."* Statistics Canada. Agriculture and Rural Working Paper Series. Working Paper No. 57.

Canadian Department of Foreign Affairs and International Trade. 2002. "Third Annual Report on Canada's State of Trade." http://www.dfait-maeci.gc.ca/eet/trade/sot_2002/toc-en.as;

Canadian Grocer. Executive Report 2002. http://www.cdngrocer.com

Canadian Press/Léger Marketing. 2002. "How Canadians Feel About Their Health and Organic Food." Report. Montréal, Québec. Interviews conducted by Leger Marketing June 4-9..

Canadian Press/Léger Marketing. 2001. "*How Canadians Perceive Genetically Modified Organisms*." Report. Montréal, Québec. Interviews conducted by Leger Marketing July3-11.

Crawford, C. 2001. "Discussion Framework: Developing Biobased Industries in Canada." Report prepared for AAFC. June 1.

Department of Canadian Heritage. 2000. *"A Graphic Overview of Diversity in Canada*." August.

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

Drake. J. 2001. "*National Market Survey, Canadian Food Stores Sales, 2000*." **Canadian Grocer**. Jan/Feb., pp. 22-31.

Environics International. 2001. **Food Issues Monitor**. Toronto, Ontario. May. http://www.environicsinternational.com/default.asp?sp-fim.asp

Environics International. 2001. **Global Issues Monitor**. http://www.environicsinternational.com/default.asp?sp-fim.asp

References (cont'd.)

Hategekimana B. and M. Beaulieu. 2002. "*Genetically Modified Crops - Steady Growth in Ontario and Quebec*." Statistics Canada, Agriculture Division. **Vista.** December.

Harper, D. and R. Burroughs. 2003. "*An Analysis of Profits within the Canadian Food Processing Sector*." AAFC Working Paper. Forthcoming.

Harper, D. and D. Smith. 2001. "Profitability in the Agri-Food System, 1990-1998". Unpublished.

Hobbs. J. and L. Young. 2001. "*Vertical Linkages in Agri-Food Supply Chains in Canada and the United States*." AAFC Commissioned Report. June. http://www.agr.gc.ca/policy/epad/english/pubs/adhoc/vertical/vrtclae.htm

International Fertilizer Development Center. Muscle Shoals, Alabama.

Korol, M. 2002. "*Canadian Fertilizer Consumption, Shipments and Trade 2000/2001*." Working Paper. April.

Landry, D. "*Concentration in the Canadian Food Processing Industries*." AAFC Working Paper in progress.

OECD. SourceOECD @ www.sourceoecd.com . "*National Accounts of OECD countries - Detailed Tables*," Volume II.

Smith, D. and M. Trant. 2003. "*Performance in the Food Retailing Sector of the Agri-Food Chain*." AAFC Working Paper. Forthcoming.

Statistics Canada. 1999. **Advanced Technology in the Canadian Food Industry**. Catalogue No. 88-518-XIE.

Statistics Canada. 2002. "*Family Income, 2000*." **The Daily**. October 30.

Statistics Canada. 2002. "*Productivity Growth and Prosperity, 1981 to 2000*." **The Daily**. December 16.

Statistics Canada. 2003. "*Census of Population: Immigration, Birthplace and Birthplace of Parents, Citizenship, Ethnic Origin, Visible Minorities and Aboriginal Peoples*." **The Daily**. January 21.

References (cont'd.)

USDA. 2002. *"Economic Research Service Briefing Room - Food CPI, Prices and Expenditures"* @. www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table98. Retrieved October 4.

USDA. 2002. "*Effects of NAFTA on Agriculture and the Rural Economy." Economic Research Service*." Report WRS-02-1.

Vaughan, O. 1995. "*Implications of Foreign Direct Investment for the Canadian Food and Beverage Manufacturing Industry*." AAFC Working Paper #2/95. March.

Zafiriou, M., L. Robbins, D. Karamchandani, and P. Ominski. 2002. "*Changing Consumer Demand and Its Impact on Canadian Agricultural Policy and Trade*." AAFC Presentation made to the International Trade Research Consortium Conference. December 15.