MARITIME Series

MONOGRAPHS

Maurice Beaudin

Towards Greater Value: Enhancing Eastern Canada's Seafood Industry

INSTITUT CANADIEN DE RECHERCHE SUR LE DÉVELOPPEMENT RÉGIONAL
THE CANADIAN INSTITUTE FOR RESEARCH ON REGIONAL DEVELOPMENT

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About the Monograph

The fishery is one of the most frequently studied sectors in Canada, particularly on the Atlantic coast, where the industry seems to be mired in perpetual crisis. There are many reasons for this situation, such as pronounced resource cycles, changes in the international demand for seafood products, fragmented and geographically scattered production capacities, joint ownership of the resource, shared jurisdictions, the inherent traditionalism of coastal regions, and the dependence of heavy industry on transfer payments. This has led to numerous government studies, including the memorable Kirby (1982) and Cashin (1993) Royal Commissions, in an attempt to find ways to counter the destabilizing effects of the various crises — which invites the question, is another study really necessary?

We should state at the outset that this report is a departure from earlier studies. Our aim, of course, is to present a clear picture of the overall dynamics of this industry, which is so vital to Atlantic Canada's maritime regions, and to do so in an industry-wide context, something few studies have been willing to do. Two of the sectors we emphasize are seafood processing and marketing. Indeed, the entire problem of value-added processing of seafood products is central to our concerns. We also examine the challenges and issues relating to the fishery in eastern Canada as well as its prospects, taking into account the industry-wide changes currently taking place around the world. We also offer some tentative suggestions for strengthening the strategic links that are essential to the development of this industry within a context of increasing globalization.

About the Author

Maurice Beaudin is a regional economist and an assistant director of the Canadian Institute for Research on Regional Development at the Université de Moncton. As a researcher at the institute, he is responsible for coordinating research programs and activities, particularly for the Maritime Series of publications. Mr. Beaudin was awarded his Ph.D. in human geography (marine sciences) by the Université de Nantes in 1997. The title of his thesis was "L'adaptation économique des régions maritimes de pêche: le cas des communautés du golfe du Saint-Laurent" (Economic adjustment of maritime fisheries regions: Communities in the Gulf of St. Lawrence).

Mr. Beaudin has directed and participated in numerous projects conducted for a variety of provincial and national agencies. His primary areas of interest are the economic adjustment of resource-based communities and regional and industry studies. He is actively involved in the series of studies entitled Maritime Series: The State of the Regions, which are published annually and report on development in each of the eleven economic regions in the Maritime provinces. He has published articles in national and international journals and has written a number of works, including *Les défis de l'industrie des pêches au Nouveau-Brunswick* (1992), which earned him the Prix France-Acadie, and *La lutte pour le développement: le cas du Nord-Est*, published by the Université du Québec. His recent works include "L'industrie des pêches dans la Péninsule acadienne: son profil, sa dynamique et sa capacité à soutenir l'économie régionale," as well as "The Viability of the Lobster Processing Industry in New Brunswick" and "Regional Labour Market Dynamics in Atlantic Canada."

Acknowledgements

A report of this kind cannot be prepared without substantial support from both inside and outside the industry concerned. In order to avoid omitting any names, however, I will not list all the contributors and resource people who were directly or indirectly involved in producing this report. Let me just say that I am very grateful to them for their excellent work.

Nevertheless, there are a few individuals I must single out for their invaluable assistance. First of all, I wish to thank Fabrice Rigaux, my colleague at CIRRD, for his unstinting efforts in a number of areas, in particular for surveying processors and distribution channels and for his coding work in helping to establish a typology of seafood products. Although Mr. Rigaux was unable to continue his work because of other professional commitments, his contribution is evident throughout this report.

I would also like to thank Wade Aucoin of the Atlantic Canada Opportunities Agency (ACOA) for his revisions and astute advice, as well as economists Michel Audet and Hilaire Chiasson at DFO (Moncton) for their keen interest in this subject and their generous support. I am also indebted to Gilberte Nowlan, again at DFO (Moncton), who unfailingly responded to my many requests for statistical information, and to Bruno Lévesque and Pierre Gauthier at DFO (Quebec), who provided me with relevant data and documents on the seafood industry in Quebec and with an assessment of the aquaculture sector in eastern Canada. Sincere thanks are also due to Mike Howley, an economist at ACOA (St. John's), and to Pat MacDonald at Newfoundland's Department of Fisheries and Aquaculture for their assistance during visits to processing plants in the area. I am similarly grateful for the comments and advice of resource people such as Gerry Donavan (Newfoundland Seafood Market Council), Peter Dysart (New Brunswick Fish Packers' Association), Kevin Elworthy (Enterprise Cape Breton), and a number of anonymous readers. In addition to the above, there are many others whose

help I must acknowledge, in particular the industry players who provided me with information on many aspects of their trade.

Finally, I would be remiss if I did not thank Colette Allain and Ginette Benoit (CIRRD) for their painstaking editing and logistical support.

Having thanked all those concerned for their information and support, I must nevertheless accept full responsibility for the views expressed in this document and for its content and analysis.

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Preface

Few studies have really taken stock of the entire dynamics of Canada's East Coast fisheries since the widely acclaimed report *Charting a New Course: Towards the Fishery of the Future* was tabled by the Task Force on Incomes and Adjustment in the Atlantic Fishery in November 1993. That commission of inquiry, it will be recalled, was established immediately after the moratorium on the northern cod fishery was announced, a moratorium that signalled the beginning of a crisis unprecedented in the history of the East Coast fisheries. The collapse of cod stocks described by the commission meant a loss of approximately 80 percent of the groundfish industry's primary resource and led to massive layoffs and numerous plant closures that directly affected an estimated forty thousand fishers and processing plant workers, one-third of the fishing industry's entire East Coast labour force.

Today, we are entering a new decade and a new millennium, and we have to ask ourselves what has happened since then? have groundfish stocks recovered? has the surplus capacity that has long plagued the core segments of the industry been reduced? what has happened to the thousands of fishers and plant workers affected by the moratorium? how well has the processing sector survived the crisis? what are companies doing to reposition themselves and take advantage of the greater global demand for seafood products? what are the implications of new international quality regulations, and how have small- and medium-sized businesses adjusted to tighter export controls? what role have governments played during this transitional period, which is characterized by changes that are radically altering the dynamics of the agri-food industry in general and the seafood segment in particular?

These are just some of the many questions that the author, Maurice Beaudin, raises and attempts to answer in this report. In it, he presents the results of comprehensive research based on numerous analyses and factual observations that he examined objectively. To this end, Mr. Beaudin has drawn on various sectoral reports and

studies published both by official agencies and by private consulting firms. In preparing this study, he received the unconditional support of federal and provincial agencies, having obtained statistical series of all kinds as well as qualitative information on the fisheries. As well, he has been given the invaluable support of a host of players and leaders in the important seafood industry.

I would like to join Mr. Beaudin in thanking all the industry players and stakeholders, who, without exception, gave so generously of their time. Our thanks are also due to the Atlantic Canada Opportunity Agency for its financial support of this important research, which is part of the institute's Maritime Series. In submitting the report, we are proud to point out that it is not only highly detailed, but also concise and objective and presents a profile of the industry, its regional and sectoral characteristics, and the changes occurring in the industry as a whole. All those directly or indirectly affected by current developments in the seafood industry are bound to find this report both instructive and extremely useful.

Donald J. Savoie
Executive Director

Analytical Framework

The seafood industry occupies a special place in the world of "primary" processing industries. In fact, seafood products are perceived less and less as raw materials because of their wide variety, numerous existing and potential markets, and major differences in the value added at all levels of the industry. Some products that until recently were thought to have little value are now being developed commercially for use in nontraditional industries, such as the fine chemicals, pharmaceutical, and biomedical sectors (seaweed, fish waste, and new species).

Seafood products stand out within the vast agri-food industry, covering an impressive number of products, markets, and commercial and industrial players. It is a complex sector, and often its statistical importance internationally is still not fully understood. Gathering economic and statistical information is thus a difficult proposition, especially because of the varying degrees of industrial standardization and classification of seafood products in each country or continent. That is why it is still difficult to accurately quantify this sector of the economy.

Nonetheless, for the last ten years or so, the member states of the OECD (Organization for Economic Co-operation and Development) have been attempting to include standardization within measures introduced by the WTO (World Trade Organization). The strengthening of industrial controls (quality control and marketing tools) as well as the development of international industrial standardization and its expansion to new producing countries have led to improvements in the quality of statistical surveys.

These considerations provide a framework for and circumscribe this study, which draws on international, national, and provincial data and official databases containing numerical assessments of both exports and imports of products and services. To take into account the multiplicity of products, the variety of stakeholders, and the diverse strategies worked out by the players involved in the geographic area studied (eastern Canada), we use a progressive, six-step approach.

In chapter I, we look at the socio-economic profile of the seafood industry in eastern Canada, examining in detail the scope of the fisheries sector, from downstream to upstream operations, and its relative importance to regional and provincial economies. We analyse the provincial economic impact of the fisheries as a whole, including the following four sectors: primary production, processing, tertiary or related activities, and the quaternary sector (public sector programs that provide the industry with coaching and support).

In chapter II, we profile the core segments of the seafood industry internationally and describe the relative position of Canada and the region studied. The aquaculture sector is dealt with separately because of its rapid expansion and, above all, its strong involvement in the international seafood trade.

Chapter III describes the major characteristics of international trade in seafood products, focusing on import-export flows in the major trading blocs (United States, Europe, and Asia) and the main products traded. We also underscore the position of eastern Canadian producers within those major trade flows and pay special attention to the region's leading products.

In chapter IV, we look at the characteristics and prospects of the main end markets for Atlantic Canada's processors, providing a summary of major trading blocs and an analysis of the principal seafood products that are performing exceptionally well on international markets. We specifically examine the US market and its various regional components, as well as the European and Asian trading blocs, particularly Japan. To conclude the assessment of end markets, we turn to Canada, describing the eastern and central Canadian markets, which despite their proximity have so far been ignored by most producers in Atlantic Canada, in spite of their attractive potential, particularly for small businesses interested in export opportunities.

Chapter V focuses on industrial organization, i.e., the entrepreneurial, industrial, technological, and commercial management approach used by businesses in the seafood industry. We assess the economic health of the processing industry, by sector and by province, using comparative productivity and profitability indicators. A number of other factors are also addressed, including current and expected changes in demand, industrial standardization, product innovation, re-engineering of supply-production-sales processes, the advent of partnerships and strategic alliances, the need for qualified

administration-management and marketing personnel, and closer industry ties to institutional research and development centres.

Finally, chapter VI is the core of this study; its ultimate aim is to establish a typology or, at the very least, a useful and practical classification of all secondary production in the seafood industry. We systematically classify all seafood products shipped from eastern Canada, using recognized industrial codes and taking into account the level of processing. A system of this kind should make it easier in future to interpret data on innovation and value-added processing, two subjects still characterized by large grey areas, particularly with regard to seafood products. We also provide background profiles of several businesses that have become industry leaders because of their know-how, management style, organizational structure, or simply the energy they devote to innovation. Those businesses are capable of influencing the entire processing sector by paving the way for other players who up to now have relied too heavily on homogeneous mass production.

Methodology

There are three fundamental stages, or levels of processing, used to add value to seafood products. These levels, referred to as primary, secondary, and tertiary, are recognized internationally and are accepted by most industry monitoring and consulting firms (they are described below). Fish and seafood production generally includes four types of products: *fresh*; *frozen and chilled*; *dried*, *salted*, *smoked*, and *pickled*; and *canned*. These four major product families do not necessarily follow a value-added hierarchy. In other words, some products in each of the major groups are classified as primary and secondary or secondary and tertiary. Consequently, we have harmonized that classification with the seafood products coding system used by Industry Canada (which incorporates the international Harmonized System (HS) codes in its own database).[1] We can thus establish a production typology based on the level of value-added processing.

In analysing the profiles of industrial production and the seafood products trade, we use, in the interests of simplicity, the International Standard of Industrial Classification (ISIC) developed by the FAO (United Nations Food and Agriculture Organization), which is harmonized with the World Customs Organization's classification of goods in customs tariffs. The categories concerned cover products derived from fish, crustaceans, molluscs, and other animals and plants (including aquatic residues) caught or harvested for commercial and industrial purposes by all types of industry participants. They also include products derived from raw materials supplied by specific breeding and harvesting operations.

1. The Harmonized Commodity Description and Coding System (HS) used in this study was actually developed by the Customs Co-operation Council. Canada adopted the system to replace the lists in the Customs Tariffs, which were considered too complex and not very convenient, as well as the Canadian International Trade Classification (CITC) and the Export Commodity Classification (ECC), now the Trade of Canada Commodity Classification. It should be noted that the basic principle of the HS is the classification of products by nature instead of by manufacturing stage, use, and volume. The coding is logically organized by economic activity or by the components that make up a product. In view of that and the purpose of this study, the author has created aggregates of the relevant products based on the HS product database, which gives information according to the classifications associated with the stages of processing.

We were thus able to draw up a list of eastern Canadian seafood products based on three categories relevant to the entire region. Products were divided among those three major aggregates, which correspond to the three classes of industrial processing determined by the level of product processing. The three levels of processing were defined according to current industry practice and are recognized by national and international standardization bodies. Thus, primary processing refers to the initial operation (basic packaging of a fresh product). This segment comprises products marketed at the first stage, i.e., fresh, frozen, and, in some cases, separated, dried, and salted. At least sixty-nine codes for import-export products were deemed relevant to eastern Canada in this category. The list of aggregates is shown in Appendix A.

The second defined level applies to a class of products that have undergone further processing — i.e., the raw material itself has undergone significant processing for the purposes of preservation and/or presentation. However, most of the time these are raw products that have not been mixed with or incorporated into other food substances. They include products that are commonly salted (varying degrees of salting), dried, minced (fine or coarse), cut (strips, steaks, and slices), smoked (basic or flavoured smoking), semiprocessed (crushed, thick juices, meals, and pellets), and semipreserved (pickled). This group comprises approximately seventeen specialties that commercially are highly relevant to eastern Canada because they are most often used in tertiary processing.

Tertiary processing comprises products that undergo further industrial processing by means of various technical and technological processes that are more elaborate than those used in the first two phases. Some of these products must be marketed in compliance with strict industrial requirements and so are included in high value-added product families (prepared, pre-cooked dishes; ready-to-serve foods, such as those served at seafood delicatessens; and prepared chilled products). As we will see, these processes can be extremely different in every way from other types of processing (fine chemicals and pharmaceuticals). Thus, with nearly twenty-two products relevant to Quebec and the Atlantic provinces, the industries involved in tertiary processing employ all the preservation, preparation, refining, and extraction methods in use today.

The value of this type of classification is that it uses an industrial approach to creating a greater awareness of the levels and development of seafood product imports and exports. This is something that

is often overlooked, and yet it is an important source of information about the actual participation of the seafood products industry in the industrial development of eastern Canada as a whole.

We therefore present developments in the three levels of processing, comparing Canada, eastern Canada, and the provinces with respect to both imports and exports. We also describe developments in the primary processing of fresh and frozen products as well as trends by product category in secondary and tertiary processing. As well, we examine in detail the trade flows for the products in the three categories, whether fresh, chilled, salted, smoked, in-brine, canned, or in any frozen form.

Information Sources

All the research is based on several types of information obtained from various agencies specializing in this area, including data from the Department of Foreign Affairs and International Trade contained in the RADAR system, which was incorporated in 1996–97 in the STRATEGIS database. Much of the information came from those databases and supplements information about small and large companies specializing in the processing of seafood products and by-products. The databases routinely use terms taken from the SIC (Standard Industry Classification) and, for the purposes of this study, from the SIC 0310 group (fishing industries), which covers fresh-landed products and services incidental to fishing, and the SIC 1020 group (fish products industry), which covers all products and services related to the processing of seafood products. We also searched specialized US databases (National Marine Fisheries Service, Seafood Market Analyst), and European databases (DATAFISH), as well as some specialized FAO databases, including GLOBEFISH, which essentially provides trade data and analyses. The analysis of plant production is based on annual production reports provided by either the Department of Fisheries and Oceans (DFO) or provincial government departments and on reports from some large companies. DFO is the only source of data on both the volumes and values of regional and provincial landings and aquaculture production. Our analyses of the productivity and profitability of the processing industry are based on data taken from Statistics Canada's *Annual Survey of Manufactures*. For the socio-economic profiles, including industry impact analyses, we used information from the last census, which provides regional data on the number of fishers and workers in the fishing industry.

However detailed those databases may be, though, they are still inadequate for gaining an understanding of the industrial relationships at play (trade networks and development agreements). We therefore used a number of other sources, i.e., information gathered or distributed by the following:

- *Consultants, processing businesses, and private companies in eastern Canada and elsewhere:* Accord International Canada; American Seafood Company; Aqua Jem Farms; L'Association coopérative des pêcheurs de l'Île; Atlanta Provision Co.; Atlantic Herring Fishermen's Marketing Co-operative; Atlantic Queen Seafoods; Barry Group; Bay Shore Group; Canadian International Traders; Cape Bald Packers; Cape Breeze Seafoods; Chicago Fish House; Clearwater Fine Foods; Comeau's Sea Foods; Connors Brothers; Continental Seafood; Cooke Aquaculture; La coopérative des pêcheurs de Baie-Sainte-Marie; Crown Seafood; E. J. Green and Company; Enterprise PEI; Ernst and Young Canada; Fishery Products International; Fortune Seas; Les fruits de mer Landry; High Liner Foods; Ichiboshi L.P.C.; Innovative Fishery Products; Island Marine Products; K and N Seafoods; KPMG Canada; Maisonnette Seafoods; McGraw Seafood; Melrose International Trading; Mersey Point Fish Products; Neos Seafoods; New Found Foods; Ocean Fresh Seafood; Ocean Pier; Paturel Seafood; Pêcheries Cap-Lumière; Les pêcheries GEM; P. Janes and Sons; Produits Belle Baie; Les produits de mer de Le Goulet; Purdel-Coopérative agroalimentaire; Quin-Sea Fisheries; Raymond O'Neill and Son Fisheries; Rio Import and Export; Seabright Smokehouses; The Seafood Merchants; Sea Star Seafoods; Sogelco International; Union Seafood International; Westmorland Fisheries; Woodhouse Marketing International; X-Sea-LNT International
- *Specialized institutes and professional associations:* Association québécoise de commercialisation du poisson et des fruits de mer; Association québécoise de l'industrie de la pêche; Canada Market Research; Canadian Association of Fish Exporters; Canadian Exporters' Association; Canadian Fisheries Council; Export Development Corporation; Fisheries Association of Newfoundland and Labrador; Independent Seafood Processors Association of Nova Scotia; National Food Brokers Association; National Food Processors Association; Natural Resources Institute; New Brunswick Fish Packers' Association; Newfoundland and Labrador Shellfish Growers Association; Newfoundland Seafood Market Council; Prince Edward Island Seafood Processors Association
- *Canadian and foreign public sector:* Agriculture and Agri-Food Canada; Atlantic Canada Opportunities Agency; Canadian Consulate General (Atlanta, Boston, Chicago); Department of Commerce, Washington; Department of Foreign Affairs and International Trade; FAO, Rome; Fisheries and Oceans Canada;

Industry Canada (marine products division); Marine Institute of Memorial University of Newfoundland; Marine Products Research and Development Centre and the Food Research Centre of the Université de Moncton; National Marine Fisheries Service, Washington; National Research Council of Canada; OECD, Paris

- *Trade databases and print and electronic references:* Canada Newswire; Business, BioCommerce Data; EBSCOhost; Food Science and Technology Abstracts; GLOBEFISH Commodity Update; Kompass Canada; SeaFood Business online

Introduction

Considered by many as belonging in the first rank of fishing nations, Canada seems at first glance to be a major supplier of various seafood products. Such a view is not without foundation, as for several years during the 1980s, Canada was the world's top exporter of seafood products. Its advantageous geography and industrial and commercial structure (among the richest fisheries resources in the world, dockside industrial processing facilities, and almost exclusive control of commercially viable species) contributed greatly to Canada's position among the world's top fishing powers. The fishing industry is particularly strong on Canada's East Coast, including the Gulf of St. Lawrence, where more than a thousand communities along the region's jagged coastlines depend on the fishing industry for their livelihood.

In 1977, when the Canadian government officially established the 200-mile exclusive economic zone (EEZ), the fisheries seemed to enter a period of unprecedented cyclical instability, a situation that led to two Royal Commissions in the space of ten years. In the euphoria following the creation of the EEZ, the five eastern provinces quickly began modernizing and increasing their production capacity to derive maximum benefit from a fishery that was now regarded as exclusively Canadian. But the severe worldwide recession in the early 1980s put an end to the provinces' unrealistic expectations, especially those of large processing companies, several of which were forced into bankruptcy. The situation was so serious that a commission of inquiry was appointed to explain the slump plaguing the industry and to recommend how to avoid such crises in the future. As we know, the commission's report, *Navigating Troubled Waters*, recommended restructuring the Atlantic fisheries: the cost to Canadian taxpayers was estimated at several hundred million dollars.[2]

2. *Navigating Troubled Waters: A New Policy for the Atlantic Fisheries*, report of the Task Force on the Atlantic Fisheries, under the direction of Michael J. L. Kirby (Ottawa, December 1982).

The recession was followed by a boom lasting from 1983 until the early 1990s, when the East Coast fishing industry was buoyed by a new optimism created by the global economic recovery and a growing demand for fish products. Also, new and lucrative markets were opening up for products such as snow crab, herring roe, shrimp, and lobster, all relatively abundant on the Atlantic coast. The economic climate was so positive that the number of fishers in the region increased from 40,000 to 46,000 between 1983 and 1990, and the number of processing plants grew even more rapidly, from 670 to 1,063.[3] Although harvesting and processing capacity was growing steadily, the resource as a whole was static, with several major stocks being fished to capacity.

By the early 1990s, these problems converged to plunge the industry into a new crisis. Beginning in 1991, Atlantic Canada's fisheries plummeted in the wake of moratoriums on the fishing of several species of groundfish, particularly cod. After reaching a record 1,341,000 tonnes in 1998, landings in eastern Canada fell to 609,000 tonnes in 1995, a drop of over 730,000 tonnes or 55 percent in seven years. Catches have risen slightly since then, but in the meantime they have been overtaken by shellfish landings. The result has been profound changes in the processing industry, which to that point was based essentially on mass production and relied primarily on vast supplies of groundfish. Of the numerous species marketed in eastern Canada, groundfish are generally the easiest to process.

The socio-economic impact of the moratorium on the northern cod fishery in the summer of 1992, together with severe moratoriums and restrictions on other major groundfish stocks, led to the worst crisis in the history of the eastern Canadian fisheries. Within a few months, 14,000 fishers and 26,000 plant workers in over 400 communities were out of work. The federal government responded with another Royal Commission, this one strongly recommending "charting a new course." In addition to observations that were mostly familiar to the numerous industry players and stakeholders, the Cashin Commission urged immediate massive aid to maintain the income levels of the many communities affected. The commission also recommended that various levels of government restructure programs to downsize an industry that could not be supported by the available resources, a recommendation which led to the introduction of

3. According to *Charting a New Course: Towards the Fishery of the Future,* report of the Task Force on Incomes and Adjustment in the Atlantic Fishery, table 8, p. 168.

bold licence-buyback programs, the professionalization of fishers and plant workers, and a redefinition of processing businesses. Training and retraining programs for laid-off workers would, according to the commission, remove a third of the workforce from the industry, mainly in Newfoundland. The cost was $1.9 billion over five years (1993–98), with an additional $730 million at the end of that five-year period to ensure a complete transition, because groundfish stocks were recovering more slowly than anticipated.[4]

During that time, the profiles of world fish and shellfish catches changed enormously, and aquaculture took a leading role in the international trade of seafood products. In 1998 aquaculture production (aquatic plants excluded) amounted to nearly 30 million tonnes or 28 percent of world fisheries production, having grown 10 percent per year, on average, since 1986. Furthermore, aquaculture supplies 30 percent of the seafood products intended for human consumption. Another area of major change is the expansion of import-export channels for seafood products, a change clearly reflected in today's figures: world trade in seafood products now accounts for 38 percent of total fisheries production compared to 30 percent in 1985. The approximately 23 million tonnes of products exported in 1997 is three times the volume exported in 1976. From US$35 billion in 1990, the value of world exports of seafood products rose to over US$50 billion in 1995 and has continued to rise slightly since then. Although over 180 countries import and export seafood products, 51 percent of world seafood exports come from only eleven countries, and no less than 75 percent come from the top twenty-two exporters.[5]

In the international list of maritime catches, Canada slipped from thirteenth place in 1990 to twenty-first in 1997, but it held onto thirteenth place in production volume (plant outputs) because of its imports of raw or semiprocessed products, which put Canada sixth in value of exports. Canadian producers can still count on large stocks of crustaceans (shrimp, lobster, and snow crab) and molluscs (scallops and mussels) and on high salmon production (capture salmon from the Pacific coast and farmed salmon from New Brunswick). They are also turning more and more to imports for their raw materials. In eastern Canada, imports of seafood products rose from 58,000 tonnes

4. For more information on these programs and an assessment of their success, see Maurice Beaudin, "TAGS: Une stratégie de transitions ou d'assistance?" [TAGS: A strategy for transition or assistance?], *Policy Options* (January–February 1999): 45–48.

5. Information from various FAO databases.

($174 million) in 1990 to 225,000 tonnes ($703 million) in 1996.[6] However, with US$2.3 billion in exports in 1996, Canada was eclipsed by China ($4.7 billion), Norway ($3.4 billion), the United States ($2.9 billion), Denmark ($2.7 billion), and Thailand ($2.4 billion). A dozen other countries have exports of at least $1 billion per year.

In all, the value of seafood imports worldwide is today over US$52 billion. Although more than 90 percent of the products traded have undergone some type of processing, the demand for fresh or natural products is on the rise: one-third of the products traded are fresh, an increase of 70 percent in ten years. Most world exports of fishery and aquaculture products (i.e., 80 percent of total export value) are shipped to industrialized countries.[7] The major trading bloc for seafood products in 1997 was the European Union, with imports totalling US$18 billion in 1997, followed by Japan (US$16 billion) and the United States (US$8 billion). It should be noted that a large percentage of European Union trade was between member countries. The relative importance of international trade with the United States is limited by its huge domestic market, which consumed $49 billion in seafood products in 1998. Domestic production in the US is also high (landings of over 4 million tonnes and processed production of over $7 billion).

The fact that Canada's fisheries are in a period of transition, a consequence of major upheavals within its important groundfish industry, is certainly not the only thing undermining its relative position internationally. There has also been increased competition from other fisheries, particularly in Asia, where aquacultural production is expanding. Asian countries, excluding Japan, increased their seafood product exports from US$10 billion to US$16 billion between 1990 and 1996; their imports also rose, from US$3.9 billion to US$7.8 billion during the same period. The increase in trade is the result of both growing world demand for seafood products and increased liberalization of international trade (abolition or reduction of tariff barriers within major trading blocs, such as NAFTA, the European Union, the South Asian Association for Regional Cooperation, and the Latin American Economic System).

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6. Fisheries and Oceans Canada, *Domestic Imports of Selected Commodities, by Province*; based on data compiled by Statistics Canada.

7. FAO Fisheries Division, *Global Overview of Production and Production Trends*, Circular no. 920 (Rome, 1997).

Finally, there is general agreement that a mass production-based harvesting strategy is threatening the vitality of fish and invertebrate stocks on the Atlantic coast, and some are urging that all government programs supporting the industry be rethought. They are suggesting instead that priority should be given to an approach based on responsible management and more effective processing and that it emphasize not only volume but also the differentiated production of higher value-added products that make use of all species, particularly those that are nontraditional and underutilized.

In spite of such laudable goals, however, Canada's fishing industry, particularly in the eastern provinces, is languishing in a period of uncertainty. Some segments of the industry, it is true, have been able to reposition themselves by moving into diversified, higher value-added production, supported by a three-fold strategy focusing on management (re-engineering internal business management), supply (developing import-export channels), and distribution-marketing (sustained wide-scale marketing with strong international promotion). But they are the exception rather than the rule. For most companies, except perhaps those with exclusive markets, such as for snow crab and shrimp, production is mainly a function of seasonal resource cycles and relies on volume (mass production) at the expense of differentiated production. Moreover, most production undergoes primary processing only. Generally speaking, therefore, value-added processing of seafood products consists of relatively simple industrial processes that have not been adequately modernized and, above all, are often limited to the initial stages of processing. Why is this still the case?

For the answer, we must first look to the constraint influence of the US market. The main buyers of Atlantic Canada's seafood products are American importers supplying the demand for fresh product from restaurants, fish markets, and retail food chains and providing their processing sector with a variety of products that have undergone primary processing only (frozen fish blocks and fillets, and shellfish meat blocks). The dependence on American brokers and the lack of real outlets in Canada have also led to Canadian manufacturers acting as suppliers.

Also, the second-largest importer of Canadian products, Japan, clearly prefers seafood in its natural state (fresh, chilled, or frozen, not shelled). Furthermore, the third-largest importer of products from Atlantic Canada, the European Community, maintains particularly

high tariff barriers (approximately 20 percent) on imports of processed seafood products.

The continuing social role the fisheries are called upon to play is also problematic. During the postwar years, the industry acquired greater socio-economic stature in most coastal regions, growing into an extremely complex sector that now encompasses social as well as purely economic issues. The result was excess production capacity and increased dependence of industry workers on income-support programs, all of which led to structural problems that weakened the industry. In addition to excess technical capacity ("too many boats chasing too few fish") the industry is burdened with superfluous socio-economic capacity (more workers than the resource can support), a problem frequently cited in studies on this issue.

Why then have attempts to reduce production capacity been unsuccessful? The reason is that the industry was designed with mass production in mind, and very little attention was paid to stock conservation, a situation that was reinforced by the creation of the EEZ. Furthermore, because of social and political factors, the industry was always eager to increase production capacity when the resource was abundant, but when stocks declined, it failed to make the necessary adjustments. Exacerbating the problem was the fact that most of the time the federal and provincial governments encouraged and supported industry expansion. Why? — because the fishery is clearly distinct from other areas of activity. Not only are fish a jointly owned resource, but fishing is an economic activity that has always been woven into the social fabric of communities. It is also the only industry where the federal government has such extensive jurisdiction over almost all aspects of primary production, leading many industry players to constantly angle for their "fair share" of the resource. Political pressure is thus enormous when quotas go down, and even greater when plants close. The recent formation of co-management partnerships by fishers' groups may help relieve those pressures somewhat, but resource management is still a challenge because of the large number of stakeholders and interest groups involved.[8]

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8. Within the federal government, 23 agencies and departments have programs that relate to the oceans. In eastern Canada, five provinces share the coastal and Gulf of St. Lawrence fisheries resources. Fisheries management is also handled by four major administrative regions (Maritimes or Scotia-Fundy, Gulf, Laurentian region, and Newfoundland). No fewer than 43,800 fishers and deckhands operating on 23,000 vessels, hold a total of nearly 100,000 licences (30,300 are for basic species). As well, approximately 800 processing plants employ 38,500 fish workers. The economies of 1,200 communities are based largely on the fishing industry.

Beyond those constraints, there are many other factors to consider before one can truly understand the dynamics of the industry, in particular the lack of organization and coordination by regional stakeholders; the fragmentation of economic units and sectoral associations; the lack of research and development (R & D); the reliance on exclusive product markets; a lack of business networking, particularly in distribution-marketing and primary supply; price wars over local resources; and the lack of cooperation among various groups of fishers and entrepreneurs-processors.

In the final analysis, however, it is the processors themselves who must accept responsibility for creating higher value-added products from their raw material. When processors are serious about investing in the medium and long term, the result is products that use end-stage processing in surprising ways. Processors like these, and there are not many, have and use financial and business savvy (access to international purchasing pools, in-depth marketing studies, advertising budgets, access to a network of manufacturing subcontractors that are operational at all times, cost controls, quality control with the development of industrial standardization, etc.) that is miles ahead of other stakeholders.

Aside from a few obvious cases, the fact remains that producers, like governments, have been slow to respond to the signs of growing trade globalization, particularly the emergence of new producing-exporting countries and the advent of wide-scale distribution, which today accounts for 60 percent of retail and semi-wholesale marketing of seafood products. Over the last ten years, the number of departments selling fish and seafood (all types combined) at major distribution outlets has doubled, and they dictate demand not only in Canada but also in other countries that export seafood products.

Reflected in these issues are the numerous parameters that characterize the economic world of the seafood industry and its social and industrial practices. And a common concern that underlies them all is the growing imbalance between the interests of processing plants (all stages of processing combined) and the fishery sector itself. Beyond the major problem of value-added processing, which fundamentally affects producers and their future, the two worlds risk further alienation — i.e., regional fisheries and their management, on the one hand, and the industrialization and marketing of seafood products, on the other.

The growing reliance on imports of a variety of seafood products (live, fresh, and frozen) and even on low value-added products (from Southeast Asia and Northern Europe) is a sign of the times, a fact rarely mentioned in studies on the seafood products industry in eastern Canada. That fact must now be taken into account. In eastern Canada, fish and seafood imports amount to nearly 200,000 tonnes (approximately $200 million). Of course, most of those imports go to the processing industry. We should also point out that there have been numerous attempts at partnerships in the industry, particularly between processing companies and aquaculture producers, as well as strategic alliances and takeovers.

Those developments are not, a priori, in any way harmful. On the contrary, they indicate a gradual adjustment by many producers who want to upgrade their equipment while maintaining and developing their businesses. But they also mean that Canadian producers may have lost the exclusive right to make decisions about Canada's fisheries, particularly in Atlantic Canada. They need to be aware of this fact to avoid remaining a captive of industrial models from the past, which are based on a close association between the regional fishery and its local processing facilities.

If that is a part of the past, the future lies in recognizing that processing and value-added processing of seafood products in Canada must adapt to the new economy and to the standardization of its structure. In order to survive and thrive, seafood processing must become a commercial and industrial activity like any other. In other words, if it becomes less dependent on local primary resources, the processing and value-added processing industry can refocus on creating wealth and adding value to seafood products of all types — i.e., both food and nonfood products, for which there is a growing demand.

Eastern Canada has an opportunity to take up this challenge, perhaps by using certain specific strategies (promoting R & D, improved knowledge of the industrial patents available, new agri-food systems, biotechnology strategies, and the development of domestic and foreign markets). Regional fisheries will only succeed by developing new manufacturing and quality-control processes and by creating more differentiated production with a focus on high value-added products. The creation of regional leadership within a number of industry segments (prepared foods and semi-fresh and ready-to-serve products, etc.) must undoubtedly be part of a long-term strategy for value-added processing of fishery resources.

As we know, the vast majority of seafood products processed in eastern Canada undergo primary processing, while only a portion undergo further primary processing that could increase their value added, whether for foreign or domestic markets. This is something that must be acknowledged in eastern Canada — that up to now, the region has not been able to break out of its role as a primary supplier.

Apart from certain continental constraints (a domestic market that is neither well-developed nor lucrative and a US market that is fairly speculative and volatile but has recently shown some encouraging signs), the entire industry in eastern Canada must now adapt to new requirements that will determine its very survival. Those requirements are technical (the gradual, wide-scale adoption of just-in-time and industrial computer technologies, a resolve not to depend solely on local supply, the modernization of canning and freezing/deep-freezing equipment, and the need to standardize at all levels as part of the "quality" process), technological (the growing importance of biotechnology in food industries and the increased development of aquaculture production), and commercial (a greater demand for high value-added prepared products and ready-to-cook, ready-to-reheat, and ready-to-serve seafood products as well as major changes in packaging and containers). The new requirements will also affect the entire distribution system (the reorganization of purchasing pools in eastern Canada and the development of group brands) and all components of industrial and marketing strategies that require adjustments.

The dilemma now facing producers is which overall strategy to adopt. Should they be conservative and continue to act as suppliers of basic products with a limited potential for marketing and technical development (given that competition from Third World countries for low value-added products has been stronger than ever in recent years), or should they assume a more aggressive posture and make the most of new developments in distribution channels in Canada, the United States, Japan, and the European Union, while at the same time betting on the success of standardization among the largest players in eastern Canada, recent though it is.

The new economy confirms this change in course. For a long time, fish blocks could be produced in huge quantities and still turn a profit: per-kilo profit margins were low, but they were largely offset by volume. Then fish stocks began to decline, and Canadian processors grew cautious. Designed and structured at a time of steady growth,

the processing industry is now facing stagnating production, constant and steadily growing disadvantages compared to other manufacturers, the restructuring of consumer markets, and the use of advanced technology in manufacturing and control processes. The impact is being felt across the board. Today, all producers in eastern Canada openly acknowledge the R & D constraints associated with value-added products, but they also concede that the profit ratio for value-added products is considerably higher than for no-value-added or low-value-added products. Consequently, they are finding it worthwhile to make the necessary investment in an overall medium- and long-term strategy to increase value-added production. And indeed there are value-added success stories in Quebec, Newfoundland, Nova Scotia, New Brunswick, and Prince Edward Island.