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A TASTE OF TOMORROW

 Industry, Science and
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Canada

A Taste of Tomorrow

Trends and Outlook in the Food and Beverage Processing Industry

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Table of Contents

| | |
|---|----|
| <i>Introduction</i> | 1 |
| <i>What are the Challenges?</i> | 5 |
| <i>What is the State of the Industry?</i> | 7 |
| <i>What About Investment?</i> | 10 |
| <i>What's New in Trade Performance?</i> | 12 |
| <i>Sectoral Statistics and Trends</i> | 15 |
| Meat and Poultry Products | 15 |
| Dairy Products | 17 |
| Supporting Industries: Feeds and Industrial Ingredients | 18 |
| Processed Fruit, Vegetables and Related Products | 19 |
| Biscuits, Bread and Baked Goods | 19 |
| Confectionery and Snack Foods | 19 |
| Beverages | 20 |
| Fishery Products | 21 |
| <i>The Greening of the Bottom Line — Environmental Issues and Strategic Planning</i> | 23 |
| Packaging | 23 |
| Solid Waste from Company Operations | 25 |
| Environmental Protection Regulations | 25 |
| Consumer Demands and Attitudes | 26 |
| Consumer Health Concerns | 27 |
| Retailer Responses to Environmental Issues | 27 |
| Environmentally Friendly Products | 27 |
| Conclusion | 28 |
| <i>Industry, Science and Technology Canada Business Service Centres</i> | 29 |

Introduction

A *Taste of Tomorrow, Trends and Outlook in the Food and Beverage Processing Industry* is an annual publication prepared by the Food Products Directorate of Industry, Science and Technology Canada (ISTC). It provides an overview of the state of the industry, key statistics, and a short résumé of current trends and prospects in each major sector. The most recent data available were used, however, not all statistical information is updated annually. Where actual figures were not available, the data are based on estimates.

Each edition of this publication features a section on a current topic of interest to everyone in the food and beverage industry. This year, it's an analysis of the impact of environmental trends and issues on the food-processing sector.

It should be noted that references to particular firms or corporate strategies in no way represent endorsements. In addition, any such references are intended to be illustrative, not all-inclusive.

More detailed information is available on specific food and beverage industries in ISTC's 1990-91 *Industry Profiles*. These publications are being prepared for the following food and beverage industry sectors:

- Livestock and Poultry Feeds
- Bakery Products
- Beef Processing*
- Biscuits
- Brewing
- Confectionery

- Dairy Products
- Distilling
- Fishery Products — Overview*
- Fishery Products — Fish Meal*
- Fishery Products — Atlantic*
- Fishery Products — Aquaculture*
- Fishery Products — Freshwater*
- Fishery Products — Pacific
- Flour Milling
- Fruit and Vegetable Processing
- Malting
- Oilseed Crushing
- Pet Foods*
- Pork Processing*
- Poultry and Egg Processing
- Processed Forage
- Starch
- Wineries

An order form for these *Industry Profiles* is provided on page 3.

The Food Products Directorate is the contact point for the food industry within the federal government. In addition to medium- to long-term analyses of sectors for consideration in strategic decision making, the directorate analyzes and advocates positions on policy matters of concern to industry within government, and manages or provides access to various government programs designed to assist the animal and plant products, fishery products and grocery products sectors.

*New for 1990-91.

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pages 29 and 30).

Industry, Science and Technology Canada 1990-91 *Industry Profile* Order Form

Please forward copies of the following 1990-91 *Industry Profiles*:

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What Are the Challenges?

The sea of change confronting the world in the past year has not left the food and beverage sector untouched.

An increasing number of challenges are arising. These include evolving trade relationships — for example continuing tariff reductions under the Canada-U.S. Free Trade Agreement — implications for agriculture in the General Agreement on Tariffs and Trade (GATT), growing world surpluses of a number of basic commodities, continuing subsidization of exports by several major agri-food producing nations, the continuing globalization of the industry, an increasingly quality- and safety-conscious consumer in search of new taste sensations, and the impact of public concern over the environment on food production and processing methods as well as the nature of the products themselves.

How are the industry and government responding to these challenges? On a broad level, federal and provincial ministers of agriculture launched an all-encompassing Agri-Food Policy Review late in 1988. As part of the review, a number of industry-government task forces began looking at the following specific concerns: competitiveness, environmental sustainability, dairy policy, poultry product availability, farm finance and management, safety nets, the pest management regulatory system, food safety, agricultural research and technology transfer, grain and oilseed safety nets, and transportation.

The report of the Agri-Food Policy Review's Task Force on Competitiveness focused on the following major areas:

- input prices in key areas such as oil-based energy, pesticides, packaging, industrial milk, poultry, wheat and malting barley, and costs

of production due to smaller-than-optimal scale;

- under-investment in training and retraining;
- regulations and standards that impede innovation and are inconsistent among provinces;
- weakness in market development activities;
- the detrimental effect of certain macro-economic policies, chiefly interest and exchange rates; and
- the inhibiting effects of historic agricultural policies on collaborative arrangements among players in the food chain.

The principal recommendation was that the agri-food industry needs to develop market-responsive attitudes and collaborative business relationships as a means of resolving conflicts among its various links in the agri-food chain. Governments were urged to undertake a thorough review of their policies and remove impediments to collaboration. Accelerated tax write-offs were called for to support investment in new plants and equipment, and industry was urged to improve its performance in technology adoption. The need for food research centre networks, which would focus on post-farm-gate issues, was raised. A human resource audit to identify training needs was also recommended. Finally, the report called for a reduced government role that would be more catalytic and nurturing.

The federal government is acting on the recommendation to set up a competitiveness council to oversee the implementation of the recommendations.

Concurrently, Industry, Science and Technology Canada established a Food Policy Task Force to undertake an in-depth analysis of the competitiveness of Canadian food-processing sectors as well as their performance relative to U.S. sectors. Once the analysis is complete, specific policy and program options will be contributed to the Agri-Food Policy Review.

Clearly, change is needed. The challenge for those involved in both agricultural production and food processing is to ensure that this change results in an improvement in the health of the sector as a whole, as well as in its contribution to the Canadian economy and quality of life.

What Is the State of the Industry?

The food and beverage industry is an important engine of economic activity in Canada, since it remains relatively stable when general economic activity weakens. In 1989, the value of shipments remained unchanged from 1988 at \$42.5 billion, a figure that represents 2.2 percent of Canada's gross domestic product. The industry has traditionally been reasonably recession-resistant and, as a result, often attracts capital seeking a safe haven during such periods. Being based on renewable resources, the industry also enjoys a more secure long-term outlook than sectors based on diminishing resources.

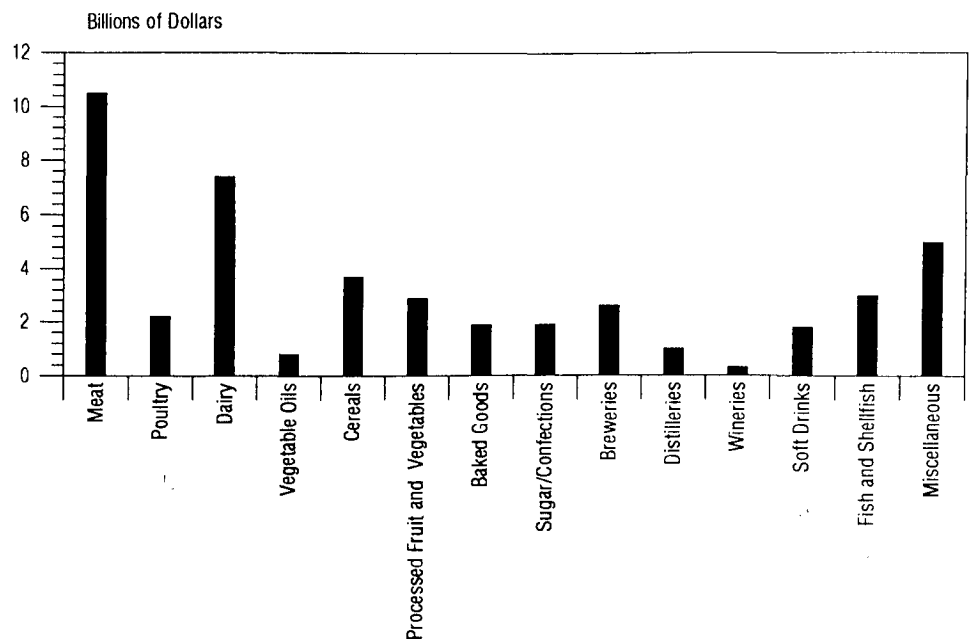
The sector employed 235 000 people in 1989, down from 241 000 in 1988. Efforts to improve production efficiency and rationalization throughout the industry reduced the number of plants in 1989 to

3 750 from 4 000 in 1988. Head offices were not exempt from rationalization. A case in point was the restructuring of Canada Packers Inc.'s head office by Hillside Holdings PLC in August 1990, which saw a reduction of 130 employees. Large segments of the fish-processing industry also saw employment cuts in response to shortages of cod and crab following decreases in allowable catch quotas. Job creation, on the other hand, tended to be spread across sectors as individual firms responded to new opportunities, some of which stemmed from the Canada-U.S. Free Trade Agreement.

The main sub-sectors in the industry are illustrated in Figure 1. The food products industry accounts for 86.7 percent of shipments while the beverage industry accounts for 13.3 percent.

Figure 1

Food and Beverage Sector Components, 1989
Based on Total Industry Shipments (\$42.5 Billion)



Source: Statistics Canada.

Profits in the industry are traditionally low, reflecting a high degree of competition, and vary considerably by sub-sector. The profitability of the dairy and baking sectors has been the most consistent while profitability in the fish industry has been highly cyclical. The fish sector's performance also reflects its reliance on a commonly owned resource whereas other sectors not subject to the vagaries of supply inherent in the fishery are in a better position to manage their inputs and outputs strategically. The red meats sector continues to be fiercely competitive.

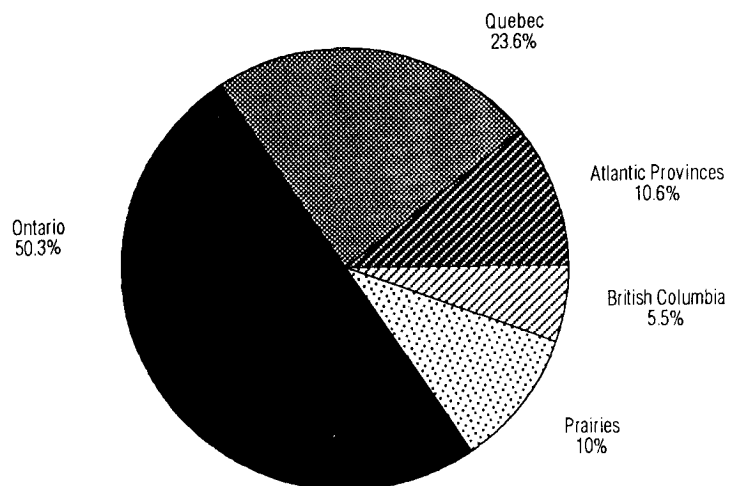
Acquisitions, mergers, and divestitures continued in 1989 and 1990 as companies attempted to expand to internationally competitive levels, sought diversification on the basis of product groups or market regions, or pursued a strategy of consolidation in their areas of strength. The changing corporate landscape is a result of the amalgamation of Canadian firms with domestic and foreign partners,

the sale of Canadian subsidiaries among foreign owners, and the growth in the size of many firms as a result of this process. The following are among notable examples:

- Canada Malting Co. acquired Great Western Malting Co., which has its headquarters in the state of Washington, and British-based Hugh Baird & Sons.
- Molson Cos. Ltd. and Carling O'Keefe Breweries of Canada Ltd. merged to form the sixth-largest brewery in North America.
- Fishery Products International Ltd. acquired the Montreal-based seafood-trading and brokerage firm Clouston Foods Canada Ltd.
- Six Quebec dairy cooperatives — Agropur, Purdel, Agrinove, Nutrinor, the Coopérative agricole de la Côte Sud, and Agrodor — joined forces to develop and market new industrial milk products.

Figure 2

**Regional Distribution of Production, 1989
Food and Beverage Sector**



Source: Statistics Canada.

- Canada Packers Inc. and John Labatt Ltd. agreed to merge their flour-related subsidiaries, Maple Leaf Mills Ltd. and Ogilvie Mills Ltd., into one firm that will control more than 50 percent of Canadian flour production.

While the food and beverage processing industry in Canada is located in all regions, shifts are taking place. For example, some beef production has shifted from Ontario to Alberta. Some movement towards a gradual reduction in inter-provincial barriers to trade in agricultural and food products is emerging. Food processing continues to offer unique opportunities for regional development, often in rural centres, as is reflected by the number of communities that are largely or solely dependent on food and fish processors for their existence.

What About Investment?

Food and beverage processors spent almost \$1.5 billion in 1989 on new construction, machinery and equipment; total investments, including capital and repair expenditures, exceeded \$2.1 billion. This level of investment continues the steady increase seen throughout the 1980s.

New investments continue to be directed towards modernizing existing facilities, increasing production efficiency and improving competitiveness. The new machinery and equipment component of investment expenditures increased in 1989 in absolute terms and as a percentage of

total capital investment expenditures compared with the new construction component. More importantly, investment intentions in July 1990 were down significantly from 1989 levels (see Figure 3) and investment intentions expressed in February 1990. The largest declines in investment intentions in 1990 occurred in fish processing, dairy processing, feed milling, and soft drink and confectionery manufacturing. This weakening reflects a cautious approach towards investment in the light of the current short-run slowdown in Canadian economic activity.

Enhancing Competitiveness In Fish Processing

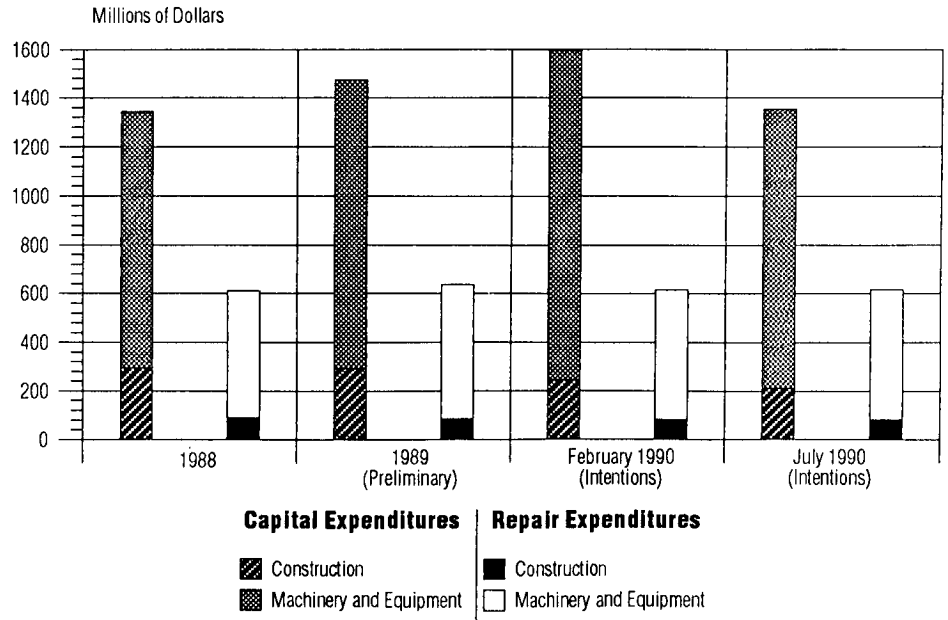
In May 1990, Industry Science and Technology Canada announced that it would conduct a Fishery Products Sector Campaign. Sector campaigns are joint initiatives involving the department and Canadian industry to improve the long-run international competitiveness of sectors with long-run growth potential that are facing challenges government can help them address.

The department made \$6.35 million available to help industry associations examine what strategic directions the industry should follow nationally in four key areas: marketing, technology, aquaculture and human resource development. Cost-sharing support has been made available to assist research and development through the establishment of the Canadian Fishery Products Technology Consortium and the Roe Research and Development Initiative.

As a result of the sector campaign, industry associations, companies, research institutions and government began working together to study what long-term adjustments are feasible to meet competitive pressures. Another phase of the Fishery Products Sector Campaign will see Industry, Science and Technology Canada provide additional cost-sharing support to encourage the industry to be market responsive and cost competitive.

Figure 3

Capital and Repair Expenditures, 1988-90
Food and Beverage Industries



Source: Investment and Capital Stock Division, Statistics Canada.

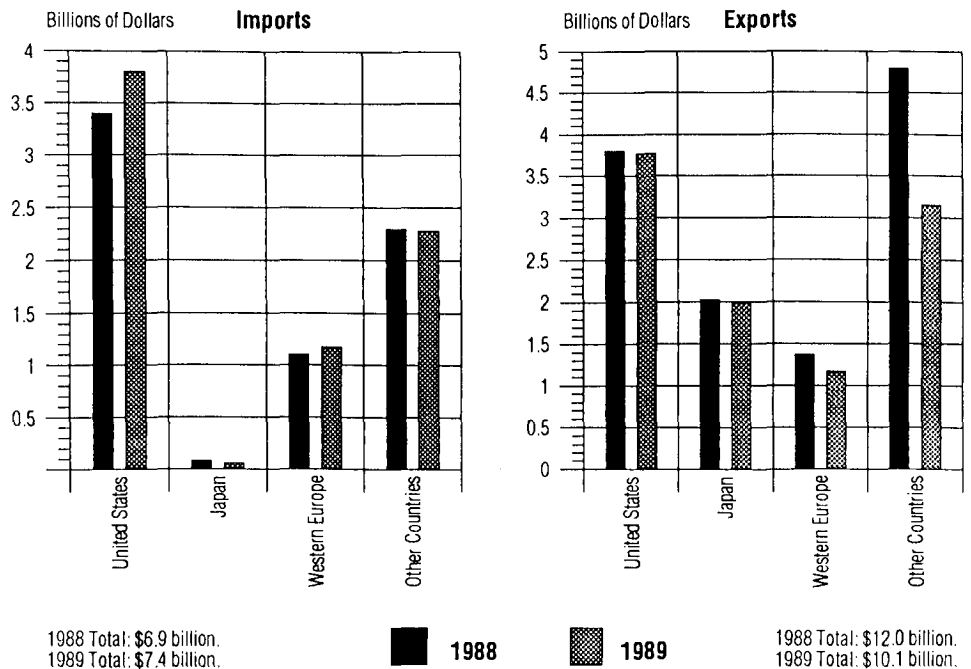
What's New in Trade Performance?

The Canadian food and beverage industry continues to be a net exporter, with 24 percent of shipments being exported. The U.S. remains Canada's leading overall trading partner, and is growing in relative importance. Between 1988 and 1989, the portion of Canadian food and beverage exports destined for the U.S. increased from 32 percent to 37 percent while the portion destined for Western Europe remained static at 11 percent. Total food and beverage exports in 1989 were \$10.1 billion, down from \$12.0 billion in 1988, principally as a result of lower cereal grain prices. Total imports over the same period increased from \$6.9 billion to \$7.4 billion.

Canada's food exports continue to be dominated by semi-processed commodity products like meat and fish as opposed to further-processed food products. This is consistent with most other countries. Companies often establish local processing facilities for further-processed products in target markets once they have successfully introduced them through direct exporting. Major factors encouraging the opening of foreign processing operations include the following: relatively high tariff rates on processed products as opposed to raw materials; transportation costs; non-tariff barriers; and exchange rate fluctuations.

Figure 4

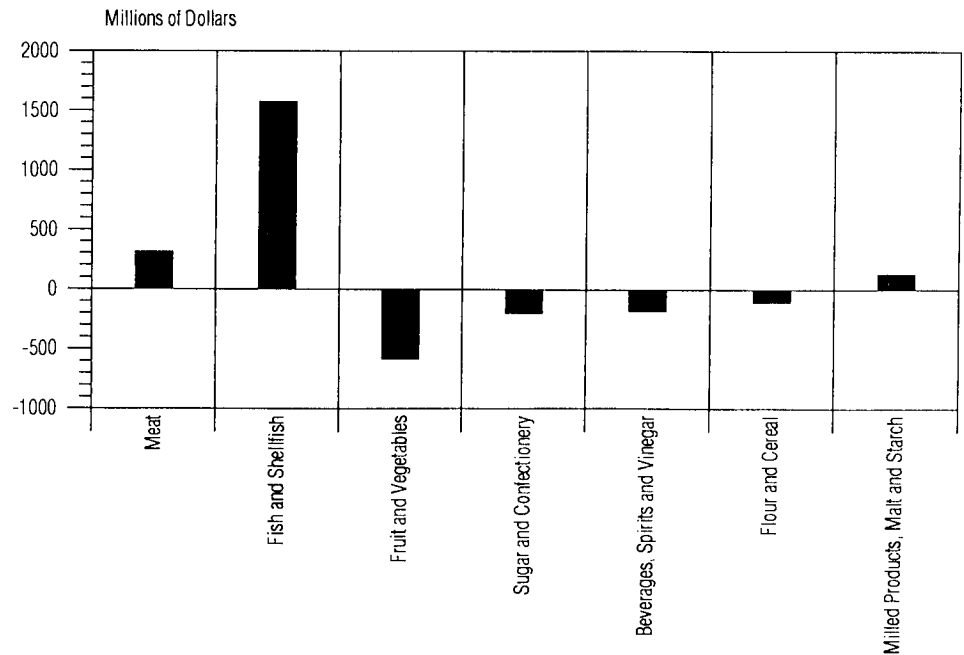
Canadian Food and Beverage Trade, 1988-89
Principal Trading Partners



Source: Statistics Canada.

Figure 5

Food and Beverage Sector Trade Balance, 1989
By Product Group



Source: Statistics Canada.

Although the Canadian food and beverage industry has historically enjoyed a net positive trade balance, each sector varies in its performance. The fishery products and red meat sectors are significant net exporters, reflecting a significant production capability based on Canada's comparative advantage in these sectors. The processed fruit and vegetable sector, on the other hand, is a net importer in spite of its significant volume of exports primarily for two reasons: tropical products are not produced in Canada, and Canadian producers cannot compete on the basis of price for some low-cost commodity items.

With the implementation of the Canada-U.S. Free Trade Agreement, 1989 marked an historical turning point in Canadian trade. While firms have clearly

begun to adjust to a liberalized bilateral trade regime, the impact of the agreement was not as dramatic as had been predicted by some observers. However, there has been a significant move toward plant rationalization by a number of companies.

Although tariffs are being gradually eliminated over ten years under the agreement, in the first year the U.S. and Canada agreed to reduce tariffs on 29 products ranging from carcass beef and honey to certain packaged pet food.

However, the first year of free trade was not without its irritations. Canada and the U.S. faced off on a number of food trade issues. These included the imposition of U.S. countervailing duties on Canadian pork products, salmon and herring landing rules, lobster sizes, and the resolution of U.S. countervailing duties on

Canadian-processed raspberries. While natural differences of opinion arose on both sides of the border over the results of dispute settlement panel decisions and other remedial actions, a positive sign was that these disputes were resolved more quickly than in the past. In addition, the decisions did not exclusively favour either Canada or the U.S.

Planning for the market opportunities and challenges presented by the planned economic integration of the European Community (EC) in 1992 is proceeding at a slower pace than that for the Canada-U.S. Free Trade Agreement. This reflects the Canadian food industry's significantly smaller interest in Europe than the U.S. as well as the complexity of predicting the impact of regulations under the Europe 1992 agreement and of assessing the implications of the market liberalization taking place in eastern Europe and the Soviet Union.

Opinion is divided over whether Europe-1992 changes such as common health and safety standards and tariff treatments will improve market access or create new barriers for nations outside the EC. For example, some fishery sector executives are concerned that the EC intends to link market access with access to resource supply.

Looking further east at the newly democratizing countries, many Canadian firms have had difficulty identifying opportunities for returns on investment given eastern Europe's technology gaps and shortages of capital. As a result,

initiatives have largely fallen to multinationals able to take a long-term perspective and entrepreneurs willing to accept risk. For example, McDonald's Restaurants of Canada Ltd. had to establish a complete production and supply system to support their new operations in the Soviet Union.

Japan continues to be a key market for the Canadian food and beverage industry. Food exports to Japan surpassed \$2.0 billion in 1989. In response to Japan's plans to liberalize beef imports, Canadian beef producers have established the Canada Beef Export Federation to direct an aggressive campaign to increase Canadian beef sales in Japan and other priority export markets. Although they already have an admirable record of export performance, Canadian pork producers, processors and exporters have also joined forces under Canada Pork International to back a concerted effort to maintain and increase pork exports.

Following discussions between Mexico and the U.S. on a potential liberalized trading arrangement, Canada expressed its interest in participating and is now discussing the matter with those two countries. Less than 1.5 percent of Canadian food and beverage exports were destined for Mexico in 1989. However, the potential significance of freer trade with a market of 85 million cannot be underestimated, particularly as current high tariff levels constrain the prospects for exporting a number of products to Mexico.

Sectoral Statistics and Trends

Meat and Poultry Products

The third-largest industrial employer in Canada, after the automotive and the petrochemical industries, the meat and poultry products sector employs 40 000 workers in 610 plants. Sales in 1989 reflected the cyclical nature of the sector's red meat components, declining by almost 4.0 percent due to low supplies of cattle and hogs.

Long-established consumption trends for protein products continued to be the dominant influence on this sector. Consumers are still increasing the proportion of poultry products in their diets. As total per capita consumption of animal proteins has remained essentially constant in recent years, the growth in popularity of poultry products has been at the expense of red meats.

Consumption of pasta, rice and salads has also grown among consumers who were once characterized by a meat-and-

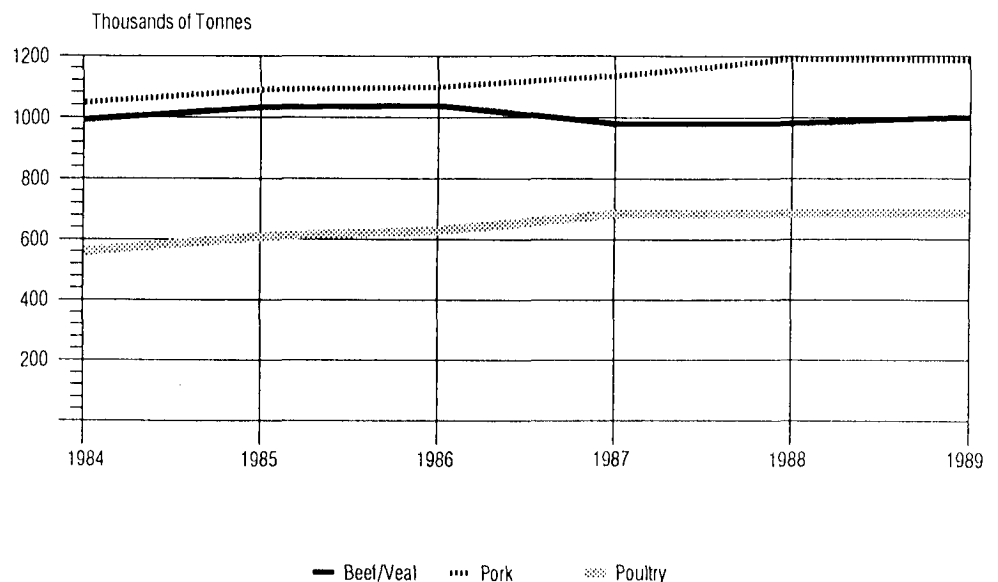
potatoes diet. The traditional preference for such fare has been eroded by the sheer variety of foods now widely available to the Canadian consumer.

Canada's meat industry exports declined marginally to \$1.3 billion in 1989, \$40 million less than the previous year. The trade balance in these products, however, dropped to only \$400 million, compared with 1988's level of \$581 million. Imports of beef increased in response to cyclical shortages while pork exports, particularly to the U.S., were behind those of 1988. The latter development reflects the effects of the U.S. countervailing duty imposed on fresh and frozen pork in August 1989.

In response to these negative developments, the industry made notable efforts to improve its competitive position through rationalization and market diversification. The beef industry witnessed the closure of many older

Figure 6

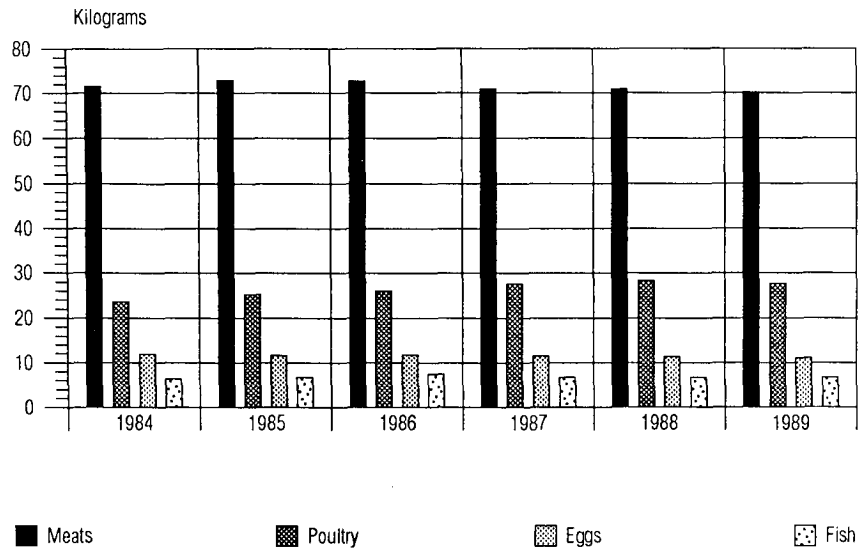
Meat and Poultry Production, 1989



Source: Statistics Canada.

Figure 7

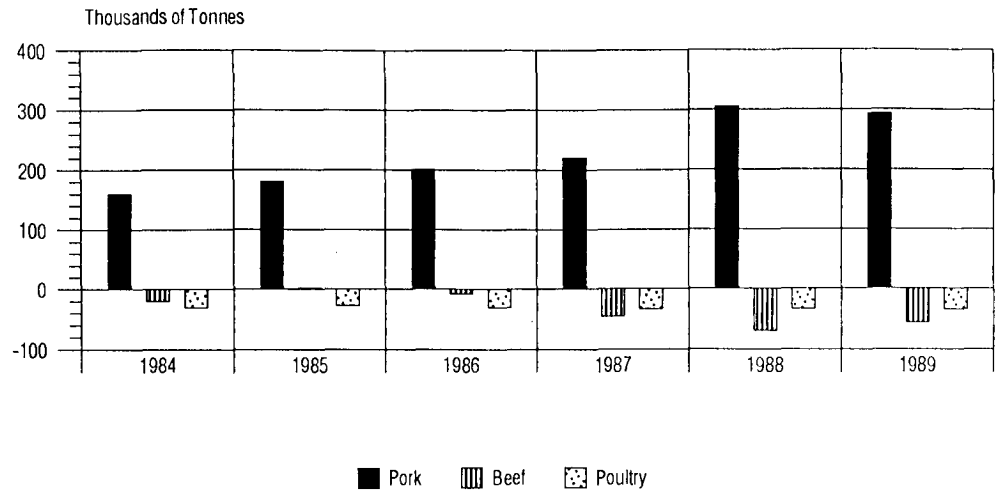
Per Capita Meat, Fish and Poultry Consumption Trends, 1984-89



Source: Statistics Canada.

Figure 8

International Trade Balances in Meat/Animal By-Products, 1984-89



Source: Statistics Canada.

facilities, particularly in Ontario. In a capacity sense, these closures are being offset by the opening of several new or modernized facilities, largely in Western Canada. Marketing initiatives under way include a concerted program by the newly established Canada Beef Export Federation, significant sales of pork to the Soviet Union and the long-awaited opening of the Australian market to Canadian pork.

Canadian trade patterns remain essentially the same, with the U.S. as our

largest trading partner followed by Japan. Europe's role continues to diminish as a result of extremely restrictive regulations such as the ban on beef produced with the help of growth hormones.

Prospects for future improvements will depend on the outcome of the Uruguay Round of GATT negotiations, the recovery of major economies from the recession that was clearly under way by late 1990, and the emergence of genuine demand from markets such as South Korea.

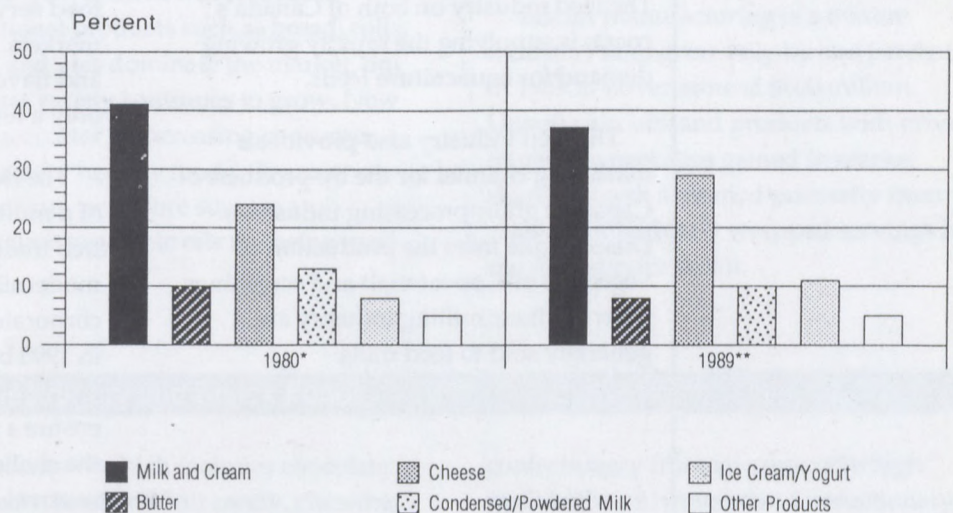
Dairy Products

Dairy product industry sales approached \$8.0 billion in 1989 amidst marketing conditions that were somewhat unsettled following the successful American challenge of Canada's import controls on

ice cream and yogurt. The industry also responded to the demand for low-fat products with the introduction of one-percent milk in Ontario following its earlier success in other provinces.

Figure 9

Shipments of Dairy Products by Product Type, 1980 and 1989



* Total value of \$4.3 billion.
 ** Total value of \$8.2 billion.

Source: Statistics Canada.

Total demand for dairy products was essentially stable with growth restricted to cheese and yogurt. Competition from other beverages, particularly soft drinks and fruit juices, hurt the demand for fluid milk, even in formerly strong market sectors such as the breakfast trade in restaurants. The industry will have to absorb further losses of market share as the higher prices for industrial milk approved in August 1990 work their way through the distribution chain.

The demand for reduced-fat products is increasingly being felt by the industry, which is striving to accommodate the marketplace even though it causes structural problems for processors as alternative uses for surplus butter fat must now be found. The industry is also facing the challenges of potential import competition in the wake of the Uruguay Round of GATT negotiations.

Supporting Industries: Feeds and Industrial Ingredients

A significant portion of the output of the food industry serves as inputs to other food producers/processors. The feed industry supplies about \$3.0 billion in compound feeds to the nation's livestock producers. Modern, intensive production methods in the dairy, hog and poultry industries would not be possible without the range of carefully formulated feeds available from approximately 500 Canadian feed mills. The feed industry on both of Canada's coasts is supplying the rapidly growing demand for aquaculture feeds.

The feed industry also provides a marketing channel for the by-products of Canada's grain-processing industries. Oilseed cake from the production of vegetable oils, spent malt and screenings from the flour milling industry are generally sold to feed mills.

Canada's primary agricultural producers provide the raw materials to the rest of Canada's food-manufacturing industries. Flour, vegetable oils, shortenings, sweeteners and starches are fundamental to value-added food products, which dominate the retail food markets. Specialty products are also needed by these industries to tailor products for the technically demanding food service and convenience food markets. High value ingredients, colouring and flavouring agents are produced by only a few companies in Canada.

The flour industry is in the midst of a multi-year adjustment to the post-free-trade era, a process marked by modernization of the major plants and corporate mergers such as that announced in 1990 by Maple Leaf Mills Ltd. and Ogilvie Mills Ltd. These developments will ensure a more competitive industry to face the challenges posed by the expected removal of import controls for wheat and flour products in 1991.

Processed Fruit, Vegetables and Related Products

The processed fruit and vegetable industry achieved sales of almost \$3.0 billion in 1989 and continued to grow in 1990. Major products are canned, preserved and frozen fruits and vegetables and related goods such as frozen dinners, fruit pies and pizza.

Sales of canned products continue to decline as the popularity of fresh and frozen varieties increases.

A trend toward mixtures of cole crops with traditional vegetables, often seasoned with specialty flavour mixtures, has emerged in the frozen vegetable display as has a trend toward specialized lines such as snow peas, baby carrots or super-sweet corn such as the peaches-and-cream variety.

Home consumption of food is regaining popularity, and dining out appears to be less attractive. This practice points towards growth of tasty, healthy convenience meals, which will provide new market opportunities for fruit, vegetable and related industries.

Major export items continue to be frozen french fries, canned corn and frozen blueberries. Imports are led by tropical fruit juice concentrates, raisins, nuts and tomato paste, much of which is processed into value-added products for the Canadian consumer.

Biscuits, Bread and Baked Goods

While bakery industry sales reached nearly \$1.7 billion in 1989, only marginal year-to-year growth was recorded. Traditional products such as bread, rolls, cakes and pies dominate the market, but product variety continues to grow. New products cater to increasing consumer demand for healthy foods. Organic ingredients, new fibre sources and alternative vegetable oils are being used

to reformulate traditional products and meet consumer demand.

Biscuit manufacturing is a mature industry; sales grew only by one percent in 1989 to hover around \$600 million. Upscale biscuits and products with private or generic packages gained in market share. Growth stemmed primarily from sales of individually wrapped servings in the food service sector.

Confectionery and Snack Foods

This sector — which includes chocolate products, hard and soft candy, chewing gum, popcorn, pretzels and potato chips — showed a first-time decline of 4 percent in sales for 1989. The decline was led by a drop in shipments of sugar and chocolate

confectionery from an unusually high peak in the previous year. Confectionery and snack foods are important components of the food industry, with total sales of approximately \$1.6 billion annually.

Consumer concern with health and nutrition is increasing the demand for new products such as low-calorie confectionery, low-salt potato chips, and fruit-based snacks. Specialty popcorn, flavoured popcorn and kettle-fried potato chips are vying for the business of the upscale consumer. The popularity of quality confectionery products at premium prices has led to the growth of retail gourmet candy shops, which sell primarily imported products. Domestic producers

are now starting to supply this gourmet specialty market themselves.

Packaging will emerge as a key environmental issue for the industry in the 1990s. Most confectionery and snack foods are wrapped in paper or plastic, and the discarded wrapping often ends up as highly visible litter. Manufacturers are looking at the packaging they use and alternatives that may be more favourable to the environment.

Beverages

Thirsty Canadians have an ever-increasing variety of beverages and packaging choices.

Low-fat milk and skim milk continue to make market gains at the expense of whole milk. New products on the shelf are one-percent milk, drinkable yogurt and individually packaged milk shakes.

Cold beverages — soft drinks, bottled waters, juices (pure and combined with sparkling water or other juices) continue to be popular. Tea and coffee are appearing in iced and flavoured forms.

Container choices include economy-sized or single-serving cans, plastic or glass containers, regular or junior-size drinking boxes, or envelopes for powders.

Beverage alcohol consumption is declining due to tax and price increases, the effectiveness of responsible use programs and consumer health concerns. White wine, rum and vodka have been the exceptions, but they have shown only

marginal growth. Sales of coolers have cooled, i.e., remained flat.

Beverage shipments tally up to \$1.91 billion for soft drinks, \$1.2 billion for tea and coffee, \$2.46 billion for beer, and \$930 million for distilled spirits.

The beverage sector is an industry leader in trying to achieve a balance between concern for the environment and selling products meeting consumer preference for convenient, safe, single-serving packages. The beer industry is notable for its strong support for refillable and recyclable containers. The soft drink industry was instrumental in the financing and introduction of curb-side recycling, known as "blue box" programs in some provinces. In some communities, these programs now include cans, glass, plastics and drinking boxes. Drinking boxes are finding their way into a new construction material used to build park benches and other durable wood-like products.

Fishery Products

As in previous years, foreign markets continue to be the principal outlets for fishery products in 1989, accounting for \$2.4 billion in sales, i.e., 80 percent of total production value. The principal markets for Canadian fish exports are the U.S., the EC and Japan. See Figure 10. Principal products are Atlantic groundfish (primarily cod), shellfish (lobster), pelagics (herring) and Pacific species (salmon and roe-herring). Almost half of 1989's \$774 million in imports were from the U.S. Shellfish and fresh and frozen finfish account for 40 percent and 28 percent respectively of primary products imported.

The landings in 1989 were 6 percent lower than the previous year's total of 1 652 400 t. A catch reduction of 7 percent in the Atlantic fishery accounted for much of the shortfall. This in turn was primarily due to a 10-percent reduction in the

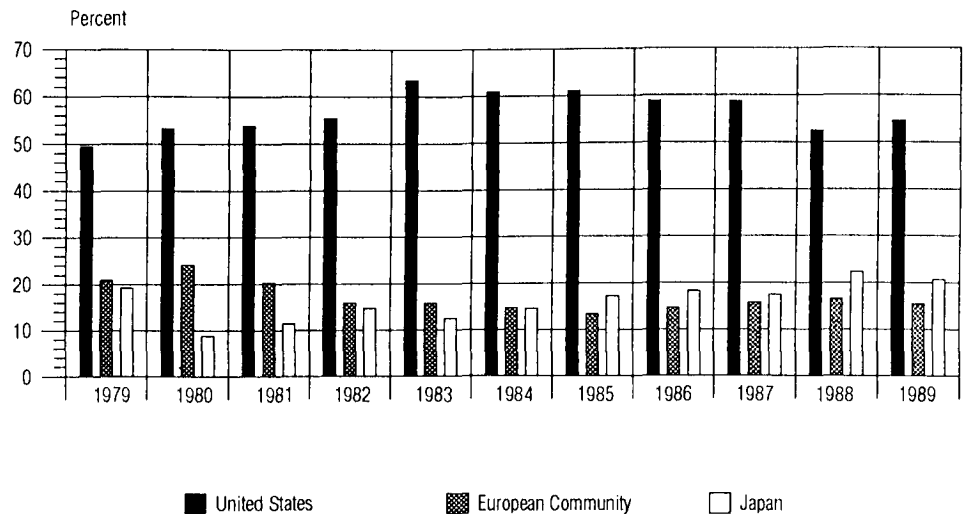
northern cod catch and a 24-percent reduction in the snow crab catch in the Atlantic fishery. The employment level in the 1 300 registered plants processing fish was 27 700.

In the Atlantic region, the federal government has taken new initiatives to rebuild stocks of several species over the next few years. Federal and provincial governments have put in place various economic programs to address the problems associated with the resource reductions. These include the federal government's Atlantic Fisheries Adjustment Program and its Quebec Fisheries Development Program.

On the west coast, the new landing regulations brought about by the salmon/herring case under the Canada-U.S. Free Trade Agreement will require adjustments

Figure 10

Principal Markets for Canadian Fishery Exports, 1979-89
Percentage of Total Export Value



Source: Fisheries and Oceans.

by the industry to accommodate the possible movement of an increased volume of unprocessed fish to the U.S. Spurred by the success of salmon farming, the industry should be moving away from traditional products such as canned salmon towards value-added products such as salmon steaks, roasts and kiev.

Aquaculture is becoming increasingly important to the sector. The annual value of aquaculture products increased from \$7 million in 1984 to \$109 million in 1988 and \$145 million in 1989. Projected value for farmed products for the year 2000 ranges from \$500 million to \$1 billion and is expected to amount to 25 percent of the landed value of all species. Salmon (Atlantic and coho), oysters, mussels and freshwater trout will be the principal products in the near future.

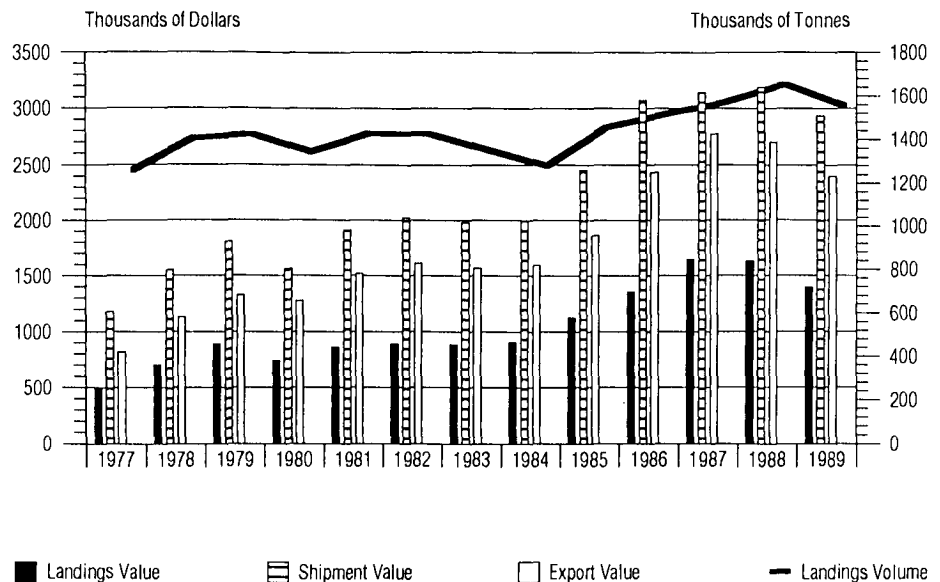
Resource availability, technology, high foreign currency exchange rates and high interest rates are influencing the restructuring of the sector in its bid to remain competitive.

Canadian companies are pursuing product diversification to improve their competitiveness through more secondary processing (e.g. fish burgers, smoked mackerel), prepared foods (e.g. lobster Newburg, shrimp oriental) and, in some cases, expansion into agri-foods (e.g. cheese, chicken and vegetables).

Surimi from cod frames, capelin and hake, marinated herring and fish silage from roe-herring carcasses, and fish flavours from shellfish wastes are some of the products the sector is investigating to reduce waste products and generate additional profit.

Figure 11

Landings Volume and Value, Shipment and Export Values, 1977-89



Source: Fisheries and Oceans.

The Greening of the Bottom Line — Environmental Issues and Strategic Planning

Today's managers in the Canadian food and beverage industry are giving a lot of time and attention to environmental issues. Falling under this broad heading are such subjects as packaging, consumer health, regulations on allowable waste discharges and the introduction of "green" products and processes, to name a few. Domestic and international changes in environmental policies are new factors affecting competitiveness, and industry is gearing up to set priorities and meet consumer demand.

While precise implications for the industry remain unclear, there is little doubt that environmental issues pose significant challenges to business — in research, processing costs, product lines, marketing and sales. The industry is already tackling some of these issues. For example, it has participated in the

development and implementation of the National Packaging Protocol, and has been a major player in the establishment of curb-side recycling programs. It has also participated in the development of regulatory programs such as Ontario's Municipal Industrial Strategy for Abatement. But much remains to be done. The following items are high on the priority list for food and beverage processors:

- packaging;
- solid waste from company operations;
- environmental protection regulations;
- consumer demands and attitudes;
- consumer health concerns;
- retailer response to environmental issues; and
- "environmentally friendly" products.

Packaging

Waste management is an urgent and pressing national problem. As we evolve into a throw-away society, we are producing waste at a faster rate than we are finding solutions for its disposal. Landfills across the country are running out of space, and the creation of new disposal sites is being opposed by local residents.

The prevalent use of disposable packaging by the food and beverage industry has been the target of a great deal of public concern and criticism. Although the industry is the single biggest user of packaging, accounting for some 50 to 60 percent of the value of all packaging used, its packaging waste makes up only approximately 6-8 percent of municipal

waste streams. Nevertheless, the issue of packaging — both shipping materials and consumer packaging — tops the list of the industry's environmental concerns.

The National Packaging Protocol, adopted in March 1990 by the Canadian Council of Ministers of the Environment, has as its ultimate objective a 50 percent reduction in disposal of packaging waste by the year 2000. The protocol was developed with the participation and cooperation of Canadian industry, and food and beverage processors are publicly committed to the goals and guiding principles it sets out.

Processors are seeking ways to apply a three-R (reduce, re-use and recycle)

strategy to their operations and their products in order to meet the goals established by the protocol.

Many firms are conducting environmental audits of their manufacturing processes and environmental profiles of their packaging materials to identify means of reducing the impact of packaging waste on the environment. This is a particularly challenging task, as many uncertainties remain surrounding the relative environmental impacts of different packaging materials. For example, whether or not re-usable glass bottles are more environmentally friendly than disposable cartons or recyclable cans continues to be a matter of debate. Although glass bottles can be re-used many times, chemical solvents and high energy levels required in the cleaning process might be more detrimental, ecologically speaking, than compacted paper or recycled plastic.

Major international studies are under way on detailed life-cycle analyses of various packaging materials. In addition, as part of the implementation of the protocol, guidelines are being developed for the conduct of life-cycle analyses. When this information is available, it will enable Canadian processors to assess the environmental impact of the different packaging options and to make informed packaging decisions. In the meantime, processors have identified and implemented numerous three-R initiatives, including the following:

- widespread use of recycled cardboard shipping cartons, which are again recycled;
- development of plastic bottles that use 50 percent recycled material, which is sandwiched between an outer and inner layer of virgin plastic to protect the product;

- the brewing industry's use of glass bottles, which are re-used up to 25 times before being sold for cullet to be used in the manufacture of new containers;
- the move by some producers to re-usable trays and baskets for bulk shipments of eggs;
- industry support and funding of curb-side recycling programs being initiated across Canada;
- recycling of Tetra Pak and other aseptic drinking cartons into Superwood;
- elimination of layers of packaging in many products;
- "thinwalling" of aluminum cans, resulting in reduced packaging and less energy to transport.

While the amount of packaging of final products will be reduced where possible, re-use and recycling are generally expected to provide the main contributions to protocol targets. The extent to which the packaging of food and beverage products can be further reduced may be limited. In addition to meeting legislated health and safety requirements, the package must protect and preserve the product; provide the quantity, product description, ingredients and directions for use; and meet consumer demands for convenience and utility.

Food and beverage processors and packaging suppliers are also undertaking research to develop new packaging materials and new recycling processes. It is generally agreed that the goals of the protocol are going to be extremely difficult to achieve in the food and beverage processing industry without some technological breakthrough in packaging or widespread recycling programs.

While the protocol was developed by a variety of interest groups and is a remarkable achievement, it is nevertheless a complex and ambitious undertaking, and many industry concerns will not be resolved in the short term. This is due to the need for base-line data on packaging used, the need for life-cycle analyses of packaging materials and the nature of

enforcement measures. The industry wants to make sure, as well, that processors are given credit for what they have already done to address the packaging issue. An equally important concern for processors is that a level playing field be maintained, putting them on an equal footing interprovincially and with importers.

Solid Waste From Company Operations

Food and beverage processors are also applying the three-R strategy to waste generated in company operations.

The results of a recent survey indicate that many Canadian food and beverage firms have instituted some form of environmental committee. These committees are generally charged with reviewing the environmental impact of company operations and recommending changes. The alarming reality of overflowing dump sites and condemned incinerating practices has some companies scrambling to seek ways to reduce their contribution to the waste stream. Many are being forced to recycle most of their boxes,

paper and plastic. Recycling of corrugated cardboard boxes and computer paper, typically among the first initiatives taken, often saves money. Companies are discovering that many changes they initiate are not only positive for the environment but also cost-effective.

Some food processors are developing particularly innovative and extensive solid-waste reduction programs. One meat-processing company, for example, is studying the possibility of instituting a composting program which, when added to recycling and re-use efforts, would result in a 75 percent reduction of waste sent to landfills.

Environmental Protection Regulations

By and large, food and beverage processing is not a major source of pollution. Where there are end-of-pipe problems, the technology is generally available to alleviate them. However, environmental protection regulations governing air quality and effluent emissions affect the day-to-day operations of processors. Governments across the country at all levels are taking a harder look at their regulatory agendas, and

processors could be called upon to alter the way they do business in order to achieve environmental goals.

The impact of current and impending environmental regulations varies by sub-sector in the food and beverage industry depending on such variables as water used, animal products involved, odors caused and wastes emitted. To illustrate, as heavy users of water, meat packers in Ontario will be affected more

significantly than other sub-sectors by Ontario's Municipal Industrial Strategy for Abatement.

Compliance with provincial regulations, the *Canadian Environmental Protection Act* and the National Packaging Protocol will mean additional costs for processors. These costs are related to gathering and providing information, changing processes, applying treatment technologies, developing new products and redesigning packages. Dollar estimates, which are now difficult to compile, will be easier to calculate when base-line data and life-cycle analyses are available.

Food processors have expressed an overriding concern with inconsistencies in environmental regulations among provinces and between Canada and the U.S. Lack of uniformity will significantly increase the cost of compliance and reduce national competitiveness.

Industry and environmentalists see incentives as a means to encourage processors and shareholders to make the investments required for equipment that would help them exceed minimum standards. An example often cited is the possibility of giving rebates on the sewage portion of water bills in return for extra reductions in harmful effluent.

Consumer Demands and Attitudes

Consumer attitudes towards environmental issues are a major influence on food and beverage processors. Recent surveys conducted by Environics Research Group Limited and Decima Research indicate that between 15 and 25 percent of Canadians are willing to make sacrifices to improve the environment. At issue, though, is whether consumer concerns with the environment will translate into changed buying habits.

While consumers are demanding products and packages that are less harmful to the environment, they also place great value on product convenience, as well as disposability and tamper-proof packaging. The demands often conflict. While food and beverage processors

recognize the need to minimize the impact of their products on the environment, they must also sell products, protect market share, and maintain profitability. This is of particular concern to smaller companies, which face proportionately greater risks in altering their products.

A strong demand for products that contribute to responsible environmental solutions must be developed at the consumer level. This can only be developed through greater awareness, and this in turn can be achieved through education.

Consumer Health Concerns

Along with concerns for the environment have come growing interest in food safety, nutritional labelling, the use of pesticides in agriculture, and the use of preservatives and chemicals in food.

Observers of the environmental scene point out that Canadians are also growing increasingly worried about the environmental impacts of common agricultural practices. The use of pesticides, fertilizers

and other chemicals has been receiving increasing attention in the media, frequently under the rubric of sustainable agriculture.

Primary industry issues, such as the media attention given to conditions under which animals intended for consumption are raised, also affect the food and beverage processing industry.

Retailer Responses to Environmental Issues

Retailer responses to environmental issues are also affecting food and beverage processors. Retailers across the country are developing their own environmental policies and standards. As a result of these policies, they are beginning to request and promote products with recycled or recyclable packaging, "green" products and organic products.

Processors will have to adjust to these demands as well as deal with questions raised in the minds of consumers concerning national brands versus alternative products.

"Environmentally Friendly" Products

The marketing of "environmentally friendly" products has been controversial. How does a food or beverage processor decide which products and which packages are "green?" And, for that matter, is green just one colour, or are there shades of green? There are no definitions or standards, and industry representatives acknowledge that it is difficult, and frustrating, to talk sensibly about the subject.

This confusion, coupled with public criticism of ambiguous environmental claims, has resulted in some consumer

cynicism and highlights the importance of generating standards to help processors develop products to precise specifications. Without standards, processors are reluctant to employ a marketing technique that will leave them open to public criticism and that may damage long-term company credibility.

One step in this direction is Environment Canada's Environmental Choice program, which was created to help consumers find products that ease the burden on the environment. The symbol of certification of this program is the EcoLogo

(three doves intertwined to form a maple leaf). Under this program, a product may be certified if it is made in a way that improves energy efficiency, reduces hazardous by-products or uses recycled materials, or because the product itself can be re-used.

As well, Consumer and Corporate Affairs Canada is working to establish environmental labelling and advertising guidelines, which will assist producers, retailers and consumers alike by eliminating ambiguities and ensuring that accurate information is provided upon which purchasing decisions can be based.

Conclusion

Environmental issues are everyone's business, and they'll be with us for quite some time. Complex and wide ranging, they have become part of the business lives of Canadian industry, affecting organizational structure, human resource needs, competitiveness, strategic positioning, production processes, product ingredients and packaging. What's becoming increasingly clear is that

addressing the issues is going to take time, money, and the coordinated efforts of government, industry and the consumer. In the increasingly global environment within which the food and beverage processing industry must operate, attention to environmental issues will make not just good business sense, but essential business sense.

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