Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada

REPORT ON
Long Term Challenges and Opportunities for Future Competitiveness and Prosperity of the Agriculture and Agri-Food Industry

CHAPTER 1:
Primary Agriculture

October 5, 2006

Canada

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Acknowledgement

This report is the outcome of a collaborative effort by members of the Federal/Provincial/Territorial (FPT) Working Group on Economic Analysis, who were tasked by FPT ADM's to provide economic analysis.

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Foreword

- This report was prepared by the Federal/Provincial/Territorial (FPT) Working Group (WG) on Economic Analysis at the request of FPT Assistant Deputy Ministers (ADMs) in an effort to study the challenges and opportunities that are arising from the trends and factors affecting the sector's long term prosperity and competitiveness.

- The report is a compilation of data and information that presents a snapshot of the state of the industry and the challenges and opportunities facing the agricultural sector. It is by no means a comprehensive analysis of the industry or a policy paper.

- This report is based on the progress report the WG presented to ADMs in November 2005 and published in February 2006 on AAFC online. This chapter provides additional data and information related to the financial position of farms and provides updates wherever possible.

Executive summary

- In developing policies for the agriculture and agri-food sector, a clear understanding of the sector is important. This report therefore provides disaggregated data and information about the changing structure and performance of the sector and the challenges and opportunities it faces.
- The Canadian primary agricultural sector is a key part of an integrated and complex supply chain, which is an important contributor to the Canadian economy, highly dependent on trade and increasingly consumer-oriented.
- The sector continues to face challenges and opportunities from technological change, globalization, changing consumer demands, continuous growth in world agricultural production, declining real commodity prices, increasing input prices, an appreciating Canadian dollar, and high energy prices.
- These challenges and opportunities have led to some structural changes resulting in fewer and larger farms, significant shifts in enterprise mix, increased specialization, and increased contracting and vertical integration, and diversification in the sources of farm family income.
- Declining commodity prices coupled with increasing production costs, have created a cost price squeeze and a continuous decline in realized net farm income.
- However, performance of farms and farm families of different sizes, regions and sub-sectors varies, with a significant proportion of farm families operating their farms at a profit every year.
- Controlling production costs is key to farm profitability with top performing farms having significantly lower costs than bottom performing farms.
- To address the declining net farm income situation, farm families have diversified their income sources to varying degrees, with off-farm income becoming more important for smaller, retirement, and lifestyle farms.
- Even though aggregate net cash income has declined, total asset values of farms have generally increased substantially over time.
- The sector can improve performance and competitiveness through productivity growth, which depends on investments in R&D, innovation, public infrastructure, regulatory reforms and the development of a skilled labour force.
- There are also opportunities from increased demand for value-added commodities in Canada and other developed countries as well as increased demand for traditional commodities from developing countries.

Section A

The Agriculture and Agri-Food Sector

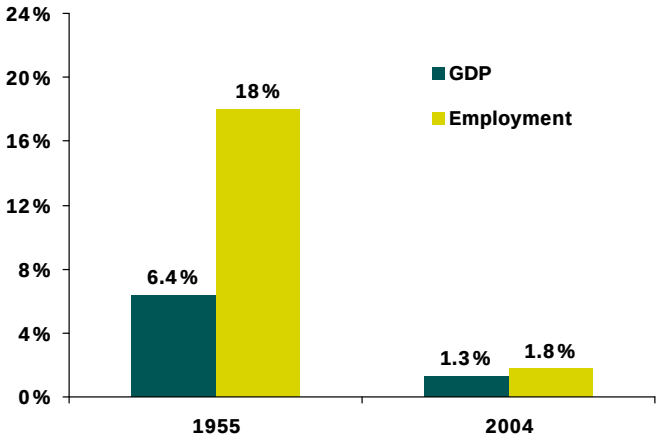
Summary

- Primary agriculture is a crucial part of the Canadian economy, integrated into a complex agri-food supply chain.
  - The agriculture and agri-food sector as a whole remains a significant contributor to the Canadian economy and most components are growing.
- The economic importance of the agriculture and agri-food sector varies from province to province and is most significant for the Prince Edward Island, Saskatchewan and Manitoba economies.
- The Canadian agriculture and agri-food sector has become highly dependent on trade.
- Hence, the future prospects of the sector depends on its ability to improve productivity and competitiveness and to adapt to market developments.
- The industry faces several challenges and opportunities:
  - Technological change has resulted in continuous growth in world agricultural production and a long term decline in commodity prices;
  - Exports from emerging low cost producers continue to grow;
  - Real commodity prices continue to decline while input prices in real terms have remained relatively stable;
  - Macroeconomic factors such as the appreciating exchange rate and higher energy prices are also contributing to pressures on the sector;
  - Measures of aggregate farm level profitability, such as net farm income have been on a downward trend.
- These challenges have created pressures for structural adjustment.
  - Many subsectors have been able to adjust to changes through rationalization and innovation and will continue to adjust to changes.

Primary agriculture is an increasingly smaller part of an integrated and complex supply chain that has been evolving

- The relative contribution of the primary sector to Gross Domestic Product (GDP) and employment has declined significantly.
- The value of agricultural production in absolute terms has tripled between 1961 and 2004. At the same time, however, the Canadian economy as a whole has grown at a faster rate (by 6 times) driven mainly by the growth in the high tech and service sectors.
- The share of primary agriculture to total GDP and employment has declined from 6.4% and 18%, in 1955 to 1.3% and 1.8% in 2004, respectively.

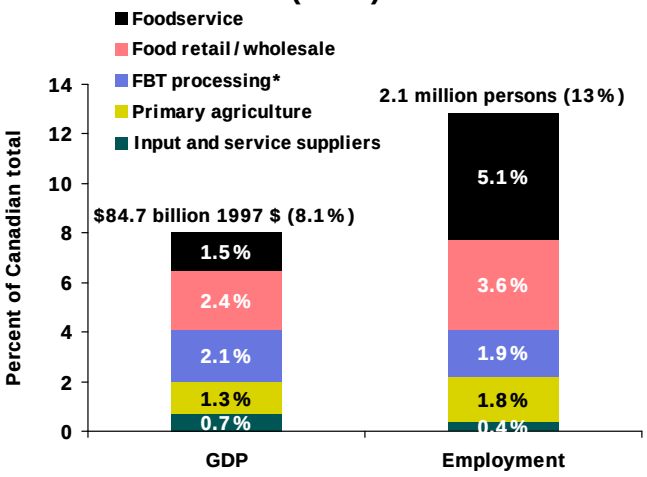
Chart A1
Primary agriculture as a share of the Canadian economy



Source: Statistics Canada, CANSIM Table 379-0017, Labour Force Survey and Agriculture and Agri-Food Canada (AAFC) calculations.

- However, the agriculture and agri-food system as a whole remains a significant contributor to the Canadian economy accounting for 8.1% of total GDP and 13% of employment.

Chart A2
The agriculture and agri-food system's contribution to employment and GDP (2004)



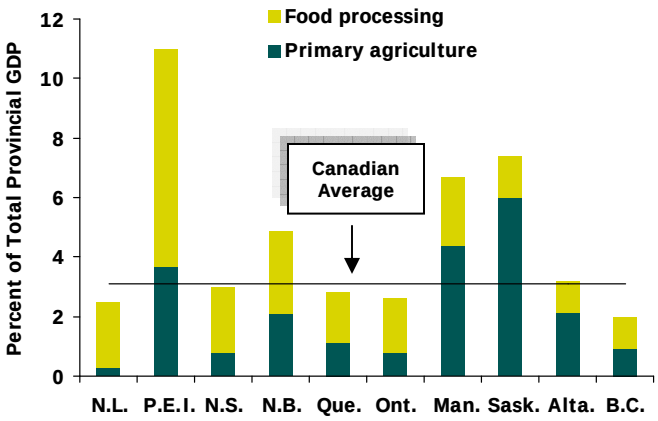
*FBT is food, beverage and tobacco processing.

Source: Statistics Canada, CANSIM Table 379-0017and AAFC calculations.

The agriculture and agri-food sector's economic importance varies across provinces

- The relative economic importance of the agriculture and agri-food sector varies by province. For example, agriculture and agri-food GDP is a higher percentage of the provincial economy in Prince Edward Island (10.9%) and Saskatchewan (7.4%), but lower in British Columbia (2.0%) and Newfoundland (2.5%).

Chart A3
The agriculture and agri-food sector's contribution to provincial GDP (2004)

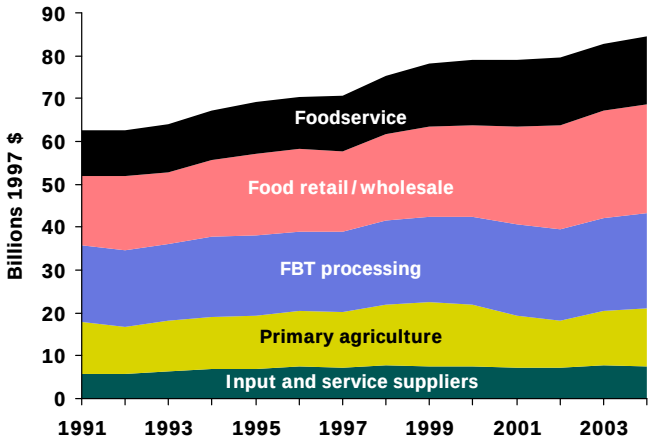


Note: Excludes beverages and tobacco processing.
Source: Statistics Canada.

Down-stream segments of the agriculture and agri-food sector have been growing fast

- Total agriculture and agri-food GDP has increased from $63 billion in 1991 to $85 billion in 2004 when measured in real terms (1997 constant dollars).
- This is due to increases in the value of production in all components of the value chain.
- Primary agriculture experienced some declines in GDP in 2001 and 2002 due to a major drought in the Prairies. Food processing GDP experienced a decline in 2003 due to BSE in Canada and an exchange rate appreciation.
- The retail/wholesale and foodservice sectors grew by 4.2% and 3.3% per annum, respectively, between 1991 and 2004.
- The input and service suppliers and processing sectors also grew, but at slower rates, by 2.3% and 2.4% respectively, between 1991 and 2004.

Chart A4
The agriculture and agri-food system's contribution to GDP

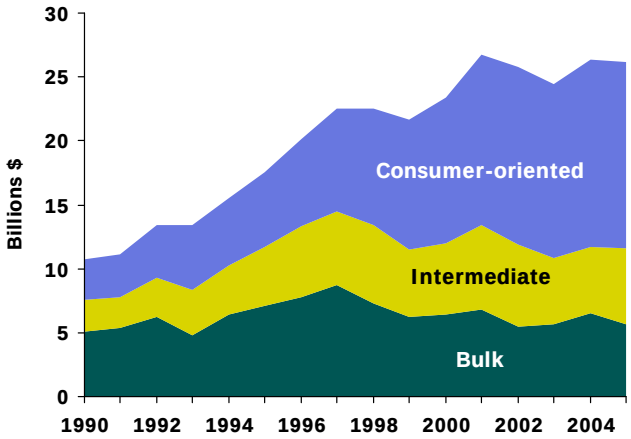


Source: Statistics Canada, CANSIM Table 379-0017 and AAFC calculations.

The Canadian agriculture and agri-food sector is highly trade-oriented

- The sector has become increasingly consumer-oriented, leading to strong growth in value-added exports, which include consumer-oriented and intermediate exports.
- Value-added exports as a share of total agriculture and agri-food exports increased from 52% in 1990 to about 80% in 2005.
- The Canadian food and beverage processing (FBT) industry has become increasingly export-oriented since the mid 90's, contributing to this growth in value-added exports.
- Trade agreements have contributed to the growth in exports.
  - The Canada-U.S. Free Trade Agreement (CUSTA) signed in 1988 introduced initial measures to reduce tariffs and barriers to trade.
  - The WTO Uruguay Round Agreement of 1993 introduced further measures to improve market access and reduce tariffs and subsidies.
  - The North American Free Trade Agreement (NAFTA) signed in 1994 expanded the Canada-U.S. trade agreement to include Mexico.

Chart A5
Agriculture and agri-food export sales

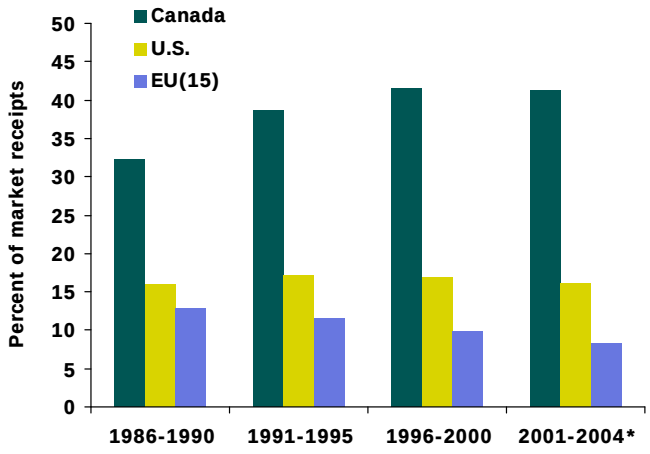


Source: Statistics Canada, International Merchandise Trade database and AAFC calculations.

A significant proportion of farm market receipts is from export sales

- Exports sales as a ratio of farm market receipts have been consistently higher in Canada than in the U.S. and the EU(15).
- The ratio has increased over time for Canada but has remained relatively stable for the U.S. and EU(15), emphasizing the increased importance of trade for the Canadian agriculture sector.
- BSE and the appreciation of the Canadian dollar since 2003 have resulted in some recent reductions in exports.

Chart A6
Portion of farm market receipts from export sales for Canada, the U.S. and the EU(15)



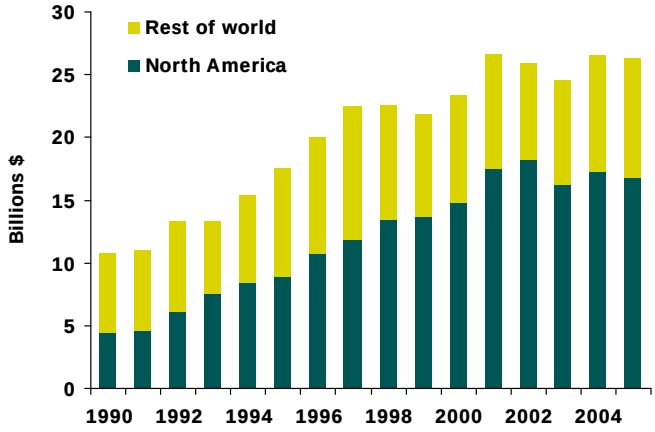
*EU(15) average only available for 2001-2002.

Source: Statistics Canada, Organisation for Economic Co-operation and Development (OECD) and AAFC calculations.

A large share of this export growth has been to the U.S. and Mexico

- Exports to the U.S. and Mexico are increasing as a result of North American integration.
- Agriculture and agri-food exports to the U.S. have tripled, while those to Mexico have increased nine-fold since 1990.
- Japan is the 2nd most important export market for Canada after the U.S., accounting for 10% of total agriculture and agri-food exports.
- Exports to the U.S. accounted for 60% of Canada's total agriculture and agri-food export sales in 2005. This increasing dependence on the U.S. market for exports makes Canada more vulnerable to trade actions and exchange rate movements.

Chart A7
Agriculture and agri-food exports to North America and rest of the world

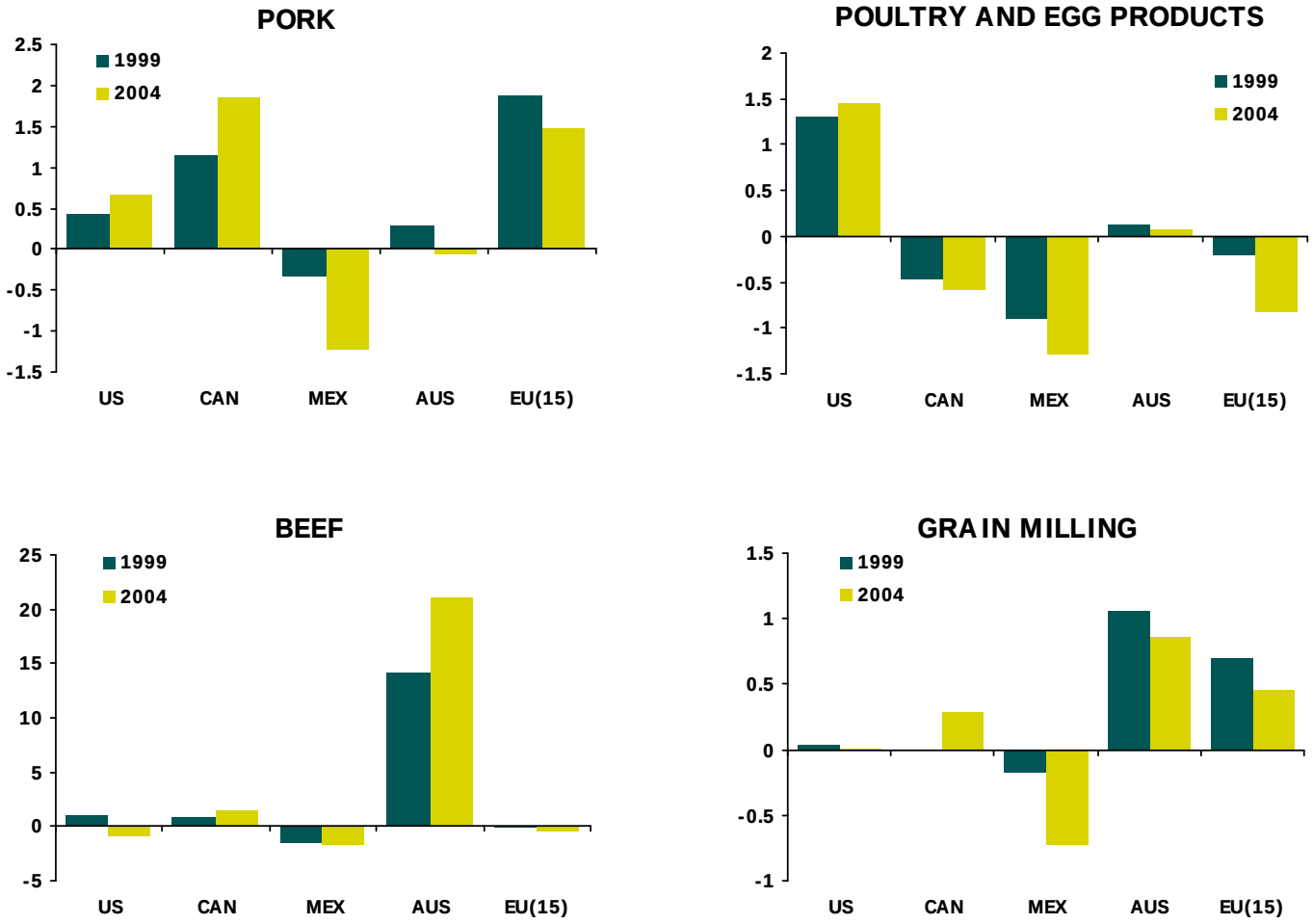


Source: Statistics Canada, International Merchandise Trade Database and AAFC Calculations.

The sector has increased its competitiveness and world export market share in certain major commodities

- Canada is highly competitive in pork production and has significantly diversified its export markets and increased its comparative advantage over the past few years.
- The beef and grain milling industries have also increased their relative comparative advantage since 1999.
- Comparative advantage of the beef industry could have been higher without the BSE outbreak as the U.S. border closure restricted exports.

Chart A8
Relative comparative advantage (RCA)*
for selected commodities

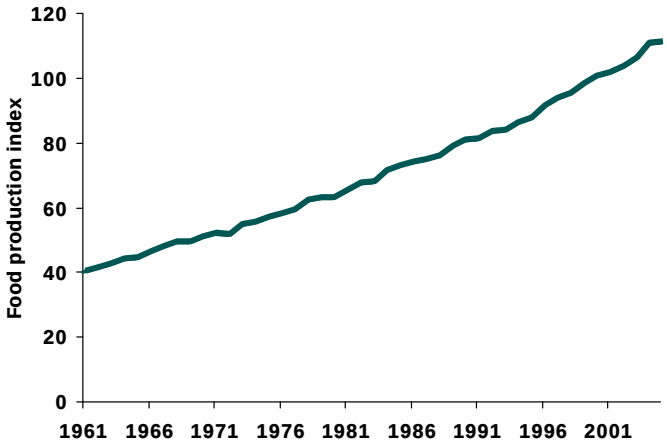


* RCA of a given product is measured by a country's share of the world market for that product relative to the share of all traded goods.
Source: AAFC calculations based on the Global Trade Atlas.

Production growth and technological change have resulted in a continuous growth in world agricultural production and a long term decline in real commodity prices

- The index of world agricultural production shows an increase of about 80% over the last two decades.

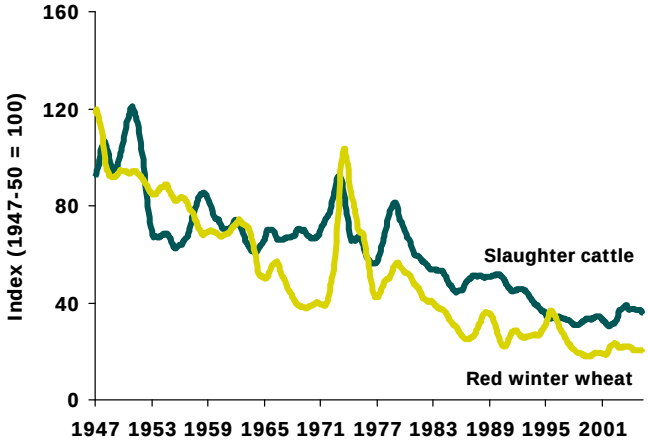
Chart A9
Index of agricultural production, world (average of 1999 to 2001=100)



Source: FAO, FAOSTAT database.

- A downward trend in real world commodity prices (1947-1950=100) has been observed across most commodities.

Chart A10
Hard red winter wheat and slaughter cattle price indices

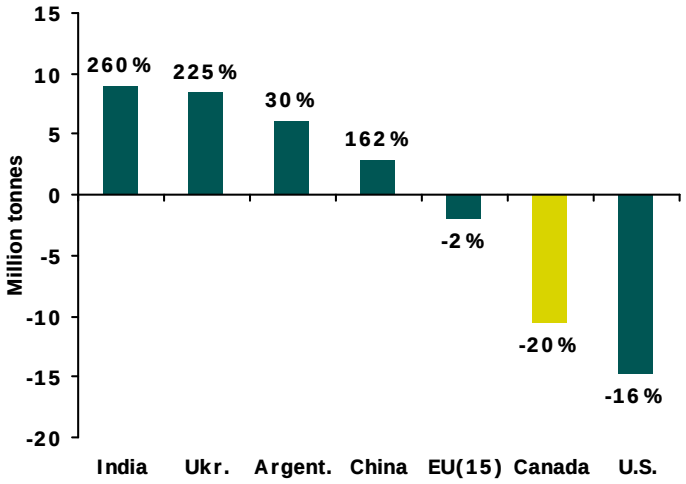


Source: U.S. Bureau of Labor Statistics and AAFC calculations.

Exports from emerging low cost producers continue to grow

- Emerging low cost exporters have begun to replace developed countries, such as Canada, the U.S. and the EU(15), in their traditional export markets.
- For example, Canadian wheat and flour exports declined by 20% between 1995-1997 and 2001-2003, while the exports from emerging economies, increased significantly.
- Drought in western Canada in 2001 and 2002 contributed to lower wheat production and exports from Canada.

Chart A11
Growth in wheat and flour exports,
(1995-1997 to 2001-2003)

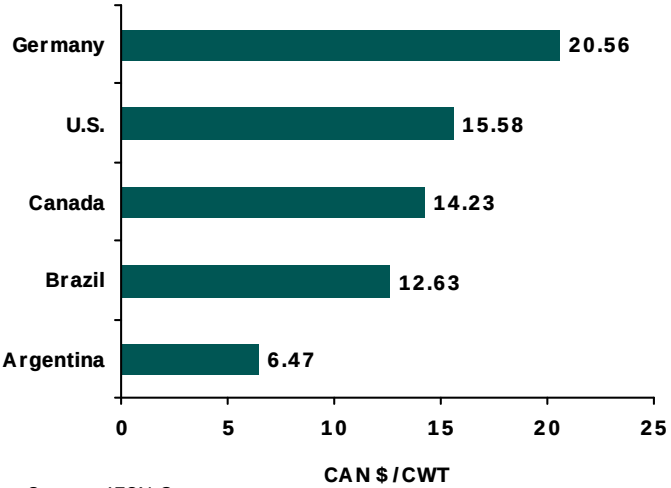


*Wheat production in Canada dropped 24% between 1995-97 and 2001-03 due to drought.

Source: FAO, FAOSTAT database.

- Many developing countries, such as Brazil and Argentina, are low cost producers of agricultural commodities and an emerging source of competition for Canadian producers.
- The unit cost of soybean production in Argentina, for example, is less than 50% of that of canola in Canada.

Chart A12
Oilseeds costs of production in Brazil, Argentina, Canada, the U.S. and Germany
(2001)
(Rapeseed equivalents)

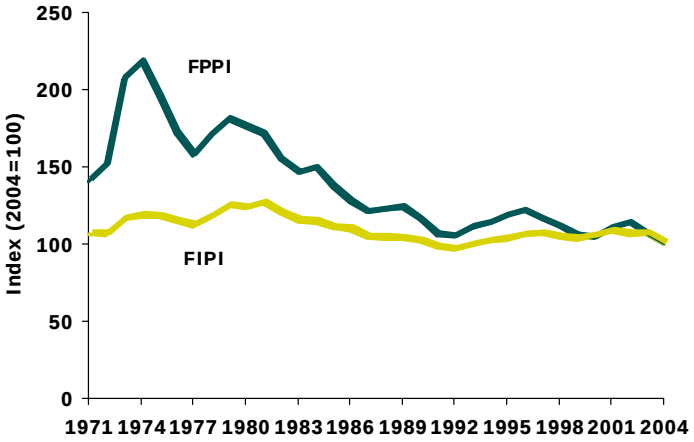


Source: IFCN Germany.

While real commodity prices continued to decline, real input prices have remained relatively stable

- In real terms (2004 constant dollars), while farm product prices declined, farm input prices maintained their levels resulting in a cost-price squeeze.
- Higher energy prices in 2005 have lead to increased input price pressures.

Chart A13
Real farm product price index (FPPI) and farm input price index (FIPI)*

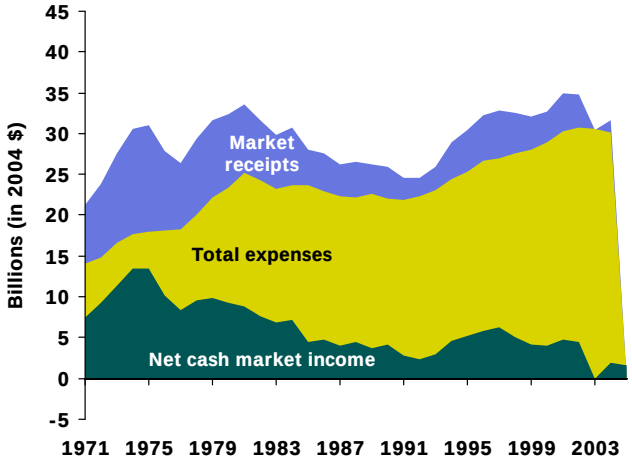


*FPPI and FIPI are normalized using the GDP deflator.
Note: Data does not reflect the recent increases in oil prices.

Source: Statistics Canada, CANSIM Table 002-0022, Conference Board of Canada and AAFC calculations.

- While market receipts continue to grow in real terms (2004 constants dollars) due to increased production, total farm expenses increased at a faster rate resulting in a downward trend in net market income.

Chart A14
Real net market income* and expenses



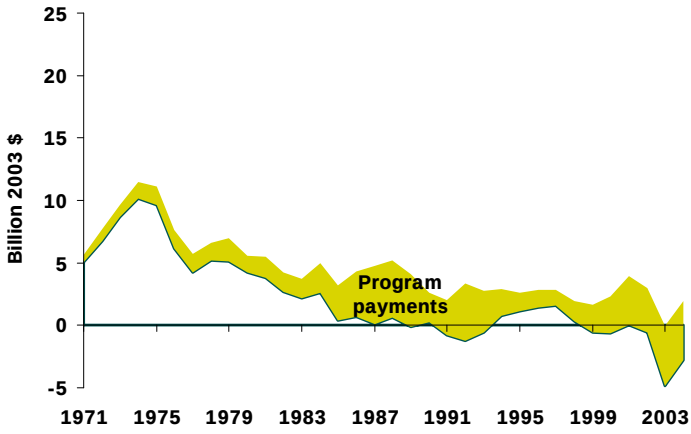
* Real net market income is measured by market receipts minus total expenses. Defeated by GDP.

Source: Statistics Canada, CANSIM Tables 002-0001, 002-0009 and 002-0005 and AAFC calculations.

Real aggregate realized net income has trended downward over time

- Real aggregate realized net income (2003 constant dollars), which accounts for depreciation, has declined since the early 1970's.
- Although program payments have increased considerably since the mid 1980's, real aggregate realized net farm income continued to decline.
- The comparison with the early 1970's when commodity markets were destabilized by unusual shocks (e.g. the large unexpected Russian grain purchase) exaggerates the long term decline.

Chart A15
Real aggregate realized net farm income* in Canada



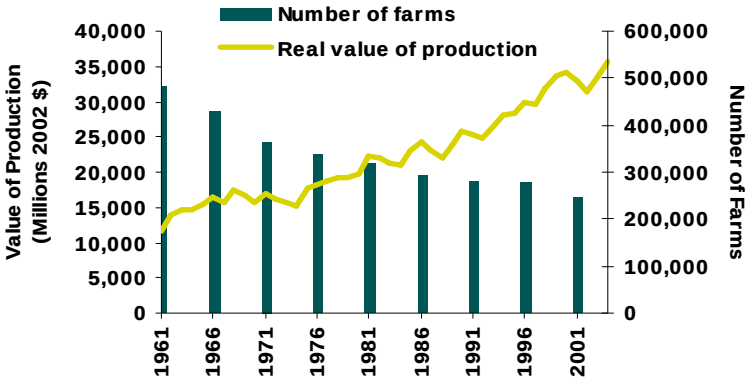
*Defeated by GDP (3002 constant dollars).

Source: Statistics Canada, CANSIM Tables 002-0001, 002-0009 and 002-0005 and AAFC calculations.

These factors jointly created strong pressure for structural adjustment

- Technological change is leading to increased economies of scale and size thereby allowing fewer and larger farms to produce more over time.
- The number of farms in Canada declined from about 500,000 in 1961, to about 250,000 in 2001, while average farm size went up from about 359 acres in 1961 to 676 acres in 2001.
- The value of production in real terms (2002 constant dollars) also increased from about $12 billion in 1961 to about $35 billion in 2001.

Chart A16
Real value of agricultural production* and number of farms



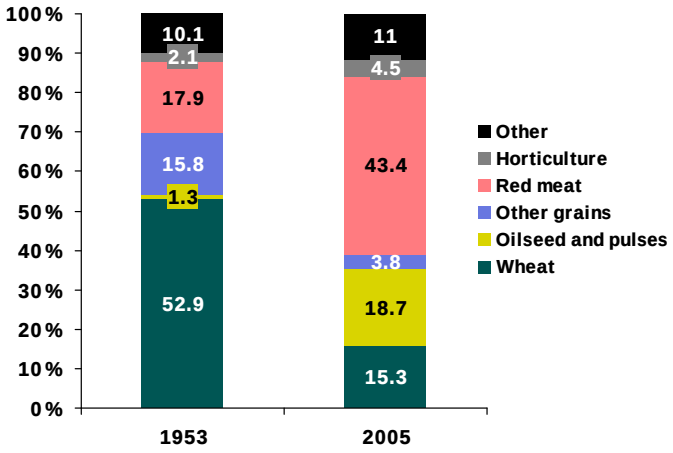
* Value of production is farm cash receipts including program payments and income in kind.

Source: Statistics Canada, Census of Agriculture and Agricultural Economic Statistics.

And contributed to significant shifts in enterprise mix in primary agriculture, particularly in the Prairies

- The commodity mix has changed dramatically in the past 50 years particularly in the Prairies.
- Between 1953 and 2005, red meat, oilseeds and horticultural products grew in importance as the sector diversified.

Chart A17
Share of cash receipts, Prairie provinces



Source: Statistics Canada, CANSIM Table 002-0014, 002,0001 and AAFC calculations.

Hog farms are a key example of this transformation to larger, more highly specialized farms

- Hog farms are a prime example of an industry that was transformed as a result of new technology and increased productivity.
- The number of farms reporting hogs fell from 122,000 in 1971, to 16,000 in 2001. At the same time the average farm size (hogs per farm) grew from 66 to 902 head per farm.
- Further transformation in hog farming has occurred as hog farmers have become more specialized, shifting from mixed farms to specialization in farrowing, feeder or finishing operations.
- Relationships between hog farms and the rest of the chain changed significantly over this period with increased contracting and vertical integration taking place across the supply chain.

Chart A18
Transformation of hog farms

	1971	2001
Nbr. of farms (thousands)	122.5	15.5
Farm size (hogs per farm)	66	902
Aggregate herd size (millions)	8.1	14.0
Business model	Mixed farms with farrow to finish hog enterprises	Specialized farrowing, feeder or finishing operations
Vertical integration	More than 90% on spot market	More than 90% on contract

Source: Statistics Canada, Census of Agriculture and AAFC calculations.

- The dairy sector has undergone a similar transformation in terms of farm numbers.
- Output per cow has increased dramatically resulting in the total dairy herd dropping in half.
- Dairy production is limited by a quota system and export restrictions.

Chart A19
Transformation of dairy farms

	1971	2001
Number of farms (thousands)	145.3	21.9
Farm size (cows per farm)	16	48
Aggregate herd size (millions)	2.2	1.1

Source: Statistics Canada, Census of Agriculture.

Section B

Differences in Farm Family Performance and Business Strategies

Summary

- Real aggregate net cash income (2003 constant dollars) has been declining, while the performance of farms and farm families of different sizes has varied.
- Differences in farm performance and business strategies are evident from the varying importance of farm income, off-farm income and program payments by farm types.
- Farm typology allows us to analyze these differences in performance within the same farm size class, as there are differences in scale and objectives of farm families.
- Over the past thirty years, there has been a significant increase in the number of farms with revenues of $250,000 and over.
- There are fewer retirement and low income farms in the larger sales class.
- Lifestyle and low income farms are making negative net income from the farm with expenses outpacing revenues.
- Farm families diversify their income sources to varying degrees, with off-farm income being more important for retirement and lifestyle farms.
- A significant proportion of farm families operates their farm at a profit every year.
- Farms within the same region, sector and size class have significantly different levels of financial performance.
- In addition to income measures, performance of farms varies by investment, equity and financial vulnerability.

Section B1

Farm Size and Performance

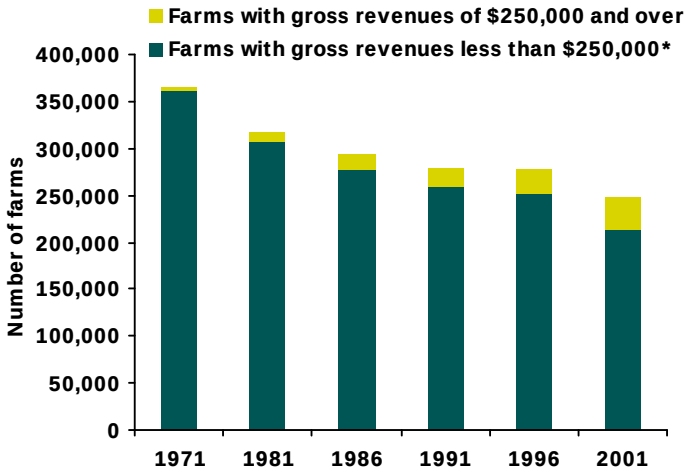
Key points

- Although overall farm numbers are declining, the number of farms with gross revenues of $250,000 and over have been increasing.
- Real aggregate net cash income has trended down over the last 30 years.
- Farms with gross revenues of $250,000 and over have a net operating income trending up whereas the net operating income of farms with less than $250,000 in gross revenues has trended down.
- Farms with gross revenues of $250,000 and over accounted for 14% of all farms but about 64% of total production and more than 80% of net operating income.
- Families operating very small farms with gross revenues of less than $10,000 are totally dependent on off-farm income and those operating farms with gross revenues of $10,000 to $249,999 are highly dependent on off-farm income.
- The above numbers generally describe the average Canadian farm situation and the working group recognizes that there are significant differences amongst different farm sectors and across provinces.

Over the past thirty years, there has been a significant increase in the number of farms with gross revenues of $250,000 and over

- While the total number of farms with gross revenues less than $250,000 continued to decline, the number of farms with gross revenues of $250,000 and over has increased from under 5,000 (1.3%) in 1971 to over 30,000 (14%) in 2001.
- The number of farms with gross revenues less than $250,000 has declined from over 300,000 to under 200,000 farms over this period.

Chart B1.1
Number of farms in Canada



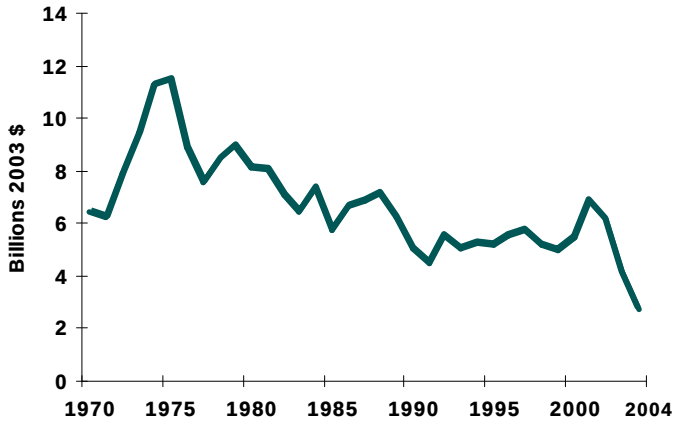
*Constant 2000 dollars.

Source: Statistics Canada, Census of Agriculture.

Real aggregate net cash income has been declining; however, the performance of farms and farm families of different sizes has varied

- The downward trend in real aggregate farm income (2003 constant dollars) reflects the changing market conditions.
- Real aggregate net cash income masks the differences in the performance of farms, and is an unreliable indicator of the farm income situation across and within size classes.

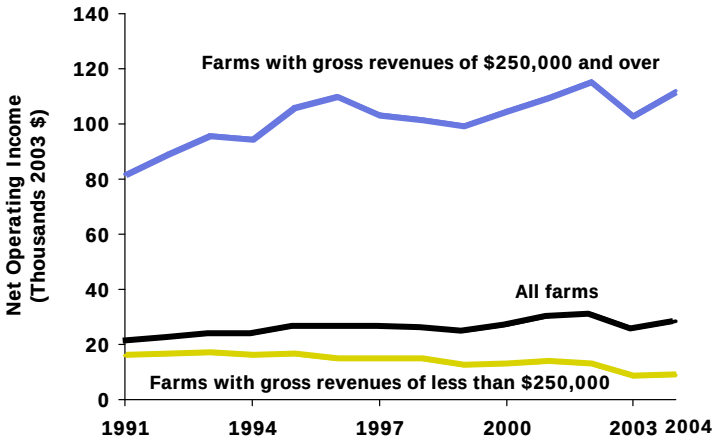
Chart B1.2
Real aggregate net cash income



Source: Statistics Canada, Agricultural Economic Statistics.

- For farms in the higher gross revenue class, the real average net operating income (2003 constant dollars) is above the average and increasing, while for those in the smaller size class, real average net operating income has been below the average and decreasing.

Chart B1.3
Net operating income per farm

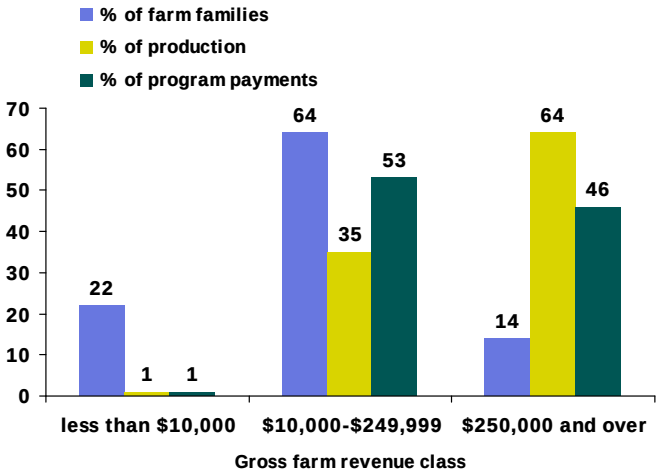


Source: Statistics Canada, Whole Farm Database.

There are differences among farms and farm families of different farm sizes in terms of business strategy and economic performance

- Farms with gross revenues of $250,000 and over accounted for 14% of farm families, but 64% of production in 2002.
- Farms with gross revenues less than $250,000 accounted for 86% of farm families but only one third of production.
- Differences in farm performance and business strategies are evident from the varying importance of farm net operating income, off-farm income and program payments by gross farm revenue class.
- The larger farms ($250,000 and over) made most of their income from farming, with a relatively small amount of off-farm income. This group received, on a per farm basis, the highest amount of program payments.
- The farms with gross revenues between $10,000 and $249,999, on average were more highly dependent on off-farm income.

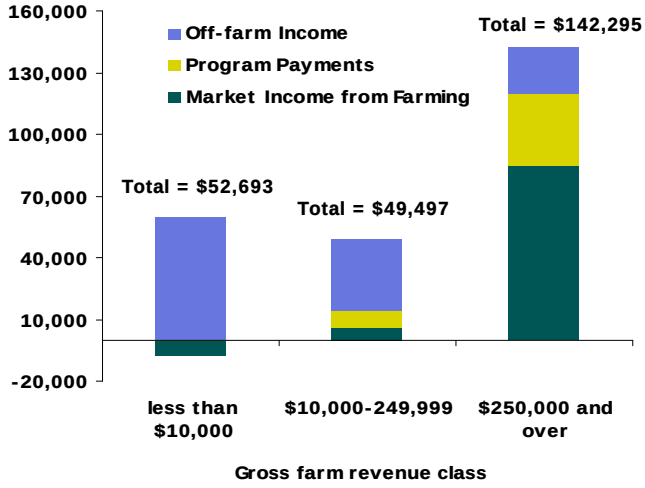
Chart B1.4
Distribution of farm families and production (2000 and 2002*)



*2000 data are used for the less than $10,000 revenue class and 2002 data are used for the $10,000 and over revenue class.

Source: Statistics Canada and AAFC calculations.

Chart B1.5
Average income of farm families by source of income (2000 and 2002)



Source: Statistics Canada and AAFC calculations.

Farms with gross revenues of less than $10,000 account for less than one percent of agricultural production in Canada

- The percent of farms with revenues of less than $10,000 has been decreasing since 1971. British Columbia reported the lowest decrease from 1971 to 2001.
- The major motivation of these farms is not profitability, they generally farm for other reasons such as lifestyle.
- The rest of the report focuses only on farms with gross revenues of $10,000 and over.

Chart B1.6

FARMS WITH TOTAL GROSS REVENUES OF LESS THAN $10,000

	1971			2001		
	Number of farms	Percent of farms	Share of production	Number of farms	Percent of farms	Share of production
N.L.	788	76	5.78	287	45	1.09
P.E.I.	2,035	45	6.34	355	19	0.40
N.S.	3,681	61	6.11	1,551	40	1.32
N.B.	3,120	57	6.57	1,186	39	1.03
Que.	23,343	38	5.08	5,302	16	0.38
Ont.	32,906	35	2.65	15,370	26	0.79
Man.	11,396	33	4.47	3,745	18	0.46
Sask.	18,082	23	4.24	6,194	12	0.51
Alta.	18,851	30	2.85	10,089	19	0.45
B.C.	10,534	57	4.43	10,087	50	1.69
CANADA	124,736	34	3.64	54,166	22	0.62

*Constant 2000 dollars.

Source: Statistics Canada, Census of Agriculture.

Net operating income is mostly generated by a few very large farms

- In 2004, farms with gross revenues of $10,000 to $249,999 accounted for 15.7% of net operating income and 41.7% of program payments.
- Farms with gross revenues of $250,000 and over accounted for 23.2% of farms, 84.2% of net operating income and 58.3% of program payments.
- Further breakdown of the higher gross farm revenue class shows that farms with gross revenues of $1,000,000 and over represented only 3.2% of farms, but accounted for 35.2% of net operating income and 20.2% of program payments.

Chart B1.7

CONTRIBUTION TO FARM NET CASH INCOME AND SALES, BY REVENUE CLASS, 2004

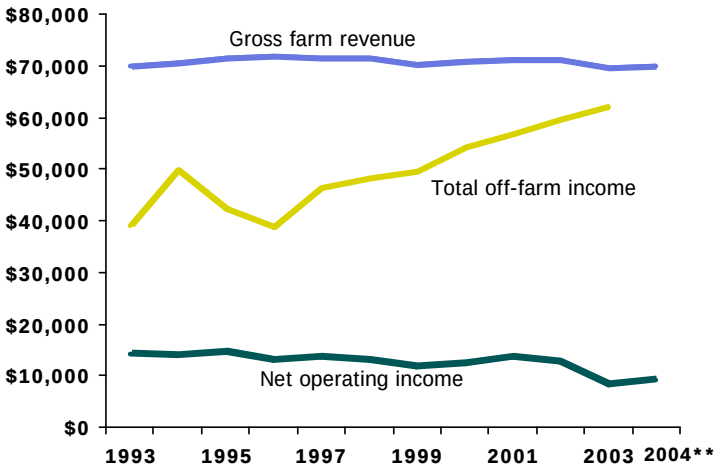
Gross farm revenue class	Number of farms	Percent of farms	Percent of net operating income	Percent of gross farm revenues	Percent of payments
$10,000 to $249,999	121,887	76.8	15.7	26.7	41.7
$250,000 to $499,999	21,700	13.7	26.2	20.8	22.3
$500,000 to $999,999	9,975	6.3	22.8	18.8	15.8
$1,000,000 to $1,999,999	3,333	2.1	14.7	12.4	8.8
$2,000,000 and greater	1,770	1.1	20.5	21.3	11.4

Source: Statistics Canada, Farm Financial Survey.

Over time, the importance of off-farm income has increased for smaller farms

- The net operating income of the $10,000 to $249,999 revenue group decreased from $14,000 per farm in 1993 to $9,000 in 2004.
- During the same period, income from off-farm sources increased by 40%; from $39,000 to 62,000.

Chart B1.8
Average farm and off-farm income of small* farms, Canada

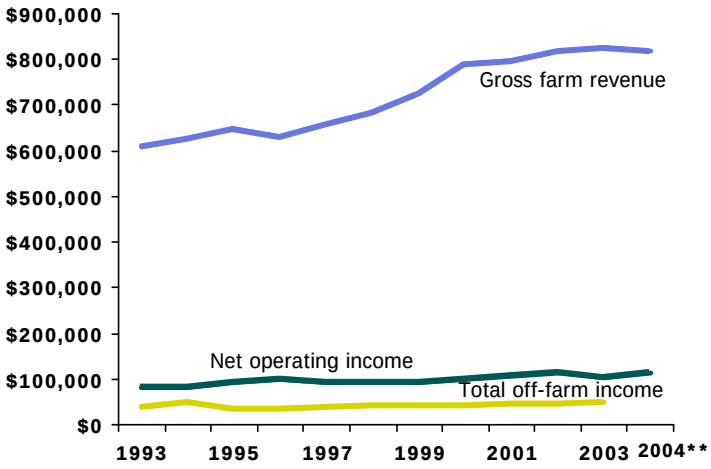


*Small farms are those with gross revenues of $10,000 to $249,999.
** Preliminary results.

Source: Statistics Canada, Whole Farm Database.

- Farms with gross revenues of $250,000 and over exhibited a 34% increase in gross farm revenue during the period of 1993 to 2004.
- During the same period, net operating income increased by 37%, from $81,000 in 1993 to $112,000, and off-farm income increased from $38,000 to $49,000.

Chart B1.9
Average farm and off-farm income of large* farms, Canada



*Large farms are those with gross revenues of $250,000 and over.
**Preliminary results.

Source: Statistics Canada, Whole Farm Database.

Section B2

Typology and Performance

Key points

- Farm typology provides a better understanding of the differences in performance and business strategies of farms with different scales and objectives.
- In 2004, lifestyle and retirement farms accounted for 15% and 22% of farms, in the gross revenue class of $10,000 to $249,999 respectively.
- In 2004, low income farms accounted for 29% of farms in the $10,000 to $249,999 gross revenue class and 15% of farms in the $250,000 and over gross revenue class.
- The highest percentage of farms remain business-focussed.
- Retirement farms generate positive net operating income whereas lifestyle and low income farms reported losses in 2004.
- Regardless of farm size, farm families diversify their income sources through off-farm income, wages and salaries paid to family members, and receive government payments.

Farm typology allows us to analyze the differences in performance and business strategies of farms within the same revenue class

- A closer look at different farm typologies within the same gross revenue class provides a better understanding of the differences in performance and business strategies.

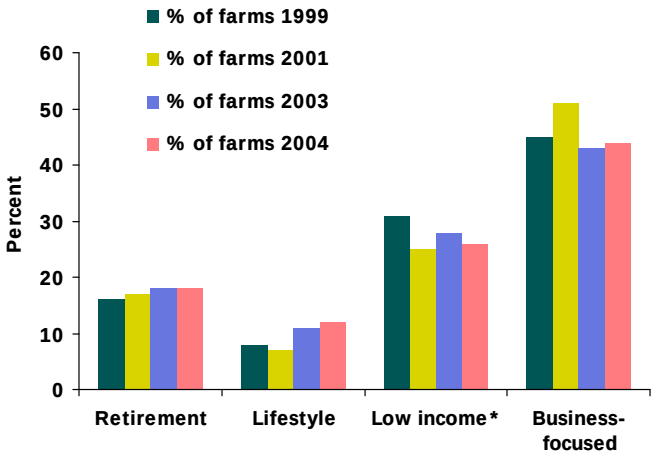
Chart B2.1

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

The distribution of farms by farm typology

- The Farm Financial Survey (FFS), which is used as the data source for the farm typology, covers farms with gross revenues of $10,000 and over.
- There has been little variation in the distribution of farms by typology between 1999 and 2004.
- The highest percentage of farms remains business-focussed, followed by the low-income group.

Chart B2.2
Distribution of farms, by farm typology, Canada

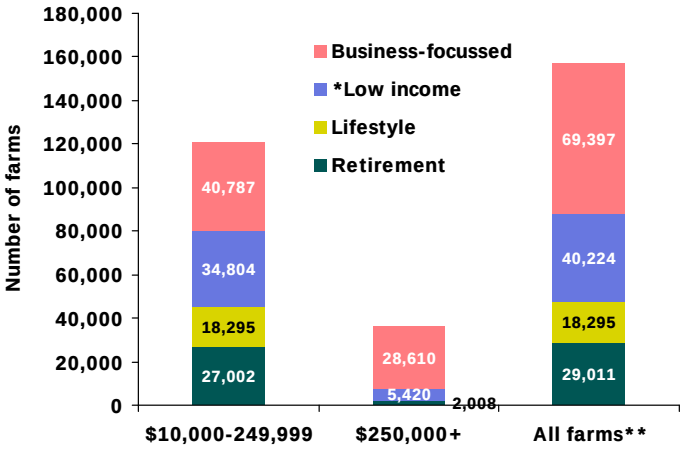


* Those farms (excl. retirement and lifestyle) with farm family income below $35,000.

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

- Among the lower gross farm revenue class (gross revenues between $10,000 and $249,999), there are farms which are business-focussed and doing relatively well (34%). In particular, the medium-sized business-focussed farms are reporting some of the highest family income amongst all farms.
- There are retirement and low income farms in both gross revenue classes, including some in the larger size classes.

Chart B2.3
Distribution of farms by typology and revenue class (2004)



* Those farms (excl. retirement and lifestyle) with total family income below $35,000.

** All farms excludes farms with gross revenues under $10,000 and hutterite and communal operations.

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

Farm typology data: 2004

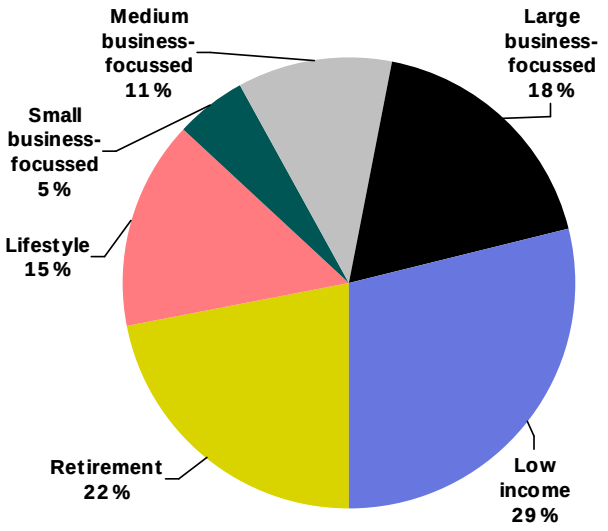
Chart B2.4 (2004)

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

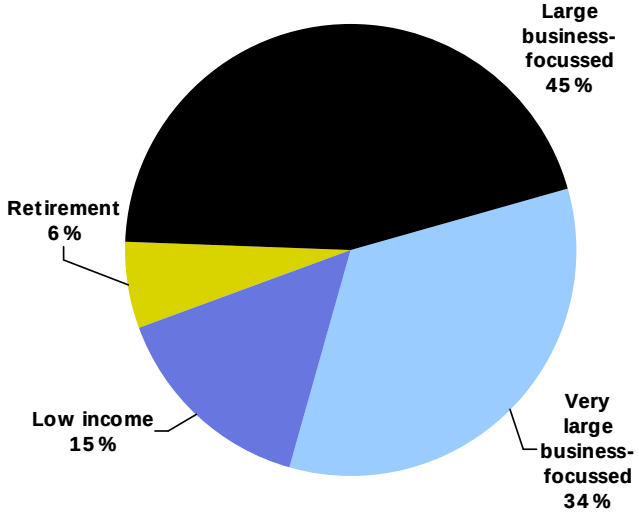
* Low income farms include those with family income under $35,000 (excl. retirement and lifestyle).
** Gross farm revenues include government payments.
*** Family share is based on family's percent ownership of the farm.
[a] Total farm expenses do not include depreciation.

Distribution of farms by farm typology, 2004

$10,000 - $249,999



$250,000 and over



Source: Statistics Canada, Farm Financial Survey

Farm typology data: 2003

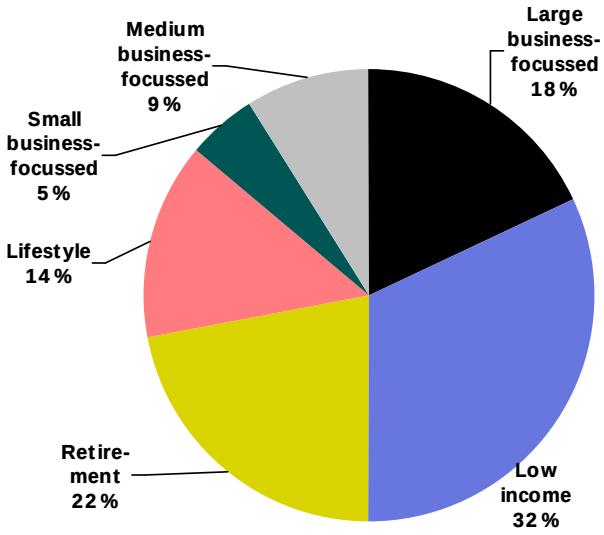
Chart B2.4 (2003)

Gross revenue class	Typology	# of farms	Gross farm revenue ** (A)	Total farm expenses[a] (B)	Family share of govt. payments *** (C)	Family share of net market income *** (D)	Farm wages and salaries (E)	Off-farm income (F)	Total family income (G = C + D + E + F)
$10,000 $249,999	Retirement (s)	27,514	53,109	49,025	7,444	-3,405	1,526	30,474	36,040
	Lifestyle	17,995	23,431	33,272	2,554	-12,175	738	90,359	81,475
	Low income* (s)	38,850	79,543	90,257	9,793	-20,341	1,943	13,292	4,687
Business-focussed	Small	6,488	28,422	22,739	3,383	2,530	1,039	36,950	43,902
Business-focussed	Medium	11,775	72,087	59,945	10,025	2,079	2,522	59,906	74,531
Business-focussed	Large	23,117	164,744	122,117	18,041	23,264	7,218	34,179	82,703
	Total	125,739	78,057	72,614	9,450	-4,170	2,657	37,507	45,444
$250,000 and over	Retirement (l)	1,387	611,252	485,751	45,037	69,614	14,895	33,707	163,254
$250,000 and over	Low income* (l)	6,016	700,731	790,325	46,215	-127,220	14,242	12,509	-54,255
$250,000 and over Business-focussed	Large	16,653	344,667	264,208	26,745	48,385	16,785	22,139	114,053
$250,000 and over Business-focussed	Very large	11,051	1,179,311	973,053	51,322	127,394	46,775	27,225	252,716
$250,000 and over	Total	35,107	678,942	586,248	38,541	44,000	25,714	22,547	130,801

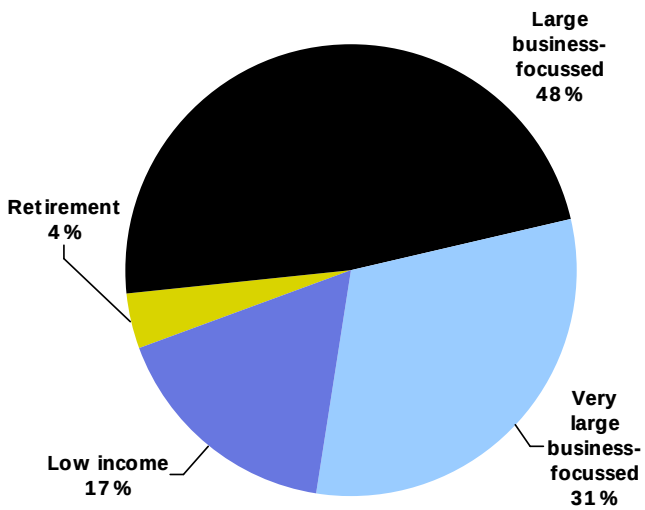
* Low income farms include those with family income under $35,000 (excl. retirement and lifestyle).
** Gross farm revenues include government payments.
*** Family share is based on family's percent ownership of the farm.
[a] Total farm expenses do not include depreciation.

Distribution of farms by farm typology, 2003

$10,000 - $249,999



$250,000 and over



Source: Statistics Canada, Farm Financial Survey

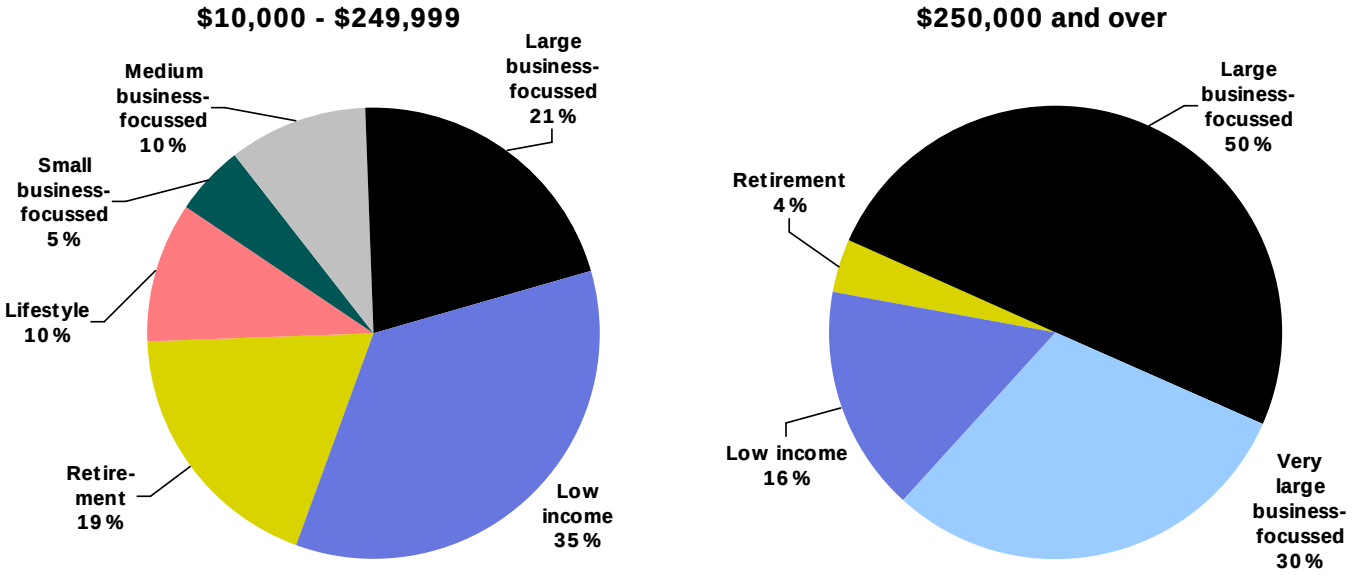
Farm typology data: 1999

Chart B2.4 (1999)

Gross revenue class	Typology	# of farms	Gross farm revenue ** (A)	Total farm expenses[a] (B)	Family share of govt. payments *** (C)	Family share of net market income *** (D)	Farm wages and salaries (E)	Off-farm income (F)	Total family income (G = C + D + E + F)
$10,000 $249,999	Retirement (s)	26,819	53,143	43,541	3,207	6,049	1,575	23,558	34,389
	Lifestyle	13,601	26,304	27,800	1,390	-2,921	840	85,803	85,112
	Low income* (s)	47,709	77,870	76,083	3,767	-2,735	1,923	10,529	13,485
Business-focussed	Small	7,346	28,861	20,967	1,660	5,909	1,430	35,330	44,328
Business-focussed	Medium	14,605	71,065	51,563	4,192	14,728	3,669	40,963	63,552
Business-focussed	Large	29,483	162,469	116,091	7,485	34,991	9,902	25,222	77,601
	Total	139,563	82,673	68,109	4,147	9,187	3,593	27,963	44,890
$250,000 and over	Retirement (l)	1,109	540,031	441,874	10,263	68,526	15,359	55,515	149,663
	Low income* (l)	4,803	549,297	593,986	16,774	-53,309	12,877	9,770	-13,888
Business-focussed	Large	15,597	339,845	246,651	14,955	63,869	21,892	17,256	117,972
Business-focussed	Very large	9,133	1,161,841	942,187	20,212	137,831	50,447	33,674	242,164
	Total	30,642	624,925	515,474	16,637	67,714	28,754	22,360	135,465

* Low income farms include those with family income under $35,000 (excl. retirement and lifestyle).
** Gross farm revenues include government payments.
*** Family share is based on family's percent ownership of the farm.
[a] Total farm expenses do not include depreciation.

Distribution of farms by farm typology, 1999

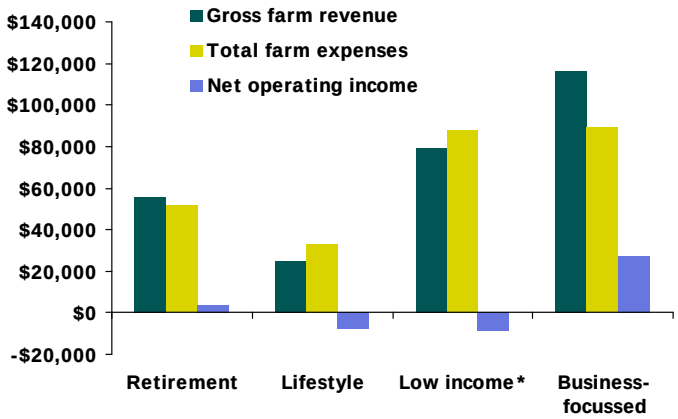


Source: Statistics Canada, Farm Financial Survey

Net operating income varies by typology within the same gross revenue class

- Average net operating income of the under $250,000 group in 2004 was $6,375 and $106,696 for the $250,000 and over gross revenue class.
- The retirement farms in both gross farm revenue classes generate positive net operating income. In fact, those in the $250,000 and over gross revenue class earned a healthy net operating income.
- The lifestyle and low income farms reported farm losses in 2004.

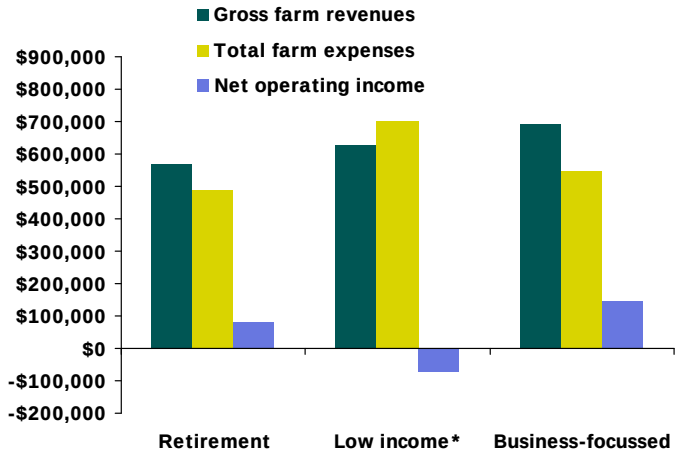
Chart B2.5
Average net operating income by typology for the $10,000-$249,999 gross farm revenue class (2004)



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

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

Chart B2.6
Average net operating income by typology for the $250,000 and over gross farm revenue class (2004)



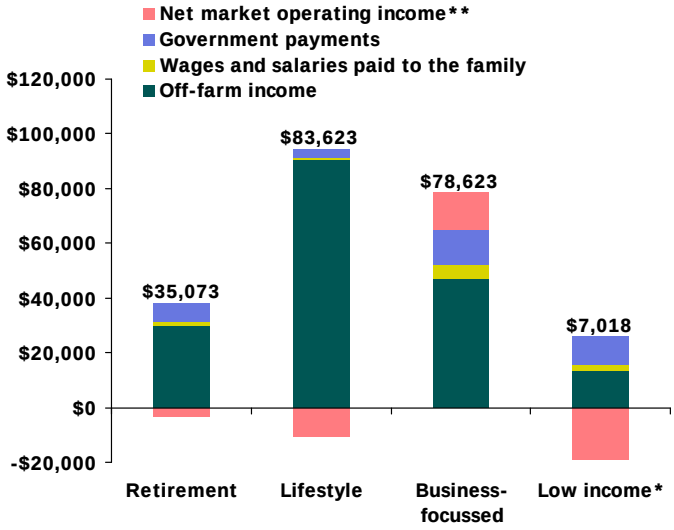
* Low income farms include those with family income under $35,000 (excl. retirement).

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

Farm families diversify their income sources to varying degrees

- For smaller farms, a larger share of farm family income comes from off-farm sources.
- Off-farm income is a larger share of total income for retirement farms and lifestyle farms in the small gross revenue class.
- Lifestyle farms have the highest off-farm income of all groups.
- Low income farms in the $10,000-$249,999 gross revenue class report negative net market operating income, but their total family income is still positive. They do represent 29-34% of farms in this gross revenue class and 26-31% of total farms in any given year.
- Small-scale retirement farms depend on pension income and earn a negative net market operating income.
- Farms in the larger gross revenue classes earn a greater share of their family income from farm operations.
- In any given year, low income farms represent 15-16% of farms in the $250,000 and over gross revenue class.

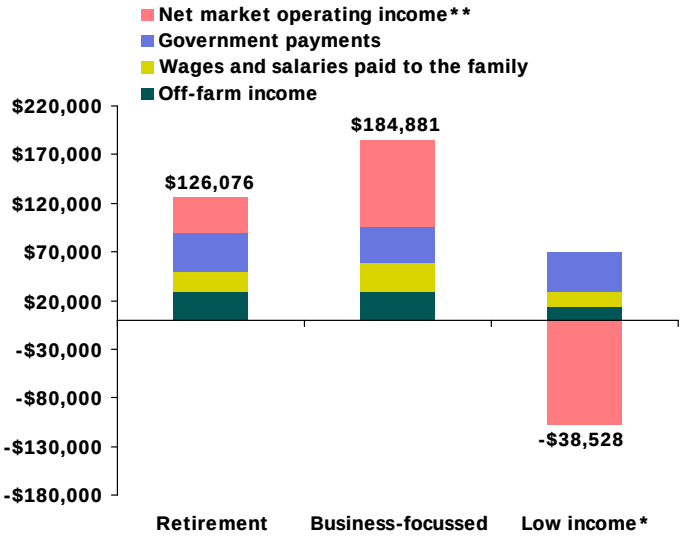
Chart B2.7
Components of total family income by typology
$10,000-$249,999 gross revenue class
(2004)



* Low income farms include those with family income under $35,000 (excl. retirement and lifestyle).
**Net market operating income is net operating income less program payments.

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

Chart B2.8
Components of total family income by typology
$250,000 and over gross revenue class
(2004)



* Low income farms include those with family income under $35,000 (excl. retirement).
**Net market operating income is net operating income less program payments.

Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

Section B3

Diversity of Farm Performance

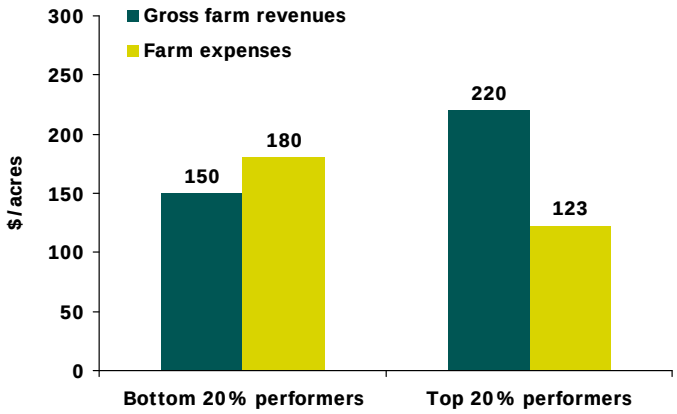
Key points

- Farm performance varies between farms with similar characteristics in terms of location, size and farm type.
- Top performing farms have significantly lower costs than bottom performing farms. Controlling production costs is key to farm profitability.
- Differences in performance result in some farms being consistently profitable whereas others are consistently unprofitable.
- More research is required in this area to identify the factors and solutions.

Top performers consistently have costs that are lower than bottom performers

- Some trends emerge when farms are classified by performance on the basis of margins.
- For example, bottom performing large grain and oilseed farms in the Prairies, consistently have costs that are higher than top performers, regardless of the year under consideration.
- Further analysis is required to determine whether these differences are due to differences in geographical location, productivity or business management practices.

Chart B3.1
Gross revenues and farm expenses for large business-focussed prairie grain and oilseed farms (2004)**



* Performance based on margins (gross farm revenues minus total farm expenses plus wages and salaries to family members) over gross farm revenues.

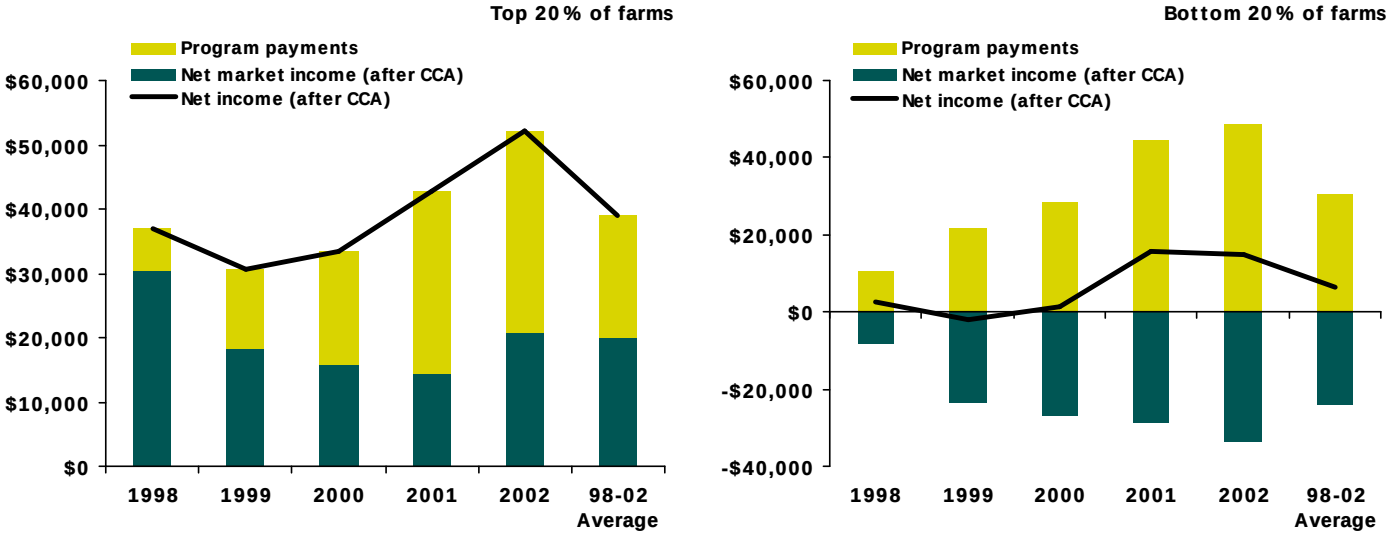
** Large business-focussed farms have gross revenues of $250,000 and over.

Source: Statistics Canada and AAFC calculations.

Top performing grain and oilseed farms have consistently positive net market income whereas bottom performing farms have consistently negative net market income

- Bottom performing farms have a small net income despite significant government payments.
- Top performing farms generated positive net market income every year, which is supplemented with government payments.

Chart B3.2
Net income of Saskatchewan grains and oilseeds farms
$100,000 - $249,999 sales class



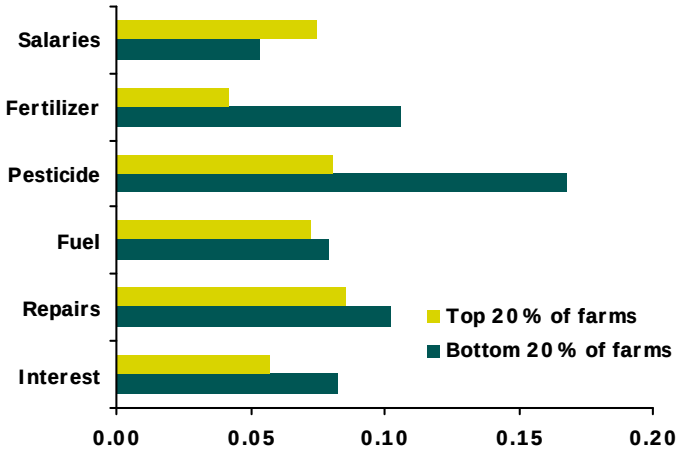
Note: Calculation of top and bottom 20% of farms is based on the five year average (1998-2002) of production margin less crop insurance and contract work over gross commodity sales.

*CCA – capital cost adjustments.

Source: AAFC, NISA database.

- Bottom performing grain and oilseed farms in Saskatchewan had higher farm expenses per dollar of gross farm revenue particularly for fertilizer and pesticides. Top performing farms had higher salary expenses per dollar of gross farm revenue.

Chart B3.3
Farm expenses per dollar of gross farm revenue, Saskatchewan Grains and oilseeds farms
$100,000 – $249,999
(average of 1998 to 2002)

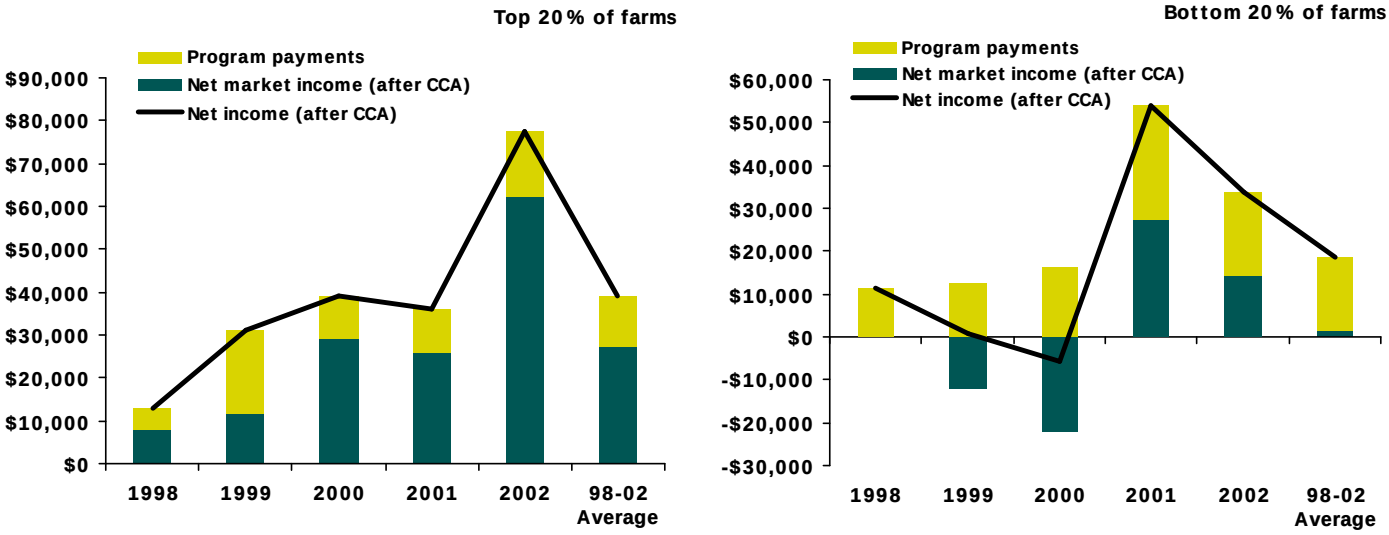


Source: AAFC; NISA database.

Top performers of New Brunswick potato farms have on average significant net market income

- Top performing potato farmers in New Brunswick have positive net market income each year and have an average net income of $39,237 for the 1998-2002 time period.
- The bottom performers had an average net market income of $18,789 for the 1998 to 2002 time period.

Chart B3.4
Net income of New Brunswick potato farms
$250,000 - $500,000 sales class

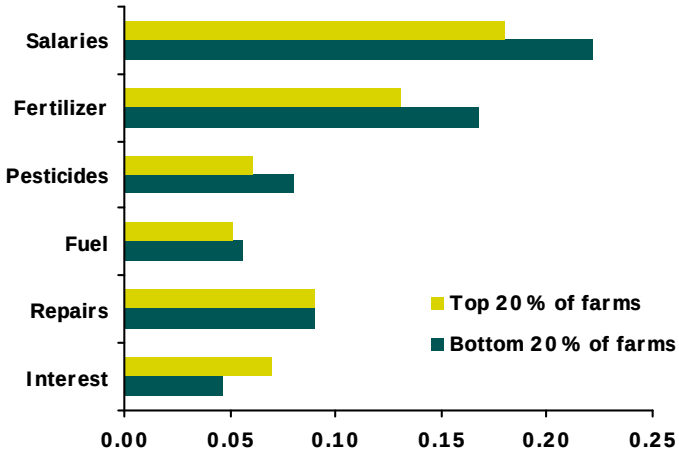


Note: Calculation of top and bottom 20% of farms is based on the five year average (98-02) of production margin less crop insurance and contract work over gross commodity sales.

Source: AAFC, NISA database.

- Bottom performing potato farms in New Brunswick have higher farm expenses per dollar of gross farm revenue particularly for fertilizer, pesticides and salaries. Top performing farms have higher interest expenses.

Chart B3.5
Farm expenses per dollar of gross farm revenue, New Brunswick potato farms
$250,000 – $500,000 sales class
(average of 1998 to 2002)

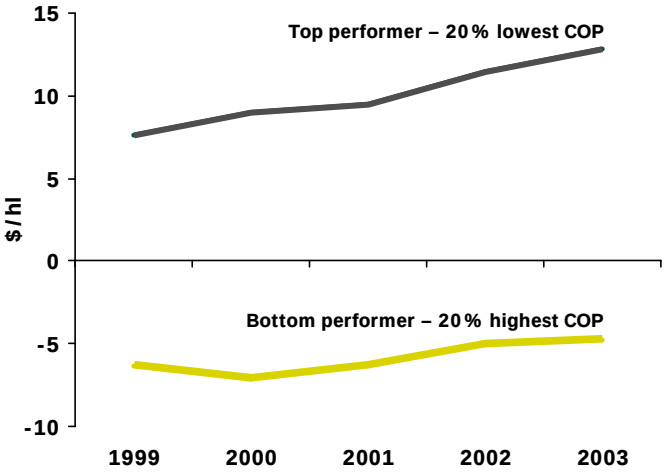


Source: AAFC, NISA database.

Quebec dairy farm profits have been increasing for both top and bottom performers although net income of bottom performers is still negative

- For the 1999-2003 period, the top dairy performers had a positive net income of $7.86/hl compared to a negative income of $3.86/hl for the bottom performers.

Chart B3.6
Quebec dairy farms – net income per hl

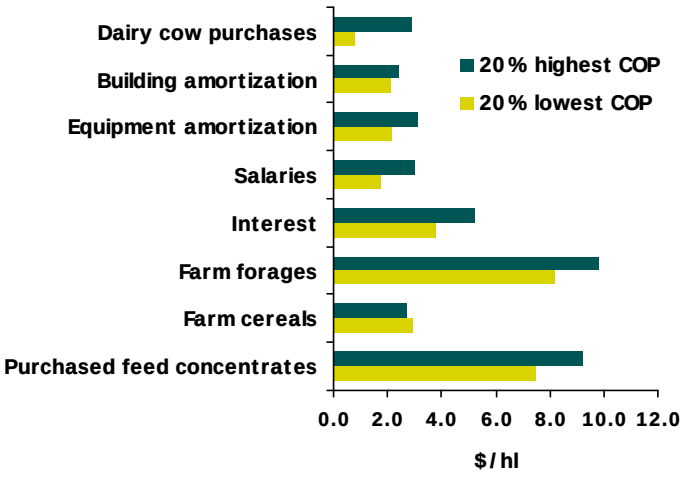


Note: Calculation of top and bottom 20% of farms is based on the COP of milk.

Source: Agritel Database and AAFC calculations.

- Farms with the highest Cost of Production (COP) are reporting higher unit expenses for all input categories compared to the farms with low COP.
- The gap between farms with high COP and those with low COP is particularly large for cow purchases and farm forages.

Chart B3.7
Major expenses – Quebec dairy farms (1999 to 2003)



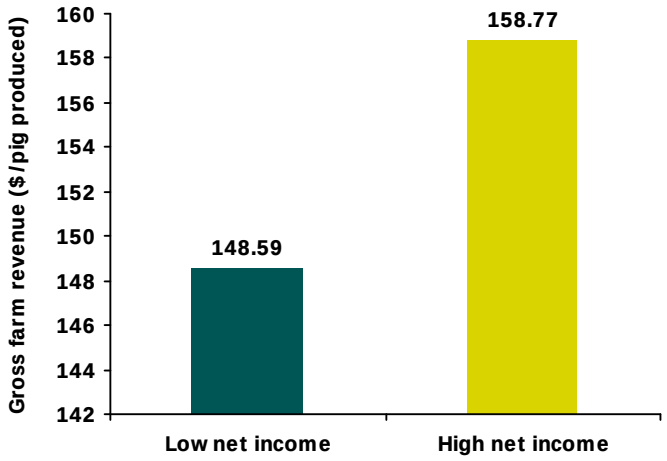
Note: Calculation of top and bottom 20% of farms is based on the COP of milk. Top performers have lowest COP.

Source: Agritel Database and AAFC calculations.

Long term analysis of Ontario hog farms also indicate the importance of managing costs

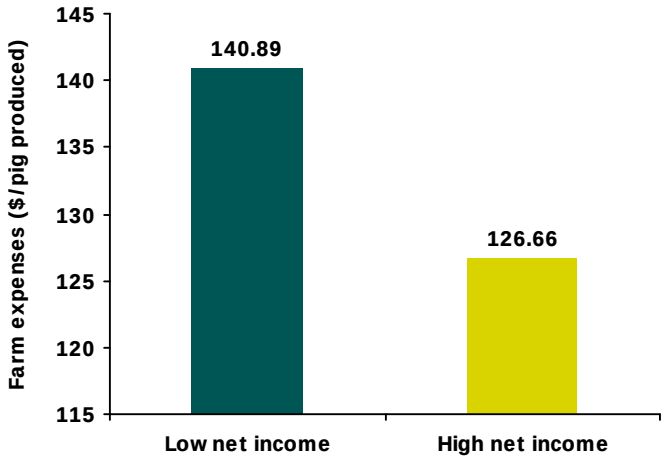
- Successful farms exhibit higher gross revenue per pig, but major differences in net incomes between the two groups stem from lower expenses.
- High net income hog producers had expenses that were $14.23/pig below the expenses of low net income producers.

Chart B3.8
Gross farm revenue per pig of Ontario hog farms (2000 to 2004)



Source: Farm performance productivity, Ridgetown College, University of Guelph.

Chart B3.9
Total farm expenses per pig of Ontario hog farms* (2000 to 2004)



*This includes Capital Cost Adjustments (CCA).

Source: Farm performance productivity, Ridgetown College, University of Guelph.

Section B4

Net worth, farm investment and financial vulnerability

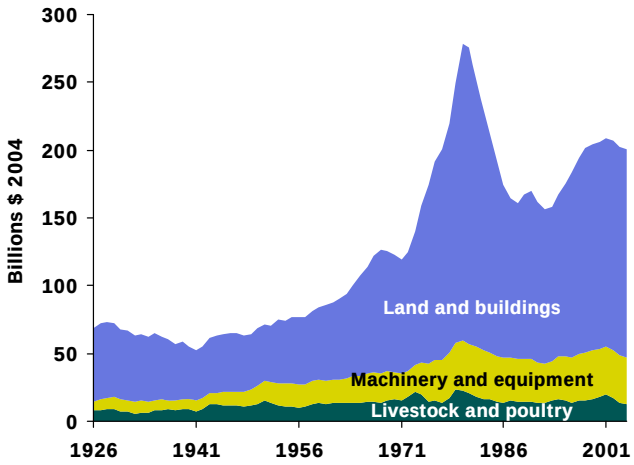
Key points

- While net cash income has declined over time, total asset values of farms have increased substantially.
- Large increases have also occurred in the value of farm quotas.
- Large farms continue to make significant net capital investments. These investments reflect both farm expansion and investment in new technologies.
- Net capital investments vary by sub-sector ranging from about $55,000 perform in beef farms to $177,000 in greenhouse and nursery farms.
- In the last 10 years, the debt to asset ratio has increased for both small and large farms but is higher for large farms.
- Some large farms are financially vulnerable as determined by their cash flow and equity levels.
- Average farm family wealth varies by province.

While real net cash income has declined, real asset values have increased over time

- Over time, the real value of agricultural land and buildings in Canada has generally increased (2004 constant dollars).

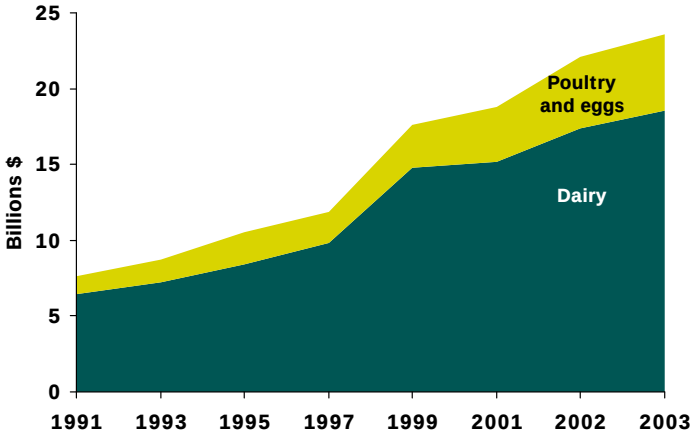
Chart B4.1
Total value of farm assets in Canada



Source: Statistics Canada, CANSIM Table 002-0007.

- Quota values for dairy, poultry and eggs have also increased over time.

Chart B4.2
Total dairy, poultry and egg quota values in Canada

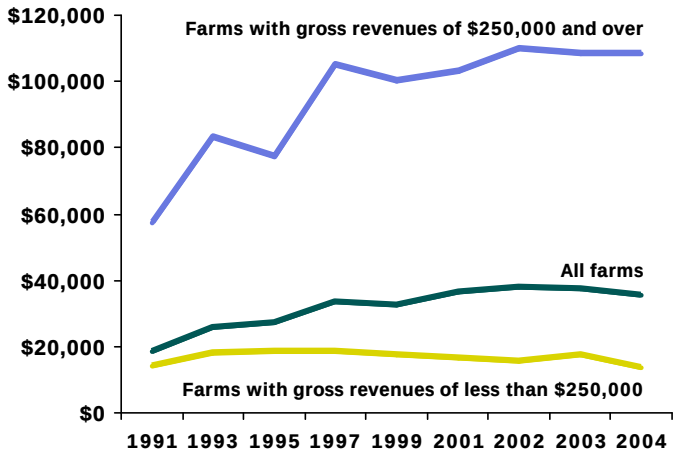


Source: Statistics Canada, Farm Financial Survey and AAFC calculations.

The investment gap has been increasing among different size farms

- In 2004, farms with gross revenues of $250,000 and over reported an average net capital investment of $108,000 per farm and accounted for 71% of total Canadian farm investments.
- In 2004, farms with gross revenues under $250,000 reported an average net capital investment of $14,000 compared to $35,000 for all farms.

Chart B4.3
Average net capital investment*, Canada
(1991 to 2004)



*Net capital investment measures capital purchases minus capital sales.

Source: Statistics Canada, Farm Financial Survey.

Net capital investment also varies by farm sub-sectors

- Large beef farms had the lowest net investment in 2004 whereas greenhouse and nursery farms had the highest investment.

Chart B4.4

INVESTMENT OF LARGE CANADIAN FARMS BY FARM TYPE, 2004				
	Number of farms	Percent of farms	Average net capital investment*	Percent of net investment
Potato	711	2%	$166,000	3.0%
Greenhouse and nursery	1,509	4%	$177,000	6.7%
Grain and oilseed	12,292	33%	$96,500	29.8%
Fruits and vegetables	1,339	4%	$105,600	3.6%
Dairy	8,660	24%	$136,800	29.8%
Beef	4,809	13%	$54,600	6.6%
Hog	2,887	8%	$132,600	9.6%
Poultry and eggs	2,466	7%	$85,000	5.3%
Other farm types	2,105	6%	$109,000	5.8%
All large farms**	36,778	100%	$108,300	100.0%

*Net capital investment measures capital purchases minus capital sales.

**Large farms have gross revenues of $250,000 and over.

Source: Statistics Canada, Farm Financial Survey.

Liabilities also exhibit great variation across sub-sectors

- On a per farm basis, large potato farms had the highest average liabilities while grain and oilseed farms had the lowest in 2004.

Chart B4.5

LIABILITIES OF LARGE CANADIAN FARMS BY FARM TYPE, 2004

	Number of farms	Percent of farms	Average assets	Average liabilities	Debt/asset ratio
Potato	711	2%	$3,520,000	$1,187,000	35%
Greenhouse and nursery	1,509	4%	$2,162,000	$786,000	30%
Grain and oilseed	12,292	33%	$2,152,000	$475,000	25%
Fruits and vegetables	1,339	4%	$2,230,000	$656,000	30%
Dairy	8,660	24%	$3,396,000	$946,000	27%
Beef	4,809	13%	$2,302,000	$592,000	29%
Hog	2,887	8%	$2,696,000	$877,000	40%
Poultry and eggs	2,466	7%	$3,427,000	$748,000	24%
Other farm types	2,105	6%	$2,206,000	$510,000	31%
All large farms*	36,778	100%	$2,626,000	$686,000	28%

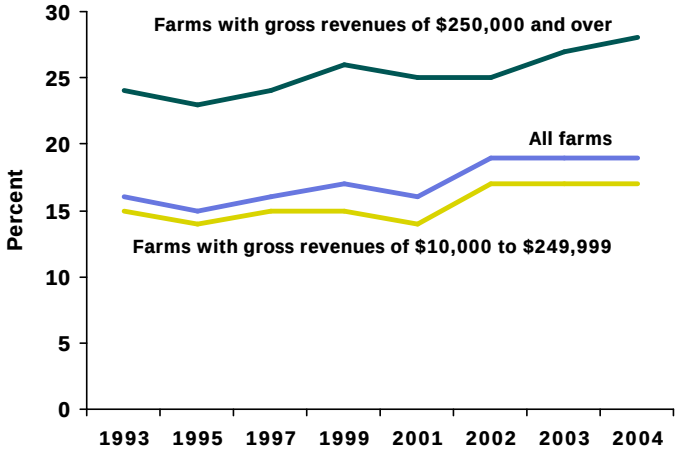
*Large farms have gross revenues of $250,000 and over.

Source: Statistics Canada, Farm Financial Survey.

The debt to asset ratio has been increasing for all gross farm revenue classes although the largest increase is for large farms

- The debt to asset ratio is high for large farms, 28% compared to 17% for small farms.
- The debt to asset ratio increased for both groups over time from 15% in 1993 to 17% in 2004 for small farms and from 24% to 28% for large farms.

Chart B4.6
Debt to asset ratio, Canada

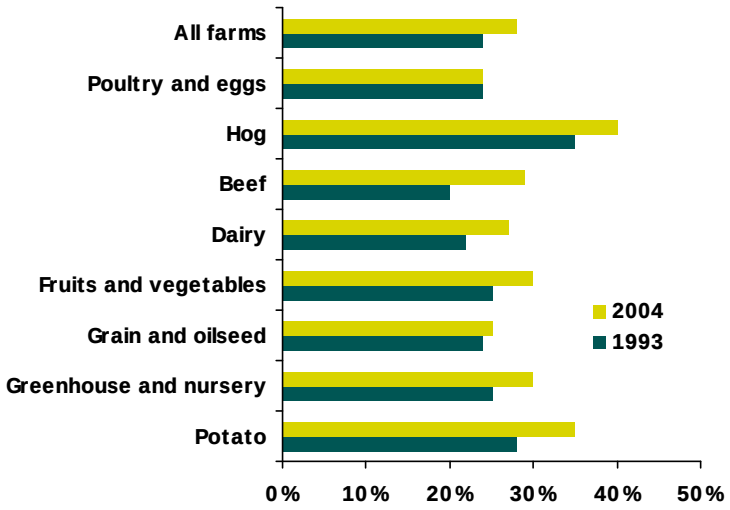


Source: Statistics Canada, Farm Financial Survey.

Since 1993, the debt to asset ratio has increased for most farm types

- Large beef farms reported the highest increase (45%) whereas grain and oilseed farms reported the lowest increase (6%).
- Poultry and egg farms reported a stable debt to asset ratio.
- Hog farms had the highest debt to asset ratio in both 1993 and 2004.

Chart B4.7
Debt to asset ratio for large* farms, Canada



*Large farms have $250,000 and over in gross revenues.

Source: Statistics Canada, Farm Financial Survey.

Financial vulnerability may be determined by cash flow and equity levels

- Vulnerability has been calculated based on equity as a percent of total farm assets and cash flow. Farms with low cash flow and low equity are defined as the most vulnerable whereas farms with high cash flow and high equity are the least vulnerable.

Chart B4.8

DISTRIBUTION OF FARMS IN WESTERN CANADA WITH GROSS REVENUES OF $250,000 AND OVER, BY CASH FLOW AND EQUITY CLASS – 2004**

	Equity as percentage of total farm assets			
	Less than 50 %	50 % to 75 %	Greater than 75 %	All equity
Cash flow less than $20,000	**6 %**	**8 %**	**6 %**	20%
Cash flow $20,000 to $35,000	**1 %**	**2 %**	**2 %**	5%
Cash flow greater than $35,000	**7 %**	**19 %**	**49 %**	75%
All cash flow	14%	29%	57%	100%

*Cash flow: cash generated and used by the farm in any given period.

**This includes British Columbia, Alberta, Saskatchewan and Manitoba.

Source: Statistics Canada, Farm Financial Survey.

- Large farms in western Canada can be classified into three levels of vulnerability:

  - 15% are under significant financial vulnerability.
  - 15% are under moderate financial vulnerability.
  - 70% are not under financial vulnerability.

Financial vulnerability may be determined by cash flow and equity levels

Chart B4.9

DISTRIBUTION OF FARMS IN ONTARIO AND QUEBEC WITH GROSS REVENUES OF $250,000 AND OVER, BY CASH FLOW AND EQUITY CLASS – 2004

	Equity as percentage of total farm assets			
	Less than 50 %	50 % to 75 %	Greater than 75 %	All equity
Cash flow less than $20,000	**6 %**	**7 %**	**5 %**	19%
Cash flow $20,000 to $35,000	**1 %**	**3 %**	**1 %**	5%
Cash flow greater than $35,000	**12 %**	**24 %**	**41 %**	77%
All cash flow	19%	34%	47%	100%

Source: Statistics Canada, Farm Financial Survey.

- Large farms in Ontario and Quebec can also be classified into three levels of vulnerability:
  - 14% are under significant financial vulnerability.
  - 20% are under moderate financial vulnerability.
  - 66% are not under financial vulnerability.

For operators of small farms, average family net worth varies by province

- For farms with gross revenues of $10,000 to $249,999, non-farm equity contributes 14% to the total family net worth.
- Total farm family equity is higher in British Columbia, Ontario and Alberta than the Canadian average.

Chart B4.10

NET WORTH OF FAMILIES OPERATING SMALL FARMS BY PROVINCES, CANADA 2004			
	Family farm equity	Family non-farm equity	Total family equity
		DOLLARS	
Atlantic	421,400	77,400	498,800
Quebec	520,000	91,800	611,800
Ontario	657,400	123,200	780,600
Manitoba	436,600	54,300	490,900
Saskatchewan	433,300	65,700	499,000
Alberta	668,500	94,900	763,400
British Columbia	706,300	160,600	866,900
Canada	561,900	92,300	654,200

Source: Statistics Canada, Farm Financial Survey.

- The average net worth for families operating small farms was $654,200 which is substantially higher than for non-farm families.

For operators of large farms, average family net worth varies by province

- For farms with revenues of $250,000 and over, non-farm equity contributes 8% to the family net worth.
- The average family equity for larger farms is almost three times that for smaller farms.

Chart B4.11

NET WORTH OF FAMILIES OPERATING LARGE FARMS BY PROVINCES, CANADA 2004			
	Family farm equity	Family non-farm equity	Total family equity
		DOLLARS	
Atlantic	1,612,900	116,200	1,729,100
Quebec	1,382,800	106,600	1,489,400
Ontario	1,781,900	159,000	1,940,900
Manitoba	1,204,900	111,000	1,315,900
Saskatchewan	1,127,800	92,700	1,220,500
Alberta	1,969,800	136,200	2,106,000
British Columbia	2,739,500	287,700	3,027,200
Canada	1,619,400	134,000	1,753,400

Source: Statistics Canada, Farm Financial Survey.

Section C

Opportunities to Improve Competitiveness Through Productivity Growth and Innovation

Summary

- Profitability in the agriculture sector can be enhanced through higher output prices, lower input prices and productivity improvements.
- Productivity improvements depend on investments in R&D, innovation and public infrastructure, removal of regulatory impediments and improvement in skills and labour force quality.
- There are new opportunities emerging for the Canadian agriculture and agri-food sector from increased demand for traditional commodities from developing countries such as China, Brazil and Russia and for new value-added and consumer-oriented products in developed and advanced developing country markets where consumers are willing to pay more for quality attributes. Innovation can help develop these new value-added products.

The greatest opportunity to increase profitability is through productivity improvements

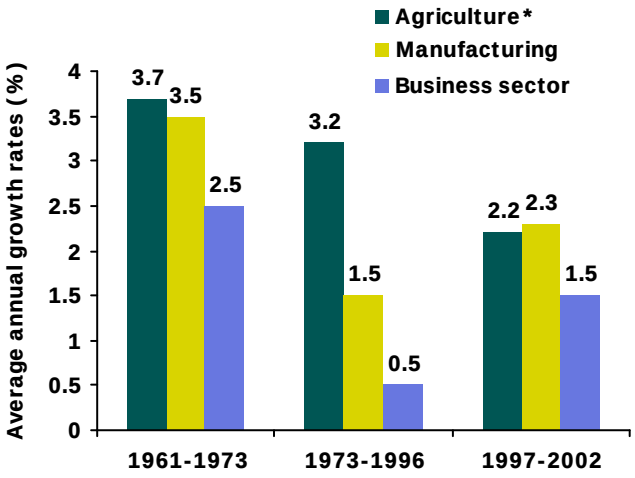
There are three ways to enhance profitability:

- **Through higher output prices**
  - Most agricultural output prices are set in global markets so the scope for a small country to influence is limited.
  - Trade reform may have some impact.
  - Higher-priced value-added products may provide some important opportunities in the future.
- **Through lower input prices**
  - Limited influence since many are set in global markets or set outside agriculture.
    - Regulations can have an impact on input prices.
  - Government support policies can unintentionally increase costs (e.g. land and quota values).
- **Through productivity growth**
  - Potential for major gains by enhancing structural change and innovation through:
    - Enhancing private and public sector spending on R&D and investment in public infrastructure.
    - Removing regulatory impediments.
    - Developing new products that meet changing consumer and market demands.

Canada's agriculture industry has experienced strong productivity growth in the past

- Productivity growth and technological change have contributed to the competitiveness of Canadian agriculture.
- Primary agriculture has experienced rapid productivity growth over the past forty years, slowing down in more recent years.
- Multifactor productivity in agriculture grew at an average annual rate of 2.2% between 1997 and 2002 comparable to manufacturing but higher than the business sector.

Chart C1
Multifactor productivity by industry, Canada



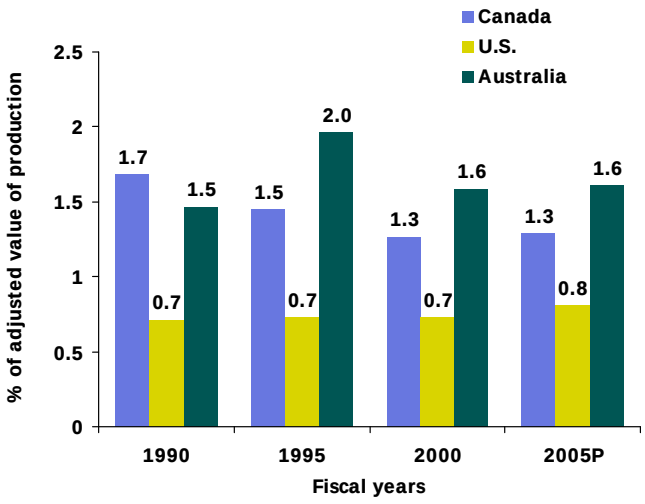
*Agriculture, forestry, fishing and hunting.

Source: Statistics Canada, Productivity Growth by industry.

Investing in public sector R&D and infrastructure can complement private sector investments for improving productivity

- In agriculture, public sector investment in R&D in Canada has fallen over time when measured as a share of value of production.
- Investing in public infrastructure is proven to benefit productivity growth: studies show that for every dollar spent on public infrastructure, productivity in food processing alone went up by $.03 (dollars) (Harchaoui T.M. and Tarkhani F., 2003).

Chart C2
Public R&D expenditures in primary agriculture as a share of value of production

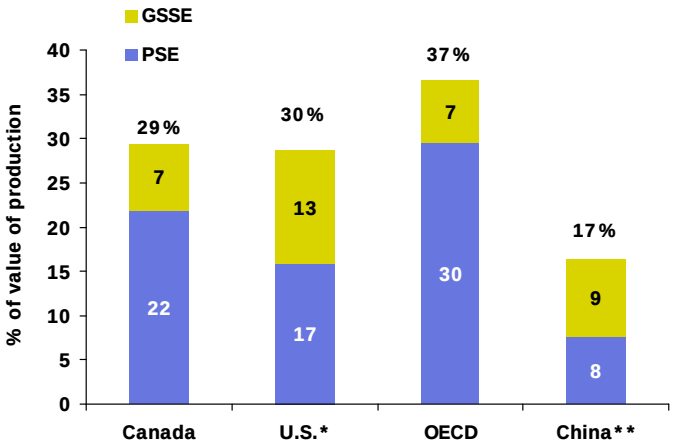


P = Preliminary estimates.
Source: OECD, PSE Database.

Some countries are increasingly spending more on General Support Services Expenditures (GSSE)

- General Support Services Expenditures (GSSE) include government spending on R&D, inspection and market and promotion and many of these are considered not trade distorting by WTO.
- Countries such as the U.S. and China are increasingly spending more on GSSE as a share of the value of production while Canada provides less of this support.
- However, R&D spending as a share of GSSE is higher in Canada than other countries.

Chart C3
Support to producers and agricultural sector
(2003 to 2005 average)

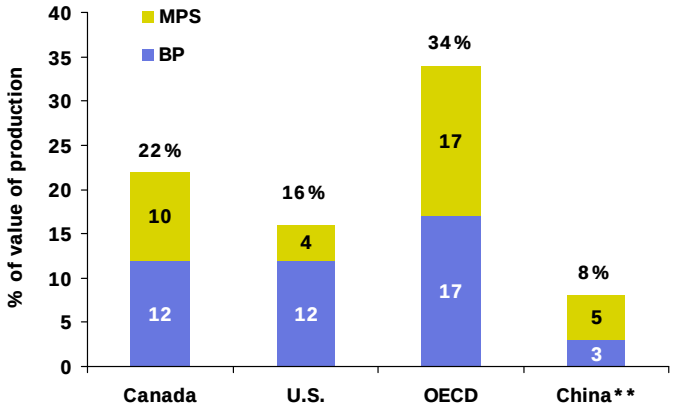


* Includes foodstamps.
**2002-2003 average.

Source: OECD, Agricultural Policies in OECD countries, monitoring and evaluation 2004.

- Producer support estimates are composed of Market Price Support (MPS) and budgetary payments (BP).
- MPS measures transfers to farmers through domestic pricing policies while budgetary payments transfer money directly to farmers. PSEs are not considered green by the WTO and some may face pressure in the future to move to GSSE forms of support.

Chart C4
Producer support estimates (PSE) to agriculture sector
(2002 to 2004 average)



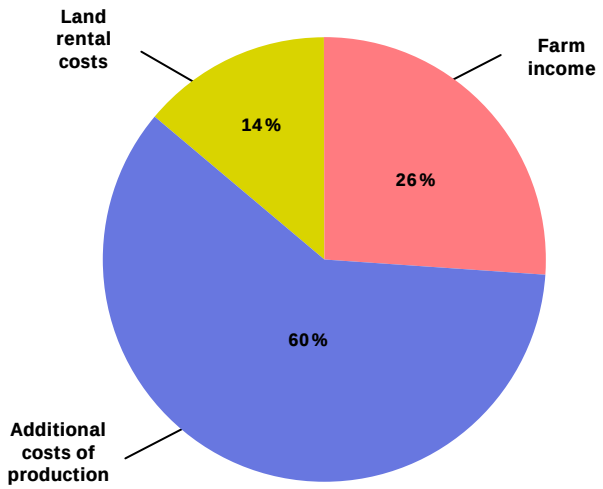
**2002-2003 average.

Source: OECD, Producer and Consumer Support Estimates, OECD Database 1986-2005.

Studies indicate that government programs are capitalized into asset values to different degrees

- OECD studies show that some government support such as output and market price support ends up raising input prices and the price of land rather than boosting farm income.

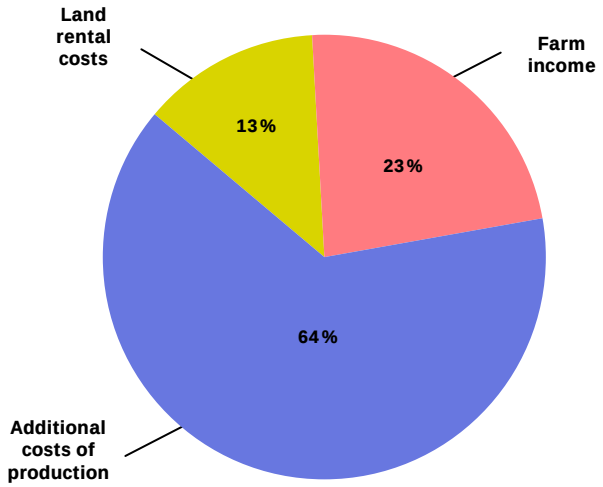
Chart C5
Distribution of government support payments in OECD countries
Output price support*



* Output price support are budgetary payments to farmers based on the output they produce.

Source: OECD.

Chart C6
Market price support* (MPS)



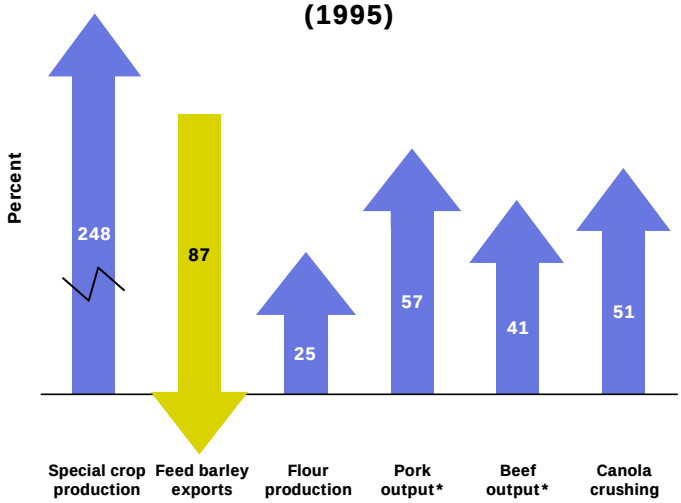
* Such as supply management.

Source: OECD.

Regulations also play an important role in innovation and productivity

- Sometimes reforms of existing regulations result in new opportunities e.g. Western Grain Transportation Act (WGTA).
- For example, the elimination of the WGTA led to increased diversification and value-added in the Prairies.
- Special crop production also rose in response to world market developments and a reduction in summerfallow and increased no-till cultivation, which meant pulse crops were necessary for proper crop rotation.

Chart C7
Percentage change in output since elimination of WGTA subsidies on the Prairies (1995)



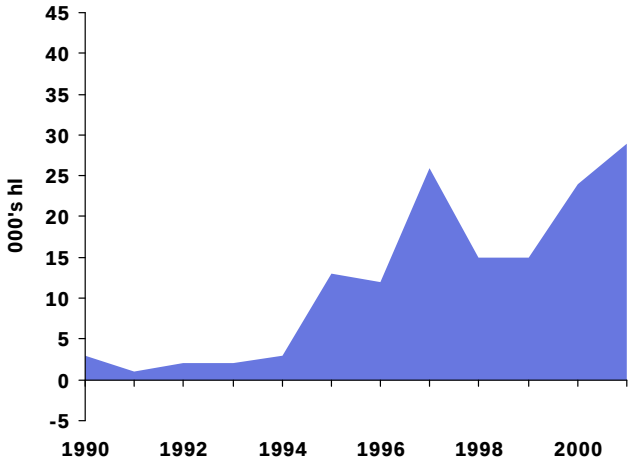
Percent difference between the average of 2000 to 2001 relative to the 1990 to 1995 average.

* Farm level output.

Source: AAFC.

- Changes in regulations enforcing quality standards and reducing import tariffs in the wine industry led to a transformation of the industry in Ontario and British Columbia and an increase in wine exports.

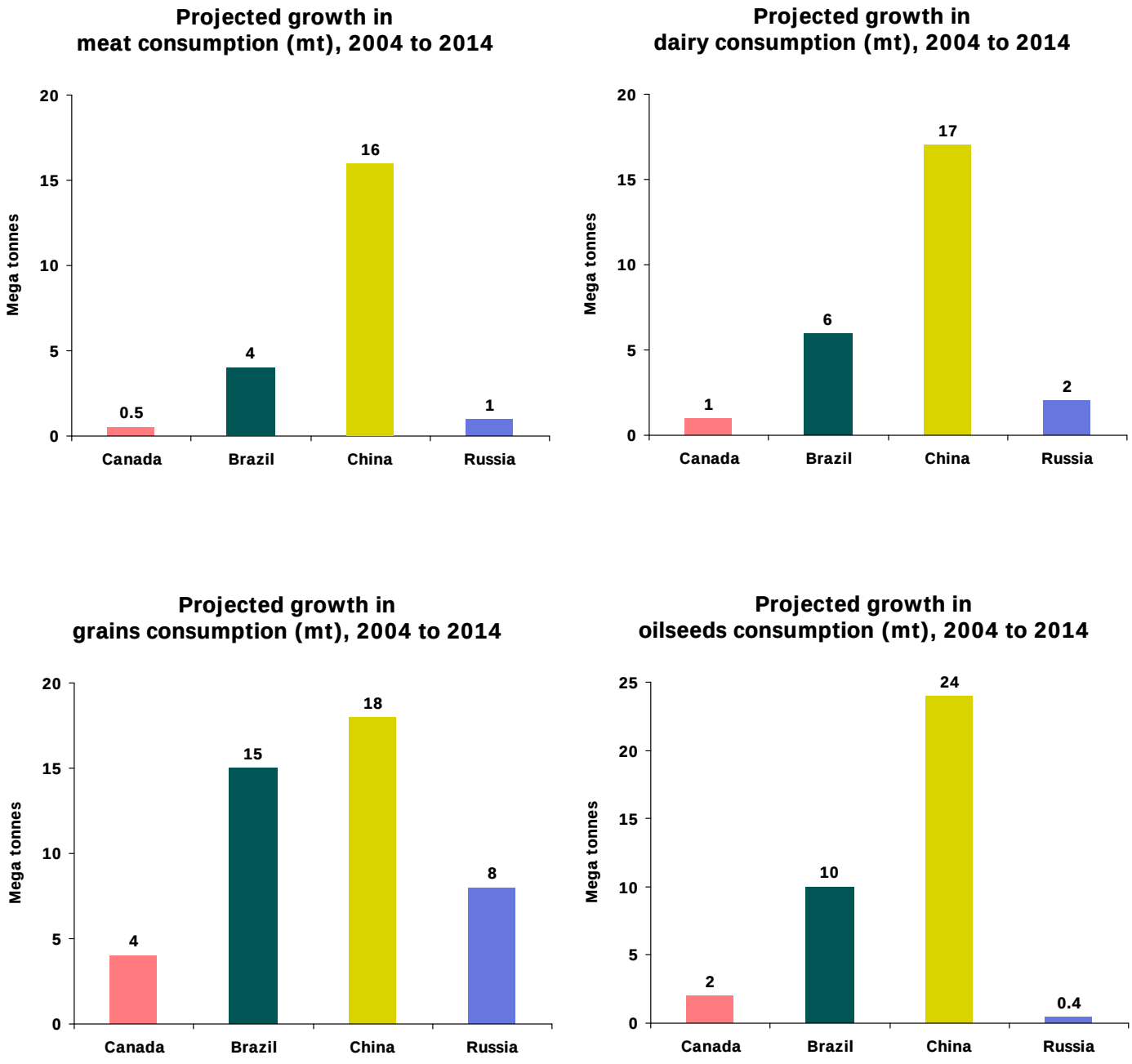
Chart C8
Volume of Canadian wine exports ('000 hl)



Source: Anderson and Norman, 2003.

Productivity improvements will help the sector take advantage of potential opportunities emerging from increased demand for traditional commodities from developing economies

Chart C9

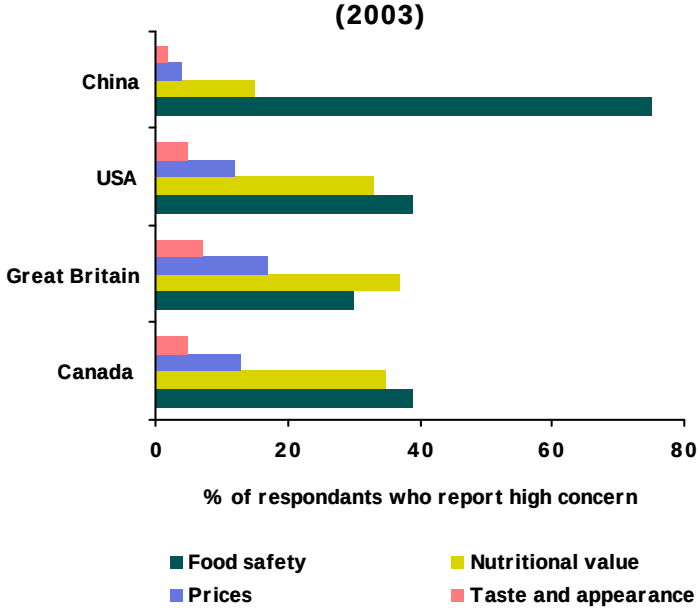


Source: OECD, OECD database.

There will also be opportunities for the sector to respond to changing consumer demands for quality attributes

- An increasing number of consumers throughout the world place importance on food safety and quality above price.

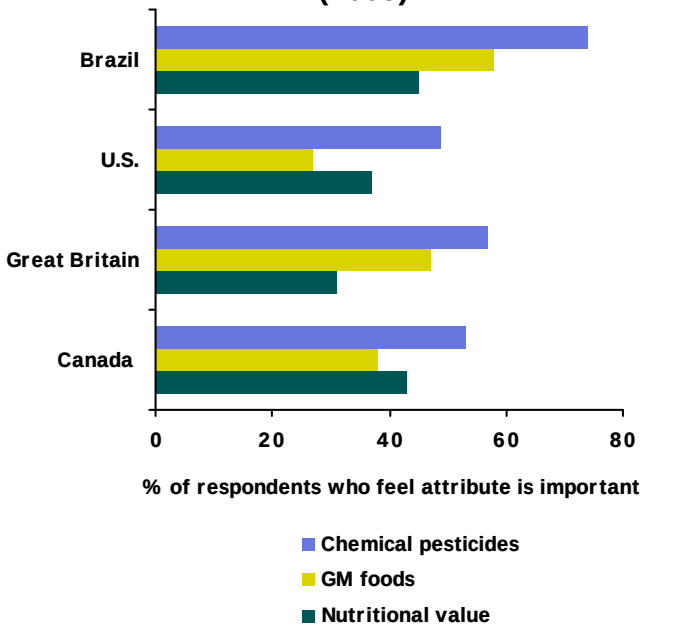
Chart C10
Food issues of concern
(2003)



Source: Globescan 2003.

- Many consumers are seeking food quality attributes such as organics, non-Genetically Modified Organism (GMO), nutritional, healthy and environmentally-friendly products.

Chart C11
Importance of various food attributes by country
(2003)



Source: Globescan 2003.

Opportunities are arising from the development of new technologies that create new uses for commodities:

- Ethanol, bio-diesel,
- Soy 20/20 and Flax 2015,
- Functional foods and nutraceuticals,
- Construction materials such as strawboard,
- Wheat fractionation, triticale,
- Bioplastics and biorefineries.

- These require investments in innovative technologies and the ability to commercialize.
- Changing some regulations may be required for the industry to benefit from these opportunities.
- Further research by this WG will expand on these issues.

Terminology

- **Farm Income measures at the farm level**
  - **Gross farm revenues**: All farm sales including Program payments.
  - **Net operating income**: Difference between Gross Farm revenues and total farm cash expenses (term used at the farm level).
  - **Net income**: Difference between Gross Farm revenues and total farm expenses after Capital Cost allowance (CCA) (term used at the farm level).
  - **Capital cost allowance**: Non-cash expense reflecting the annual cost of capital such as buildings and equipments.
  - **Market net operating income**: Net operating income excluding program payments.
  - **Market receipts**: Gross farm revenues excluding program revenues.
  - **Market income**: Net income excluding program payments.
  - **Net capital investment**: Capital purchases minus capital sales.

- **Farm Income measures at the aggregate level**
  - **Net cash income :** Gross farm revenues minus total farm cash expenses.
  - **Realized net income**: Gross farm revenues minus total farm expenses after CCA.
  - **Net cash market income:** Gross farm revenues excluding program payments minus farm cash expenses.
  - **Realized net market income:** Gross farm revenues excluding program payments minus total farm expenses after CCA.

- **Other**
  - **Equity**: Difference between total assets and total liabilities.