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Socio-Economic Profiles of the Fishing and Processing Industry

It is estimated that in over a thousand communities on Canada's East Coast, fishing and fish processing are an important part of the economic base, although far fewer now depend exclusively on fishing than in the past; those communities are located mainly in Newfoundland, the northern gulf, and some remote rural areas of the Maritimes (the southwestern coast of Nova Scotia and islands off the southwestern and eastern coasts of New Brunswick). Overall, though, the region's profile is much more varied. Many fishing communities have developed other activities alongside fishing, i.e., peat harvesting and processing, agriculture, mining, and forestry. And tourism, which has been a natural addition to the economy of coastal regions, offers some interesting potential in the long term. There are, however, a number of maritime areas that have never been able to create a comprehensive fishing industry, and they continue to benefit from only a small percentage of the value of their fisheries resource.[9]

Generally speaking, communities close to the sea, and not just those that rely on the fishery, maintain strong ties to their region and demonstrate fierce independence in the face of adversity. And even though fishing activities and processing operations are highly modernized, these occupations have always been seen as a way of life. It is only recently, for example, that there has been any talk of professionalizing the trade.[10]

The fishing industry on Canada's East Coast is distinct in many ways from other resource industries not just because of geography or for its variety of industrial activities but also for the number of stakeholders and interest groups it comprises. It should come as no

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9. See M. Beaudin, "L'adaptation économique des régions maritimes de pêche: Le cas des communautés du golfe du Saint-Laurent" [Economic adjustment of maritime fishery regions: communities in the Gulf of St. Lawrence] (Doctoral thesis, Université de Nantes, 1997), chapter 7.

10. Provincial legislation on professionalizing the fishing trade has been or is about to be enacted in Newfoundland, Quebec, and New Brunswick; processing workers will also be professionalized.

surprise, therefore, that the fishery, more than any other industry, is highly fragmented. The region has approximately eight hundred businesses of all sizes and types (half or more of which are exporters) that are spread along a narrow strip of coastline ten thousand kilometres long. One of the features of the industry is that it needs a large labour force, although it has been significantly reduced in the past decade by the groundfish crisis and the increased use of technology. Another is that the entire industry is subject to major cycles in primary supply, with bottlenecks often occurring in a number of industry segments during peak season, i.e., mid-April to mid-June. However, the expansion of acquaculture and the increasing use of imports by processors are helping to offset seasonal resource cycles.

Perhaps the main forces to have shaped the fishery are geography and climate and the nature of the resource on which it depends. But there are other influences that have helped create its unique character, such as its traditional nature, government intervention in resource management, and the fragmentation of its sectoral bases.

Above all, however, it is the seasonal nature of work in the fishery that governs life in maritime fishing regions. And that is something that is no longer driven simply by weather. It has increasingly become a function of management measures aimed at protecting various stocks — there are at least thirty main commercial species — and of efforts to accommodate as much as possible the industry's many competing interest groups, starting with the fishers. There is also a traditional aspect to economic activities among rural populations, and it is generally well-entrenched, even more so perhaps in maritime fishing areas not only because of their relatively easy access to a shared and varied resource but mainly because of the existence of income support programs, particularly employment insurance. Employment insurance benefits collected by fisheries workers in the coastal areas of Newfoundland and the Gulf of St. Lawrence represent approximately two-thirds of the income derived from industry activities; that compares to less than half in the rest of the Atlantic provinces.[11]

11. See Beaudin, "L'adaptation économique des régions maritimes de pêche," chapter 7.

A Seasonal Industry in a Seasonal Economy

The highly seasonal nature of the fisheries in several subregions of eastern Canada is a major feature not only of the industry itself but of the region's entire socio-economic structure. Not that the seasonal problem is unique to maritime areas — in fact, to varying degrees, agriculture, some mining sectors (e.g., peat harvesting), transportation, forestry, construction, and many service industries (tourism, personnel services, and education) also make extensive use of seasonal workers. Nevertheless, one fact remains: the problem of seasonal employment in the fisheries, as in the coastal areas that depend on the industry, is specific in many ways to the entire social and economic structure of those areas and even seems to shape it.

To get an idea of the full extent of seasonal employment in the Maritimes, we need only look at the numbers: 17 percent of Canada's labour force is seasonally employed. And among employment insurance recipients, 40 percent are considered seasonal workers. There is thus an obvious link between the frequency of benefits and seasonal work.[12] In fact, two-thirds (65.8 percent) of frequent employment insurance recipients work seasonally. One might expect that regions with more resource-dependent economies would be more at risk of unemployment, and this is the case in the Atlantic provinces and eastern Quebec, where unemployment rates are consistently well above the national average. With more resource-based economies, those regions have a higher percentage of frequent recipients of employment insurance among their unemployed populations. In Newfoundland and Prince Edward Island 68 percent of recipients are considered frequent. The figures are 59 percent in New Brunswick and 45 percent in Quebec, still high compared to the national average of 38 percent. These figures are important to the extent that they reveal the dependency of fisheries and processing workers or employment insurance and that they shed some light on a competitive edge enjoyed by the processing industry, which has a captive workforce and at the same time is indirectly subsidized.[13]

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12. According to the Department of Human Resources Development publication *From Unemployment Insurance to Employment Insurance* (Ottawa: Supply and Services Canada, 1994), 42–43.
13. This observation applies more to companies that operated on a highly seasonal basis, both in the fishing and fish-processing industries and elsewhere.

The Fishery: An Industry or a Network?

In eastern Canada more than anywhere else, fishing and processing are major components of the agri-food industry. As we know, the food industry is one of the foundations of the regional economy, particularly in the Atlantic provinces, where it employs 8.5 percent of the total workforce and one-third of manufacturing workers. The food industry also accounts for 19 percent of the total value of regional exports, which gives some indication of its importance. The seafood sector is the leader in the food industry, accounting for 58 percent of agri-food workers and over 77 percent of the value of food exports.[14] With only 8 percent of the Canadian population, the Atlantic region accounts for 20 percent of national agri-food exports and approximately 70 percent of seafood exports.[15]

Although impressive, those figures only partly reflect the scope of the seafood industry in eastern Canada. We know that the fisheries extend well beyond the area between the dock and the plant, tying into several other economic sectors relating to goods and equipment and services. Although suppliers of those goods and services are most often located outside coastal communities, they are never far away and are generally active in the region. The result is that the more activity there is in the fishing and processing industry, the more the effects are felt by downstream activities (marketing, specialized services, industry consulting, and support services), and vice versa. For example, in Atlantic Canada's agri-food industry, approximately 50 percent of jobs are concentrated in the primary sector, 30 percent are in processing, and a substantial percentage (20 percent) are in various tertiary sector activities, including management, handling, transportation, and so on.[16]

Strictly speaking, should the fisheries really be considered an industry? Using a flexible definition of the word, the answer is yes, although in truth the fisheries are really part of a larger industry, the agri-food industry. Both are characterized by significant export potential, resulting in high employment and income multipliers, and local, regional, and foreign suppliers provide them with components, raw

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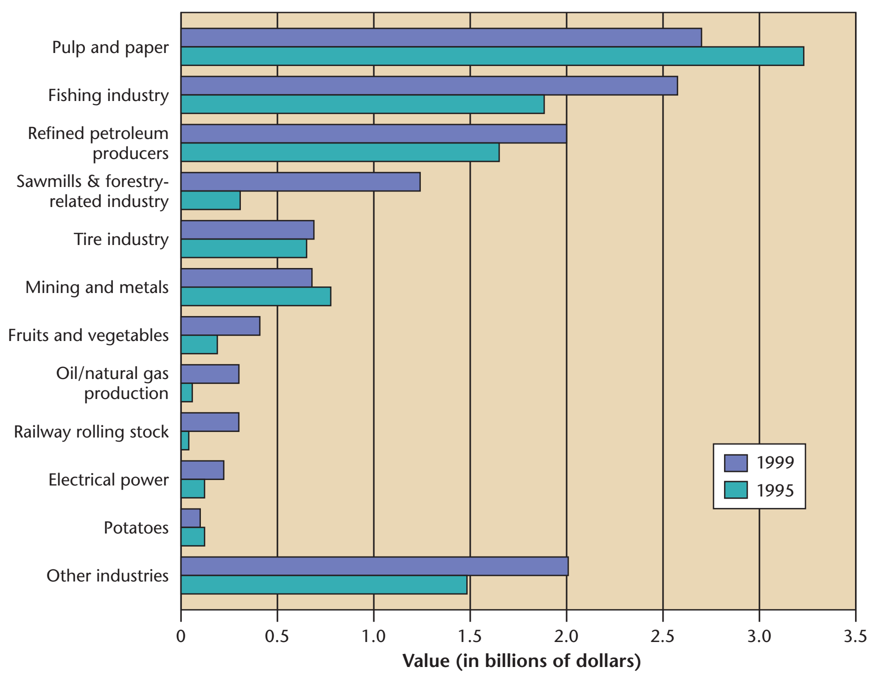
14. This segment of the seafood industry was even larger before the crisis that shook the groundfish sector. Data from Statistics Canada, *Annual Survey of Manufactures* (1997), cat. 31-203.
15. Based on exports data from STRATEGIS, Industry Canada.
16. DRI Canada, *Atlantic Canada: Facing the Challenge of Change*, study produced by the Atlantic Provinces Economic Council and Canmac Economics for ACOA (Moncton, September 1999), 3–17.

materials, and services. On the one hand, industry businesses are connected vertically by links between buyers and suppliers of products and services (i.e., production and marketing inputs), and on the other hand, they are connected horizontally through transfers of technology, skills and expertise, financing, and trade agreements. Finally, services to the industry — the seafood-shipping and distribution network, support services, and public management and monitoring mechanisms — play a strategic role that is essential to the industry's development, while contributing to employment and income multipliers in the region.

Seafood exports accounted for 19 percent of the value of all exports from the Atlantic region in 1999, ranking second behind pulp and paper exports. In fact, the fisheries contribute more to exports than the following six industries combined: tires, mining and metals, fruits and vegetables, oil and natural gas production, electrical power, and potatoes (see figure 1).

Figure 1

Value of Exports by Industry, Atlantic Canada, 1995 and 1999



Source: STRATEGIS, Industry Canada; compiled by the author.

To simplify, the seafood industry can be separated into four main sectors. The first, the *primary sector,* is harvesting, in this case fishing. The *secondary sector* covers the preparation, packaging, and processing of fisheries resources. These activities are generally grouped together under the processing industry. The *tertiary sector* is essentially made up of distribution-marketing services as well as the supply of goods and services to the industry, and includes the services of seafood wholesalers and retailers as well as related services (transportation, warehousing, insurance, financial services, protection, inspection, consultation, vessel maintenance and repair, and shipbuilding). The *quaternary sector* covers public services in support of the industry. Public and parapublic guidance provides logistical support to all sectors of the industry: resource and habitat management, fishing regulations, technical support for R & D, sectoral organizations, workforce training, and so on.[17]

Government plays an essential role in the quaternary sector, particularly federal agencies, which in recent years have provided by far the most support to the industry in a long time. The fisheries industry, according to subsection 91 (12) of the Constitution Act, is under the jurisdiction of both the federal and provincial governments. The federal government has jurisdiction over the resource (fish), from its natural habitat to the landing dock, and is also responsible for the management and regulation of fishing licences and leases, boating safety, surveillance in fishing areas, setting quotas, establishing fishing areas and seasons, monitoring fishing gear and vessels, handling (landing, loading, and transporting catches), and fish inspection and marketing standards.[18] The provincial government has authority over land activities, such as fish processing (issuing processing licences, setting licence conditions, training fishers and industry workers, union organization, etc.). It goes without saying that both levels of government not only are key players but are essential to the smooth functioning of the industry.

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17. This terminology is borrowed from researcher Raymond Dupuis, who uses it aptly in his study *The Quebec Seafood Industry Network*, prepared for Fisheries and Oceans Canada (Quebec, 1997).

18. This is the primary function of the Department of Fisheries and Oceans. One of the largest federal departments, it has a workforce in Canada of 9,566 (1,053 of them in Ottawa) and a budget of $1.4 billion for 2000–2001 (Public Accounts). Its mandate is not only to manage the resource but to promote understanding, conservation, and the optimal use of the resource and the aquatic environment for current and future generations, while ensuring safety at sea, environmental protection, and support for industry clients.

Furthermore, both levels of government have contributed to the implementation of an entire network of facilities and infrastructures for specialized services, research, and technology transfers, most often in partnership with universities, specialized colleges, and government centres and agencies whose mandates specifically include the seafood industry. Public monitoring of and support for the industry are crucial to the forging of close links with all sectors of the industry and with each regional base. A good example of institutional support is the aquaculture industry in southwestern New Brunswick. The impetus for this initiative came from both the federal and provincial governments, who combined forces with the private sector to ensure a solid base for the emerging industry. Intensive partnership initiatives and strategic support are also being provided by other provinces, particularly in the aquaculture sector, where, as in the traditional fisheries sector, government involvement is fundamental and often essential — from the product design stage through to wholesale and retail sales.

Beyond the strategic support they provide, the tertiary and quaternary sectors of the fishing industry are essential to the communities concerned, which benefit from government presence because their low population densities would otherwise allow for only a strict minimum of public infrastructure and services. Whether a fisheries interpretative centre, a training school for fishers, a regional management office or an industry research centre, a government's presence in a community is a source of enrichment and support. And besides its direct economic impact, that presence also contributes to employment diversification.

The Economic Impact of the Industry

Taking into account all four sectors, primary to quaternary, of the fishing industry, what is its overall economic impact both in eastern Canada as a whole and in each of its five provinces? Data from the 1996 census provide a fairly accurate picture of the importance of the industry's primary and secondary sectors in the region. With respect to primary production, the census reported 37,481 fishers and deckhands who derive most of their income from fishing. The census also reported that 38,525 people in eastern Canada work in fish processing. This number can vary because of the cyclical nature of the resource and according to the time of year, given that the industry as a whole is highly seasonal.[19] In 1996 a total of 76,006 workers earned most of their income from fishing and fish processing. The data for each province are presented in table 1 and show that in Newfoundland and Prince Edward Island, the industry employs the highest percentage of workers, i.e., almost 10 percent of the provincial labour force.

Unlike the industry's primary and secondary sectors, the contribution of its tertiary and quaternary sectors is harder to identify. DFO Economic Services, Quebec Region, in cooperation with the Bureau de la statistique du Québec (BSQ) and using its intersectoral model, estimated that the number of jobs generated by tertiary activities in the Quebec seafood industry is equal to approximately 60 percent of all jobs in the industry's primary and secondary sectors combined.[20] This percentage seems high to us but can be explained, first, by the fact that Quebec's regional/provincial (retail) market is more highly developed and, second, by the presence of a seafood-processing sector in metropolitan areas. Although it is risky to extrapolate for each province, we believe that a 40 percent ratio is realistic for the Atlantic provinces given the fisheries' dominant position in the economy. Using that 40 percent estimate, we can assume that 30,402 tertiary sector jobs[21] are related to the fishing industry in the five eastern Canadian provinces.

The quaternary sector is a strategic link in the industry. Providing support, management, and industry regulation structures (capture, transportation, processing, industrial standards, marketing, harbour and industrial infrastructures, R & D, and professional associations), the public and parapublic services providing support to the fisheries constitute the backbone of the various segments of the industry.[22]

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19. The moratorium on the groundfish fishery, for example, reduced the labour force in the Newfoundland fisheries from approximately 44,000 in 1990 to 17,500 in 1995. The expansion of the shrimp and snow crab fisheries led to some rehirings, which brought the number of people directly employed in the fishing industry in Newfoundland in 1998 to 27,000 (according to *The 1998 Newfoundland and Labrador Seafood Industry — Year in Review*).
20. This is an estimate for the province as a whole. The fisheries are much more extensive in Quebec because of the size of the internal market for seafood products. See Fisheries and Oceans, *The Quebec Seafood Industry Network* (Quebec, 1997).
21. Tertiary jobs include jobs in related activities (construction, vessel and plant repair and maintenance, transportation of fishery products, manufacturing and sales of fishing equipment and gear, consulting services, accounting, etc.).
22. Fisheries and Oceans, *The Quebec Seafood Industry Network*.

Table 1

Employment and Income from Fishing and Fish Processing, by Province, 1996

	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Eastern Canada	Canada
Number of Jobs							
Total labour force	252,545	74,080	450,760	376,895	3,378,040	4,532,320	15,048,000
Manufacturing industries	25,525	7,410	47,700	49,055	582,750	712,440	2,127,715
Fishing and trapping	11,710	4,255	10,575	6,640	4,301	37,481	52,775
Fish processing	12,160	2,830	8,895	9,840	4,800	38,525	47,765
Fishing and fish processing	23,870	7,085	19,470	16,480	9,101	76,006	100,540
% of total labour force	9.45	9.56	4.32	4.37	0.27	1.68	0.67
Income (in millions of dollars)							
Total labour force	5,362	1,423	10,035	8,128	84,843	109,791	404,851
Manufacturing industries	486	126	1,230	1,252	13,902	16,996	68,263
Fishing and trapping	208	99	260	158	95	820	1,124
Fish processing	131	28	154	105	59	477	673
Fishing and fish processing	339	127	414	263	154	1,297	1,797
% of total labour force	6.32	8.87	4.12	3.23	0.18	1.18	4.44

Source: Statistics Canada, 1996 census; compiled by the author.

In the federal government, 5,261 people are employed by the Department of Fisheries and Oceans in the four administrative regions in eastern Canada, i.e., 55 percent of the department's staff across the country. Staff in other federal departments and agencies may also be involved in projects and duties specifically involving the fisheries. Each of the five provinces has a department (sometimes responsible for another industry as well) and regional infrastructures to meet industry needs (research centres, interpretative centres, and industry training facilities). Sectoral agencies and various associations are especially numerous in the fisheries, whether involved in harvesting, processing, or marketing.

Our aim here is not to provide a breakdown of the kinds and numbers of jobs or the revenues and expenditures specific to the fisheries. The study conducted in Quebec estimates that quaternary sector employment accounts for 13 percent of jobs in the base industry (fishing and processing). Applied across eastern Canada, that percentage translates into 9,881 "quaternary" jobs. That figure does not seem at all excessive, considering that DFO alone employs 5,261 people in the region.[23] The number of quaternary jobs in the fisheries represents 50 percent or more of all government jobs in the region related to industries associated with the oceans.[24] Table 2 summarizes the distribution of fisheries-related jobs by sector.

Our definitive estimate is that there are 116,288 jobs directly related to the fisheries industry in eastern Canada, 76,006 (65 percent) of which are involved in the industry's core activities. Those jobs, which should be considered direct jobs — meaning that they are fundamentally dependent on fishing and processing — in turn help create other jobs in the economy, and those we estimate using an employment multiplier. The multiplier used was 1.15, the same as in Quebec, and based on it, we calculate that there are 17,443 additional jobs in eastern Canada that depend indirectly on the fisheries. In total, therefore, 133,731 people are employed in the fishing industry and related activities in the Atlantic provinces and eastern Quebec.

The importance of the fisheries is even more obvious when we look at the income it generates, either directly or in the form of transfer payments. We estimate the direct income from fishing and

23. Figures were obtained from the regional offices of the Department of Fisheries and Oceans.

24. On this topic, see Department of Fisheries and Oceans, *National Oceans Industries* (Quebec); Internet site.

Table 2

Estimated Impact of the Fisheries in Eastern Canada, 1996

	Number of Jobs	Income (in millions of dollars)
Primary sector — fishing	37,480	818
Fish processing	38,525	477
Total, fishing and processing	76,005	1,297
Tertiary sector[a]	30,402	692
Quaternary sector[b]	9,881	276
Direct impact of the industry	116,288	2,265
Indirect spin-offs from multipliers[c]	17,433	340
Industry impact	133,731	2,605

Source: Calculated and compiled by the author.

[a] We estimate that 40 percent of jobs in the base industry (fishing and processing) are tertiary sector jobs directly related to the industry. In Quebec, analysts use a ratio of 60 percent. Estimated income from tertiary employment is the same as the average salary in the Atlantic provinces, i.e., $22,745 in 1996.

[b] Basically includes industry-support services (jobs in provincial departments and Fisheries and Oceans, as well as agencies and organizations directly involved in the industry). The estimated income from quaternary jobs is based on the average salary of public sector employees in the Atlantic provinces, i.e., $27,930 in 1996.

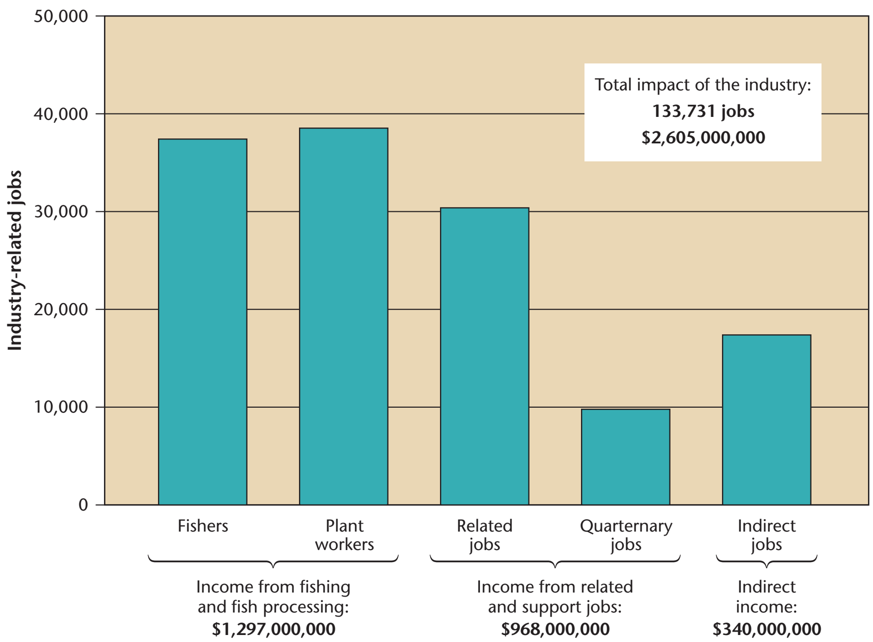
[c] The employment multiplier is 1.15, which means that for every 100 direct jobs in the industry, there are 15 other jobs, particularly among suppliers. We use an income multiplier of 1.30. Both multipliers were used by DFO analysts (Quebec) to assess the impact of the seafood industry in Quebec.

processing activities on Canada's East Coast at $1.3 billion, which combined with a direct income from the tertiary and quaternary sectors of $968 million totalled $2.3 billion in 1996. If we include indirect income, a total of $2.6 billion is injected into the eastern Canadian economy through the fisheries and the seafood industry (see figure 2).

This brief impact analysis easily demonstrates that the seafood industry, including upstream and downstream services, involves many players and provides a strong link among various regional bases. Although there are nonmaritime occupations within maritime fishing areas, the region as a whole is largely grounded on the sectoral bases of the fishery. The coast is home to a number of centres with an industrial function (Corner Brook, Summerside, Sydney, Miramichi, Shippagan, Sept-Îles, etc.), an administrative and commercial function (Bonavista, Antigonish, Yarmouth, Digby, Moncton, Caraquet, Matane, Gaspé, etc.), or a combination of functions, as in the case of urban areas such as Halifax, St. John's, Truro, Charlottetown, and Bathurst. Although at first glance those centres have little interaction

Figure 2

Overall Economic Impact of the Fisheries in Eastern Canada, 1996



Source: Compiled and calculated by the author.

with the fisheries, as a whole they provide the main administrative, scientific, and commercial services that supply and support the entire industry.[25] To various degrees, they also meet the needs for goods and services in neighbouring rural areas, in this case maritime fishing areas, which is how these centres developed and grew in the first place. In fact, servicing rural areas is partly responsible for their continuing growth.

25. For example, government agencies such as Fisheries and Oceans (head offices in St. John's, Halifax, Moncton, and Quebec City, with local offices in several coastal centres), government departments and agencies, maritime research centres (St. John's, Halifax, Truro, Charlottetown, St. Andrews, Moncton, Shippagan, and Matane), sector agencies and regional associations, training centres (Pictou, Caraquet, and Grande-Rivière), and so on.