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Toward the Marketing of Seafood Harvested in New England

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TOWARD THE MARKETING OF SEAFOOD

HARVESTED IN NEW ENGLAND

by

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Introduction

In this study the author will concentrate on the marketing activities of the U.S. commercial fishing industry. The study will use examples from New England to illustrate various points covered in the study. Particular reference will be made to the geographic area of Southern New England and move specifically to Point Judith, Rhode Island and New Bedford, Massachusetts. The study will apply the 4 "P's" of the marketing mix, product, place (processing and distribution), price and promotion to Atlantic groundfish primarily in the fresh category. Such categories as frozen groundfish, shellfish and underutilized species will be referred to indirectly. The author felt the need to narrow the study down to get into more depth in a specific area of commercial fishery - fresh groundfish. However, in studying this area it is believed an analysis of the problems facing this segment of the industry in the marketing area will result in insights which can be applied throughout the industry.

The study is divided into two parts. Part I reviews the situation in the industry prior to 1976, the Fishery Conservation Management Act, the U.S./Canadian East Coast Fisheries Agreement and the American Fisheries Promotion Act. Part II applies the marketing mix to the industry with emphasis on fresh seafood harvested in New England. Let us begin.

Background Prior to 1976

It has been said "the U.S. commerical fishing industry primarily comprises for interrated activities: harvesting, processing, transporting and distributing/marketing."[1] Prior to 1976 the "harvesting" sector of the industry had been in a state of decline for some years. "From a peak of nearly 800 vessels in 1951, the New England fleet had shrunk to under 600 in 1962,

a 25% decline. Landings, too, were off by a quarter down from 681 million lbs. to 516 million lbs. More importantly, the U. S. share of its own groundfish market fell from 67% in 1951 to less than 30% a decade later in 1961.

> A reduction in crew size helped offset some of the low returns, but few new hands were being attracted to the fisheries, no new boats were coming off the ways, and the industry had generally bit the skids.[2]

These observations were made by Tom Sullivan, Atlantic Editor of the National Fisherman. He has written a series of articles examining the fish pricing system in the U. S. The main point he was making in the article referred to here is that the Canadian Government's active subsidy program combined with lack of assistance and low prices for product in the U. S. led to an industry decline, depletion of the fleet and loss of market share to Canada which is an industry issue today. The economy of the Maritime Provinces at this time was heavily dependent on fishing, agriculture and logging. Meanwhile, New England was experiencing a post-war building and electronics boon which allowed U. S. fishermen to quit the sea and take jobs elsewhere.[3]

Using another source of data, it is pointed out that in 1960 domestic landings contributed 60% to total supplies. "The domestic share of edible product declined rapidly over the next 13 years and reached a low of 34% in 1973."[4] This shortfall in production was met primarily by imports from Canada, Japan and Europe in the categories of fresh, frozen, canned and cured seafood. By 1974, prior to the passage of the Fisheries Conservation and Management Act in 1976, the production of edible weight (equal to 45% of live weight in fin fish) fresh and frozen fish was 658 million pounds for domestic fish and 902 million pounds for imports. By 1978, after the passage of the Fisheries Conservation and Management Act, domestic production of fresh and frozen fish had risen to 911 million

pounds but imports were up to 1,155 million pounds.[5]

The author used this data to illustrate the importance of imports in the fresh and frozen fish market but also to point out the problem of getting accurate statistical data. Much of the data available is from the National Marine Fisheries Service. Looking at comparable data for the 1974 and 1978 periods, the National Fisheries Services classifies its data as "Round Weight Basis" and lists domestic commercial landings in 1974 as 2,496 million pounds, imports as 4,142 million pounds. In 1978, domestic landings were 3,177 million pounds and imports were 4,958. Domestic landings were 37.6% of total in 1974 and 39.1% in 1978. The complete NMFS table for the periods 1955-1978 is presented on the next page in Table 1.

The Commercial landings of "fish and shellfish" are listed in Table 2 on the next page and list 660,717 thousand pounds of fish and shellfish for New England or 11% of the national catch for 1978. The value of this catch is 13.8% of a total value of $1,854,500 or $256,510. Of course, the shellfish is not reported separately which leads to distortion for the purposes of this study due to the higher value for shellfish as compared to pound fish.

The U.S. market has preferred high priced species and again according to the NMFS "in 1974 U. S. consumption accounted for 91 percent of world lobster landings (both American and spiny lobsters) 41 percent of world tuna landings and 27 percent of world shrimp landings. Consumption of other high-valued species in the United States included scallops (46 percent) clams (45 percent) and salmon (27 percent)."[6] As a result, the deficit of the U. S. seafood trade balance in "1960 was only $285,000; in 1976 it rose to about $2.25 billion.[7]

As of 1974, about 161,400 persons worked in the harvesting sector of the fishing industry. Some of these people were part-time workers. Another 92,000 (some part-time) were employed in the processing and wholesaling segments.

"In 1976, there were 1,668 plants processing fresh and marine fishery pro-

Table I. U.S. Supply of Edible Commericial Fishery Products, 1955, 1960, 1965 and 1970-1978; Round Weight Basis

Year	Domestic Commerical Landings	Imports[1]	Total Available Supply	Domestic Landings Share of Total
	million pounds			percent
1955	2579	1323	3902	66.1
1960	2498	1766	4264	58.6
1965	2587	2576	5163	50.1
1970	2537	3676	6213	40.8
1971	2441	3582	6023	40.5
1972	2435	4454	6889	35.3
1973	2398	4709	7107	33.7
1974	2496	4142	6638	37.6
1975[2]	2465	3929	6394	38.6
1976[2]	2760	4629	7389	37.4
1977[2]	2900	4514	7414	39.1
1978[2]	3177	4958	8135	39.1

[1]Excludes imports of edible fishery products consumed in Puerto Rico, but includes landings of foreign caught tuna in American Samoa.

[2]Preliminary

Source: Fisheries of the United States, 1978, National Marine Fisheries Service, NOAA; U.S. Department of Commerce

Table II. Commercial Landings of Fish and Shellfish by Regions United States, 1978[1]

Region	Pounds		Value	
	Thousand Pounds	Percent	Thousand Dollars	Percent
New England	660,717	11.0	$ 256,510	13.8
Middle Atlantic	200,603	3.0	78,591	4.2
Chesapeake	598,618	9.9	94,179	5.1
South Atlantic	398,940	6.6	96,276	5.2
Gulf	2,286,998	37.9	473,227	25.5
Pacific Coast	1,740,855	28.9	820,632	44.3
Great Lakes and other inland waters	126,394	2.1	23,465	1.3
Hawaii	14,575	.2	11,620	.6
Total*	6,027,700	100.0	$1,854,500	100.0

*Percentages may not add to 100 percent due to rounding.

[1]Statistics on landings are shown in round weight for all items except univalve and bivalve mollusks, such as clams, oysters, and scallops, which are shown in weight of meats excluding the shell.

ducts in the United States that seasonally employed 77,900 people. In the same year, 1992 wholesale plants seasonally employed 13,900 people. The number of plants engaged in canning, preparation of fillets and steaks, and production of industrial fishery production increased from 520 in 1976 to 533 in 1977. Most of these types of plants are in the Pacific states and their primary product is canned fish. The South Atlantic and Gulf states have the largest number of plants for processing industrial fish."[8]

In the area which this report is emphasizing the "largest number of plants processing fillets and steaks is in the New England states. Several large firms dominate the processing portion of the industry in contrast to domestic harvesting operations. Ninety percent of U.S. fishing vessels are independent operations and employ fewer than 5 persons."[9]

Finally, NFMS estimates total value added by commercial fishing activities at 6.7 billion, based on 1973 data. This figure is less than 1% of the Gross National Product."[10] However, it should be pointed out that the value added varies substantially from region to region around the United States.

We have discussed the decline in domestic percentage of total landings, impact on employment, reduction in the fleet and decline in market share in the period leading up to the passage of the Fisheries Conservation and Management Act of 1976. We now turn to an analysis of the FCMA and other legislation which has impacted on the industry through mid 1981.

New England and the (FCMA) Fishery Conservation and Management Act of 1976

The FCMA established a Fisheries Conservation Zone (FCZ) which extended U. S. fishery management jurisdiction to 200 nautical miles off the U. S. coast. The act does not cover tuna as the U. S. feels this should be managed internationally (enlightened self interest). However, jurisdictional issues have arisen

as other countries "economic zones" have claimed the tuna as within their area of supervision. This political issue is beyond the scope of this study due to its emphasis on ground fish in the Northeast. What is important is the decline in foreign catch within the 200 mile zone. Total foreign harvest excluding tuna was about 1.7 million tons in 1977, down from 3.5 million tons in 1971. Table 3 lists the allocation for 1977 and 1978 with the figures for the 1977 catch for the Atlantic.[11]

TABLE III

Allowable levels of foreign fishing, by country, 1977 and 1978, and foreign catch in the Fishery Conservation Zone, by Area, 1977[1]

	1977 Allocation	1977 Catch[2]	1978 Allocation
Atlantic		thousand tonnes	
Bulgaria	8.1	4.7	1.5
Canada	17.7	11.4	(a)
Cuba	17.7	1.6	9.7
Federal Republic of Germany	6.5	---	0.9
France	1.2	---	1.5
Italy			
Democratic Republic of Germany	20.2	8.0	--
Japan	32.0	15.0	8.2
Mexico	1.1	--	15.5
Poland	40.0	20.0	5.2
Romania	1.4	0.9	--
Spain	22.9	14.5	18.2
U.S.S.R.	169.1	91.3	91.9
Pacific			
Japan	1,169.4	1,113.3	1,149.4
Korea	81.2	80.2	92.6
Mexico	---	---	51.2
Poland	27.2	20.4	22.9
Taiwan	5.5	1.5	5.8
U.S.S.R.	480.8	291.5	402.1

[1]Source: National Marine Fisheries Service [2]Preliminary Estimates
a) Negotiations in Process

Note the substantial decline in the Canadian catch in 1977.

The Act has provided an opportunity for exapansion of the U. S. catch within the constraints imposed by the Act. In the East, the Act meant that "foreigners could be driven entirely from the waters of New England and confined tightly to fishing windows in the Mid-Atlantic where fisheries were allowed to continue for some so-called underutilized species."[12]

The "optimism" created about by the Act concerning the opportunity for rebirth and development in fisheries previously dominated by foreigners resulted in a build up of the fleets. We are particularly concerned with the new draggers and scallopers added in the East with specific reference to Point Judith and New Bedford fleets. Table IV lists the Federal support programs available to Commercial fishing interests for vessel construction and renovation. (next page)

In New Bedford, in 1980, 16 new boats were part of a total of 70 trawlers and scallopers built for New Bedford in the four year period since the 200 mile limit came into effect in 1976. Today, the total fleet numbers between 150 and 175 boats.[13]

Growth is expected to end with no new vessels being constructed in 1981 due to overbuilding, high interest rates and increased operating costs.

In Point Judith the growth has not been as dramatic. Some of the vessels added to the fleet are not new but used vessels purchased elsewhere and moved to Point Judith. Point Judith Cooperative members added 8 new vessels over 70 feet in length in 1978-79. Expansion of the Galilee fleet also occurred in the non-Coop group with approximately 15 new and used vessels added between 30 and 90 feet in length.[14]

The experience in New Bedford and Point Judith is reflected in a general increase in the number of fishing vessels by gross regulated tons from 1975 to 1979 to approximately 1,000. (See Table V)

TABLE IV

Federal Support Programs for Commercial Fishing Interests

Federal Programs	Vessel purchase construction	Vessel renovation	Private onshore facilities	Public Offshore facilities
A. Economic Development Administration				
1. Public Works and Development Facilities				x
2. Business Development Loans	x	x	x	
3. Title IX	x	x	x	x
B. Small Business Administration				
1. Section 7(a) Loans	x	x	x	
2. Section 502 (LDC) Loans	x	x	x	
3. Disaster and Emergency Laons	x	x	x	
C. National Marine Fisheries Service				
1. Capital Construction Fund	x	x		
2. Fishing Vessel Obligation Guarantee	x	x	x	
3. Fisheries Loan Program	x	x		
4. Import Duties Fund				
D. Environmental Protection Agency				
1. Section 201				x
E. Farmers Home Administration				
1. Guaranteed Business and Industrial Loans	x	x	x	x
F. Farm Credit System				
1. Production Credit Association Loans	x	x	x	
2. Banks for Cooperatives	x	x	x	
G. Department of Housing and Urban Development				
1. Community Development Block Grants	x	x	x	x
H. Department of Commerce				
1. Trade Adjustment Assistance	x	x	x	x

Source: Commonwealth of Massachusetts, A Report of the 200-Mile Fisheries Work Group, Lt. Governor Thomas P. O'Neill, III, chairperson, no date, page 23.

TABLE V

Number of Fishing Vessels in New England

by Gross Regulated Tons 1975-1979

GRT	1975	1976	1977	1978	1979
5-50	367	414	427	471	517
51-150	302	303	338	332	369
151 and over	68	66	71	72	100
Total	737	783	836	875	986

Source: N. Bockstael, URI, Resource Economics

For the purposes of this study, the general conclusion can be drawn that the fleet has expanded significantly since 1976. The capacity to catch fish has increased but so has the competition for a controlled supply of fish available under domestic quotas required by the FCMA. Increased competition has been accompanied by higher operating costs, variations in price levels which has resulted in an overall decline in profit levels for at least the majority of those concentrating on the groundfish portion of the catch in 1980. The forces of supply and demand were apparent in New Bedford where overcapacity resulted in a glut of fish/depressed prices at a time when demand dropped off by the end of Lent. Operating costs for fuel, food and other expenses remained high while the return from the prices obtained from catch dropped.

The fishermen were quick to point out that as their price dropped the consumer prices at the retail level remained relatively unaffected.[15] The trawler fleet decided by the end of May, 1980, to protest and tied up three fourths of the ports 130 vessel trawler fleet. They left their vessels at the dock hoping to negotiate a minimum price guarantee on dockside prices from the processors. Processors refused saying the interaction of supply and demand

forces were necessary for them to remain competitive in the New England market place. The fishermen picketed the port processing plants but production continued as a result of over the road fish shipments and inventory which was accumulated during the glut being drawn upon. After twenty four days the fishermen capitulated without winning any concessions and returned to the sea. They decided to limit trips to 49,000pounds, plus a nine day dock to dock fishing time. However, although prices increased slightly for a short time, average dockside price for finfish in 1980 was down about 4 cents per pound.[16] This scenario will be referred to later on the the study when additional analysis is done of the marketing mix.

So, the expansion of the fleet turned out to have both positive and negative connotations for New England and particularly for New Bedford. Another area which became controversial in implementing the F.C.M.A. was the difficulty in allocating "optimum yield" per species. "The term means the amount of fish that will provide the greatest overall benefit to the United States with particular reference to food production and recreational opportunities, and is prescribed as such on the basis of maximum biological sustainable yield from such fishery, as modified by any relevant economic, social, political or ecological factor."[17] With that kind of a definition it is easy to see why there has been difficulty in gaining acceptance of the concept by fishermen. Enforcement of limited entry based on inadequate scientific information using techniques of licensing, fees or quotas to control fishing effort has caused considerable criticism of the Act and the Regional Fishery Management Councils established to develop fishery plans to implement the management and conservation objectives of the FCMA. The following table (Table VI) outlines the duties of the Regional Councils and the National Marine Fisheries Service.

TABLE VI

Duties of Regional Councils and National Marine Fisheries Service

Regional Councils	Department of Commerce (NMFS)
Determine information, data, and analysis needed to prepare management plans.	Prepare preliminary management plans for fisheries.
Test and evaluate techniques for determining optimum yield and other management factors.	Issue permits for foreign fishing.
Secure needed information from NMFS or other regional sources as necessary to complete management plans.	Establish general regulations and guidelines for preparation of all management plans.
Prepare fishery management plans, oversee their implementation.	Provide the Councils with data and information necessary to prepare management plans.
	Work with Coast Guard on enforcement of regulations.
	Work with State Department to determine national allocations of the total allowable level of foreign fishing.

Source: Adapted from Office of Technology Assessment, Establishing a 200 Mile Fisheries Zone, March 1977.

Problems have occurred on the formulation and implementation of the management plans. For example, the New England Fishery Management Council experience difficulty in instituting a system of limited entry in Gloucester, Mass. The following article excerpted from the Gloucester Daily Times, March 1, 1978, Page 1 in the U.S. Ocean Policy in the 1970's illustrates the individuality of the fisher-

men and the difficulty in gaining acceptance to the concept of limited entry.[18]

"Upon its passage in 1976 and again when it became effective last year, the law was almost universally applauded by New England fishing interests ... The past year has been filled with some obvious pluses, some minuses, problems, power struggles and a few ironic twists no one anticipated ... The unexpected surge in landings led to low prices that made some fishermen complain bitterly that life had been better when the foreign fleet was around; landings were lower, prices were higher.

The low prices accelerated landings and led to rapid closures of the fisheries. The closures, in turn, prompted the New England Fishery Management Council to recommend relaxation of strict rules.

Disputes with the Department of Commerce and the council still continue over policy struggle and relaxed quotas that allow overfishing. Combined with massive landings from boats flaunting (sic) the rules, the combined catches for the year far exceeded acceptable biological levels.

Strict catch limits have been mandated again for this year (1978) and late last year fishermen learned just how serious the government was about enforcing the new law. Many ignored repeated warnings that made fines of up to $25,000 per offense a possibility.

Shortly before Christmas, the notices began to trickle out of marine fisheries service computers in Washington. Just as they had been warned, fishermen were being fined up to $25,000 per offense, a total of $150,000 in one case.

More than 80 citations were issued, forcing many of the violators to band together in their own defense while those who abided by the rules were jubilant that the violators were finally being punished."

Note: See Appendix I for an example of a New England Fishery Management Council report.

In New England, as of November 1980, problems remained in spite of the progress made under the FCMA. It is probably best summarized in the following excerpt from an article "The 200 Mile Limit: Has It Succeeded Or Failed?"[19] "Recognizing that the industry was in a serious state of depression as the 200-mile legislation was passing through Congress, a Senate committee headed by Sen. James Eastland (D-Miss.) conducted an extensive survey of the fisheries, documenting many of the problems now being addressed in pieces of fisheries development legislation in the House and Senate.

The long delay occurred mainly because federal officials in the National Marine Fisheries Service and elsewhere gave convincing arguments that the 200 mile law, alone, would create a sufficient framework for resurgence of the fisheries.

Federal officials also prevailed in their opposition to extending most federal loans programs to cover shoreside facilities. As a result, the predictable has happened: the fleet has been built up, but processing and handling facilities remain limited, standing as a bottleneck between the known supplies and known demands.

And, significantly, federal officials have been steadfast in their opposition to establishing trade barriers or other systems which would help put the unsubsidized U. S. fleets on a par with their government-financed counterparts in the world fish market."

As of May, 1981, the Reagan Administration's attitude toward regulation is expected to result in an easing of the regulations and their enforcement on New England fishermen. According to Allen Peterson, Director of the National Marine Fisheries Service's Northeast Region, "If there are going to be rules, I think the message is clear. They want them to be necessary rules, simple and enforceable."[20]

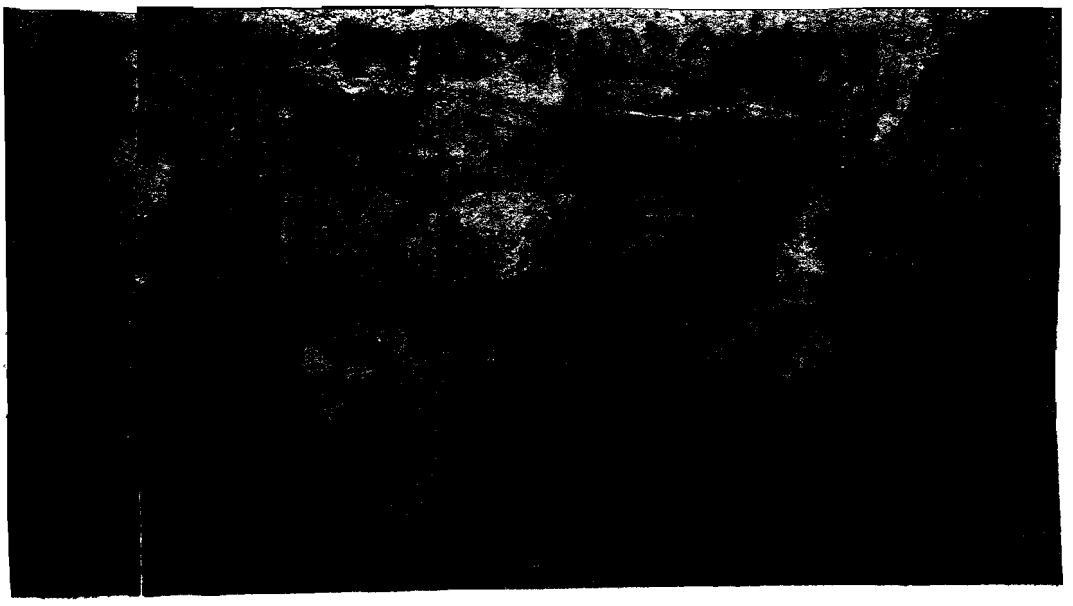
The East Coast groundfish management plan is an example of the anticipated changes. "The plan to regulate the haddock, cod and yellowtail was incredibly complex, riddled with loopholes and contradictions that make it doubtful it accomplished much beyond giving the regional councils a great topic for debate, giving people who weren't afraid to break the rules a financial edge over law abiders and giving reporters something to write about."[21]

We now turn to a brief analysis of the "US/Canadian East Coast Fisheries Agreement."

U.S./Candadian East Coast Fisheries Agreement

The controversial US/Canadian East Coast fisheries agreement was "scrapped" by the Reagan Administration early in March, 1981. President Reagan "disconnected what had been linked agreements under the administration by Jimmy Carter. The first was a simple agreement to let the World Court settle the two countries overlapping claims to ownership of parts of the valuable fishing grounds. This agreement was retained."

"The second treaty set up a complicated system of allocating catches on the grounds to fishermen from the respective countries. This is the agreement that was vehemently opposed by most of the New England fishing industry and is the part of the agreement that was scrapped." See the diagram of the area below the first and second Canadian claim lines. (below) In exchange for allowing the



U.S. to back out of the agreement, Canada has been allowed to expand its fishing operations up to the "second Canadian claim" line until the dispute is settled by the World Court. The U.S. has repeatedly denounced the "second claim line" as "ridiculous" but will await a decision by the World Court which could take as long as five years.

The U.S. also agreed to implement a management plan for scallops, which the Canadians charge is being overfished by U.S. fishermen. Canada has a limited entry program which allows only 77 vessels to work the grounds of Georges and Brown banks (see diagram). "Vessels are limited to a catch of no more than 30,000 lbs. of scallop meat per trip with an overall quota of 180,000 lbs. per four month season throughout the year. There may also be no more than an average of 40 meats per lb." "The American plan currently being promulgated calls for only one catch regulation: a maximum of 30 meats per pound to protect young scallops. Scallops throughout the North Atlantic are now extremely scarce, and 30,000 lb. trips are unheard of, as are 180,000 lb. productions in four months."[22]

The matter is still not resolved as far as the Canadians are concerned. Fisheries Minister Romeo LeBlanc has said that discarding the catch allocation agreement in the second treaty was accepted by Canada with the understanding that "the U.S. would bring its fishermen under control and limit catches of scallops and other species in another way." [23]

Thus, as of May, 1981, the area which is a major source of catch for New England fishermen remains in dispute. Minister LeBlanc is considering retalitary measures if the U.S. does not live up to what he considers to be a commitment to limit the catch of scallops and other species. My judgement is that the problems will continue to be discussed as a "national" issue in Canada and a "regional" issue in the New England area with little additional interference by

the Reagan administration unless Canada decides to link the issue to energy which is a national issue in both countries and a priority in the Reagan administration. Canada could exercise leverage in the energy area to accomplish its goals in the North Atlantic. If this happens, it is the authors belief that the commercial fishing industry in New England would not be given priority over energy and could be adversely affected.

Let us now turn to an analysis of the American Fisheries Promotion Act, 1980.

The American Fisheries Promotion Act, 1980

President Carter signed Public Law 96-561 on December 21, 1980 and the Law commonly known as the "Breaux Bill" became effective on Dec. 22, 1980. Congressman John Breaux (D., LA) has been active in trying to increase Federal support to the U.S. commercial fishing industry for several years as a member of the House Merchant Marine and Fisheries Committee and Chairman of the Sub Committee on Fisheries and Wildlife Conservation and Environment.

The Act amends the following six laws or programs:

- The Fisheries Conservation and Management Act (FCMA)
- The Fishing Vessel Obligation Guarantee Program (FVOG)
- The Fisheries Loan Fund (FLF)
- The Saltonstall/Kennedy Program (S/K)
- Fisheries Protective Act Amendments (FPA)
- Fisheries Contingency Fund Program (OCS Sand Act Amendment of 1978)

The changes in the six laws or programs will be reviewed briefly below. Unless otherwise noted, the following comments are excerpted and/or quoted from a release for the Office of Public Affairs, National Marine Fisheries Service, January, 1980.

Fisheries Conservation and Management Act (FCMA)

The FCMA created a fishery conservation zone (FCZ) from the seaward boundaries off the coastal states to 200 miles off the Coast of the United States. It gave the U.S. exclusive management authority for all species except tuna within the area. It permits foreign countries to fish within the zone subject to a number of restrictions and requirements.

The total allowable foreign catch (TALFC) is based on the Optimum Yield (OY) from the fishery in relation to the estimated catch by U. S. fishermen. The difference has been available to foreign fishermen. The AFPA allows Regional Fishery Management Councils, in this case New England Fishery Management Council to set an annual foreign fishery level that is related to increase in domestic harvest and certified by the Council to the Secretary of Commerce. The net result could be a substantial reduction in foreign catch as domestic catch increases. A series of factors will be considered in deciding how much each foreign country is allowed. Such things as "their tariff and other import barriers to U. S. fishery products, their cooperation in trade of U. S. fish products and fisheries enforcement in the U. S. FCZ (Fishery Conservation Zone (their domestic consumption needs, their contributions to the growth of the U. S. fishing industry, their cooperation in selling year conflicts with U. S. fishermen, their cooperation in fisheries research, and their traditional fishing in U. S. waters." This "laundry list" of factors can be interpreted a number of different ways to prohibit foreign fishing the FCZ for economic and political reasons.

The amendments to the act also require fees from foreign fishermen to be raised to at least 7 percent of the dockside value of all fish caught by foreigners within the FCZ. It requires a U. S. observer be placed on each foreign

vessel paid for by the foreign country as a fee surcharge where it applies for an annual fishing permit.

Publication practices for fishery management plans and amendments are now not required to be published in the Federal Register but copies can be obtained from the Regional Fishery Management Council or the NMFS regional office. In the case of New England this would be Saugus, Mass. for the Council and Gloucester, Mass. for the regional office of NMFS.

Finally, the AFPA changes the name of the FCMA to the Magnuson Fishery Conservation and Management Act to honor former Senator Warren Magmuson from Washington.

Fishery Vessel Obligation Guarantee Program (FVOGP)

The program guarantees repayment (FVOGP) of a loan of up to 87 1/2 percent of money borrowed by fishermen for constructing, reconstructing or reconditioning commercial fishing vessels. The AFPA broadens the scope for guaranteeing loans to include shoreside facilities and "permits borrowers to obtain guaranteed loans for land, buildings, and equipment designed to unload and receive fishery products from vessels. Loans are guaranteed for facilities to hold fishery products for processing, processing the fishery products, storage facilities for the processed seafood, and distribution of the product after processing." This provision could have an impact on the expansion of shoreside facilities in New England. It is doubtful that it will result in substantial expansion of the fleet in New England due to the present overcapacity.

The original bill had tax deferral provisions for processing plants allowing processors to set aside taxes on profits for future expansion. U. S. processors, especially in the Northwest, claim that such financial incentives are needed to successfully compete with foreign processors in world markets. Congressman

Breaux is reportedly supporting the tax package in the present session of Congress.

Fishery Loan Fund (FLF)

"The fund was established by the Fish and Wildlife Act of 1956 to permit the Secretary of Commerce to make loans to finance or refinance the cost of purchasing, constructing, maintaining, repairing, or operating new or used commercial vessels or gear." The program has been inactive since 1973 when a moratorium was established. AFPA authorizes the Secretary of Commerce to make loans to assist fishermen to avoid default on their mortgages which were guaranteed under the Fishing Vessel Obligation Guarantee Program (FVOG). Other vessels not guaranteed by the FVOG but meeting use, documentation and citizen requirements would be eligible for loans. A third category of aid would be to cover vessel operating expenses for vessels incurring a net operating loss during the fiscal year. Interest rates would be in the area of 3 to 5 percent and financed from an existing $6 million on account with additional funds coming from fishing fees charged to foreign countries fishing within the U. S. Fishery Conservation Zone. It is obvious that interest rates at the level of 3 to 5 percent are far below the market rate for loans. In this sense this provision is a grant or subsidy to the end user. It could be beneficial for parts of the expanded New England fleet who are facing difficulty with both mortgage payments tied to the prime rate and increased operating costs due primarily to fuel costs averaging over $1.00 per gallon.

Note: A typical New Bedford trawler will consume between 3,000 and 4,000 gallons of diesel fuel on a week long fishing trip. Scallopers will burn between 5,000 and 6,000 gallons of fueld on a similar trip. In January, 1980, fuel was approximately $.80 per gallon in New Bedford. The impact of fuel costs of operations is obvious.[24]

Saltonstall/Kennedy Act (S/K)

Established over twenty years ago by two senators from Massachusetts (Everett Saltonstall and John F. Kennedy), the S/K Act "transferred 30 percent of gross receipts from custom duties collected on fishery products to the Secretary of Commerce to be used to promote the free flow of domestically produced fishery products by conducting a fishery education service, and technological, biological and related research programs, and for other purposes."

The provisions of the AFP Act which concerns the New England area is the creation of a fund to be used by the National Marine Fisheries Service to provide financial assistance for:

"a) research and development projects related to harvesting, processing, marketing and related activities, or other aspects of the U. S. fishing industry, and

b) to implement a national fisheries research and development program addressed to those aspects of U. S. fisheries not adequately covered by the above projects."

The Secretary of Commerce is to establish procedures for obtaining proposals and awarding grants. Cost sharing provisions limit federal participation to 50 percent of the estimated cost of the project. "Not less than 50 percent of S/K funds in any fiscal year shall be used for fishery research and development grants."

For New England the provision to fund projects related to "harvesting, processing, marketing and related activities" is very important.

Fishermen's Protective Act,(FPA)

We are most concerned with the affect that AFPA has on the part of the Fishermen's Protective Act that deals with compensation for losses suffered by

fishermen from other vessels. One of the major changes made in FPA by the AFPA is the "inclusion of a provision which will permit fishermen to apply for compensation for loss of income resulting from damage to their vessel or gear caused by another vessel. Under the change, they may now be compensated 25 percent of gross income lost as a result of a gear or vessel casualty. Awards for resulting economic loss will be based on income lost at the time of the incident and on income lost because they cannot fish or have to fish at a reduced effort." Acts of God were excluded after December 22, 1980. This provision could be useful in providing additional protection and possibly reducing insurance costs to the New England fleet.

Fisherman's Contingency Program(FCFP)

"This program compensates fishermen who suffer vessel or gear damage as a result of obstruction created by Outer Continental Shelf gas and oil activities. The program is entirely funded through assessments of the Outer Continental Shelf gas and oil operators." If the owners of the equipment causing the damage admit responsibility, the U. S. government will not provide compensation. This provision requires further clarification on application and financing of the Fund. However, with the anticipated drilling on the Georges Banks, the FCFP could be particularly beneficial to the New England fishing fleet.[25]

Present Status of American Fisheries Promotion Act (AFPA)

As of May, 1981, the AFPA is in trouble as a result of the Reagan Administration's budget cutting policy. The bill was introduced in April, 1980, by Congressman Breaux and after a series of compromises was signed into law on December 22, 1980 by President Carter. In the election of 1980, President Reagan defeated Jimmy Carter. In addition his victory enabled the Republican party to obtain a majority in the U. S. Senate. Several key Senators were

defeated in their bids for reelection and one of them, Senator Warren Magnuson was a key supporter of the commercial fishing industry.

The opposition to the Reagan budget cuts is mounting and the House of Representatives which is controlled by the Democrats has been developing their budget proposals and tax programs to counter the Reagan budget which has four main goals:

- Reductions in personal tax rates and business taxes;
- Spending cuts and other measures reduce the budget deficit;
- Reductions in the burden and intrusion of federal regulations;
- A new commitment to a stable monetary policy

Meanwhile, although the Breaux Bill has been signed into law, the appropriations of funds to implement the law have become bogged down in Congress. It should be noted that both the authorization and appropriation process must be approved by both the House of Representatives and the Senate to make the funds available. It seems clear that in the scramble by the Reagan administration to cut programs, a number were cut arbitrarily without adequate research on their total impact on various interest groups including the commerical fishing industry.

So the bill which promised some sort of assistance to nearly every sector of the industry faces an uncertain future. The irony here is that a substantial portion of the funding needed to implement key provisions of the AFPA have a source of revenue from outside the federal tax structure. Examples include the increased fees to be paid for by foreign fishermen working in the Fishery Conservation Zone and the Saltonstall-Kennedy fund which is financed by duties on importing of foreign fish. The National Marine Fisheries Service (NMFS) would need a supplemental budget from the Office of Management and

Budget (OMB) according to David Rand, Chief of the NMFS Budget Department. An OMB official notes, "Money may be pried loose for some high priority things, but fish ---- not a very high priority."[26]

That sums up the status of the Breaux Bill as of May, 1981, for the purposes of this study. Much of the material presented above was used as part of a detailed analysis of the Act prepared for the Federal Ocean Policy and Organization Course.

Summary of Part I

Part I ends on an optimistic note. We have traced the decline of the fleet and loss of market share from the 1950s up through the mid 1970s when the Fisheries Conservation and Management Act, 1976 was passed. The Act became effective on March 1, 1977 and there have been problems implementing the Act in New England particulary at the New England Fishery Management Council level. It is my contention that the "conservation" and "management" aspects of the Act will become more effective as experience is gained. Four years is a very short time for such an encompassing piece of legislation to be accepted and implemented in an industry full of individuality and resistance to chance. The potential for preserving and utilizing the 200 mile fishery conservation zone in the New England area is enormous.

The U.S./Canadian boundary dispute is a source of conflict impacting on New England's fishery and will not be resolved quickly. However, it seems reasonable to assume that a compromise will be worked out which will enable fishermen from both countries to continue to divide and share the harvest from disputed areas.

As one headline read "Canada Tactics Tough, But Fish War Unlikely - Ottawa's Strong Arm Not Strong Enough."[27]

Finally, the American Fisheries Promotion Act, 1980 has been described as a "pork barrel" bill with something in it for everybody. It reduces foreign catch, raises fees, calls for 100% observers on foreign vessels, fishing attaches stationed abroad, financial assistance, etc., but it has not been funded. Authorizations and appropriations are needed to implement the Act and it is presently bogged down in Congress. It is my assumption that the fishermen will get some help from the Act mainly because it is financed largely outside the general tax base.

So, we close Part I optimistic that the 1980s will see a continuing effort toward consolidating the progress made in the past several years. Problems remain, but in my judgement can and will be solved.

PART II

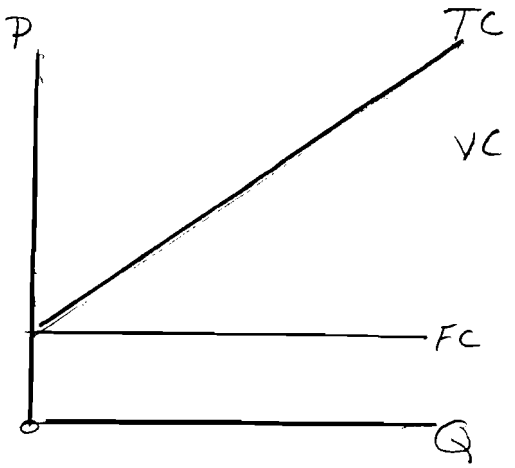
- Marketing Concept
- Product
- Price
- Place
- Promotion
- Summary

The Marketing Concept Applied to Seafood Industry

Application of the "marketing concept" by a company entails identification of what the consumer needs, then producing products at a level which meets this need. The alternative to this would be a production oriented company which would produce a product line and expect the marketing function to go out and sell it. In the seafood industry the product line is produced by the sea and there is a certain amount of chance involved in determining the level of production. You do not, however, tend to do research and development on how to develop a new product line. You might do research and development to enable the production of a seafood product such as shellfish to take place in an environment different from its natural habitat. You might impose legal constraints on the production side (the concept of Maximum Sustainable Yield) to prevent the products from becoming seriously depleted or even extinct. In practice, it appears that the problems on the production or supply side are not easy, but easier to deal with than the demand side. Again, both are interrelated. For purposes of discussion, they will be treated separately.

Supply Side

Landings are related to demand and price but they are also conditioned by 1) biological and environmental variables and 2) regulatory programs. Production seasons contribute to the variations in the supply flow. The source of supply is fragmented in that many vessels tend to produce small volumes of many species. It is not your typical supply curve where your total costs go up but your unit costs can go down as production increases in a controlled situation. Your fixed costs (FC) do not become a declining percent of total cost (TC) when you can't leave port due to inclement weather or you do leave port but return with little or no product.



Finally, the domestic supply side is affected by the large volume of seafood imported into the U.S. Approximately 60% of the U.S. consumption of seafood is derived from foreign sources of supply. This could and should be looked upon as an opportunity not a problem in the long run. From a macro-economic sense, the potential for import substitution is enormous. But, in the short term the foreign seafood can cause dislocations in the supply side of the U.S. products which in turn causes disruptions in the price structure and alternately affects the price received by the fishermen. Export policies of other countries impacts on this as does the U.S. policy toward imports. Some advocate import regulations. With these few comments, we now turn to the demand side:

Demand Side

Demand problems are influenced by 1) the perishability and limited market access 2) low level of domestic demand, and 3) limited export demand.[28] Price is highly responsive to changes on the supply side and may vary considerably within the production season. This is not the typical case of demand elasticity (sensitivity to price) because production (supply of fish) cannot be controlled as you might in manufacturing a supply of 'widgets'. The level of demand is limited by factors such as the three items mentioned above. When production

increases dramatically, prices tend to fall. The net result is fluctuation in price and gross income to the fisherman.

Limited access to markets impacts directly on the fisherman for reasons beyond their control. They must sell their catch due to the perishability and lack of storage and processing facilities which could be used to smooth out some of the price fluctuations. These facilities are often not controlled by the fishermen.

Low level of domestic demand is related to lack of knowledge at the consumer level in the areas of preparation, nutrition, quality and preservation of the product. Lack of taste preference and the availability of substitutes for seafood also contribute to low domestic demand. There is a relationship between higher level of income and demand for high valued products such as shellfish. At the other end of the income scale is the availability of relatively low priced imported seafood for substitution. Some of these factors which limit domestic demand may respond to more effective promotion and this will be discussed below in a separate section of the report. Let us now turn to a discussion of the 'marketing mix'.

Marketing Mix

The market mix consists of product, place (channels of distribution) promotion and price. The 'marketing mix' is interrelated as the 'product' (fish and seafood) moves from the harvester to the final consumer and the fishing/seafood sector of the economy has some unique problems.

The forces of supply and demand play an active role in determining the price of fish products. Generally speaking, the ability to harvest fish has improved (supply side). This is due in part to capital investment in the fleet and the resurgence of fisheries in some areas as a result of the Fisheries

TABLE I

NEW BEDFORD LANDINGS*

Year	Total Pounds	Value Fish	Value Scallop	Total Value
1978	72,126	$23,833	$30,672	$54,505
1979	86,034	30,961	36,463	67,424
1980**	95,739	31,891	38,330	70,511

*Cod, Haddock, Pollock, Sand Dab, B. Back, Dab and Grey Sole, Fluke, Y-Tail, Sword, Tuna, Lobster, Squid, Mixed.

**Average prices paid to fishermen in 1980 dropped 4 cents per pound. Finish landings increased more than 12 percent in volume, but the increases were not enough to offset the drop in prices.

Source: Standard Times, New Bedford, Mass., February 1980-1981.

Conservation and Management Act of 1976. However, supply must also be tied to the demand side and this will be discussed below under the promotion section of the report.

Product

The 'product' of fish and shellfish is harvested by many small firms or individuals who often operate only a single vessel. As was mentioned in Part I, the costs related to catching the product, specifically fuel, have increased dramatically since 1973. There is considerable diversity "among the separate fisheries with respect to harvesting methods, vessel size, relative value of catch and related economic characteristics. In 1975 over 100,000 commercial fishing craft were registered but only approximately 16,000 were larger than 5 net tons. Of about 168,000 fishermen, approximately 48,000 were employed on vessels of 5 net tons or larger."[29] Landings increased 35 to 40 percent in the decade between 1969 and 1978 and value of catch increased nearly four fold.[30]

The New England Situation

As was discussed in Part I of this study, the fleet in New England was expanded after the passage of the FCMA in 1976. For example in New Bedford alone there were 70 new vessels added to the fleet. The catch expanded and the value of the catch expanded as well. Table I & II shows that this occured in 1978 and 1979, but in 1980 there was a decline in average price paid to fishermen of 4 cents per pound even though landings increased by 12%. Once again, we see the forces of supply and demand operating at a time when operating costs were increasing dramatically due primarily to spiraling increases in diesel fuel. In terms of value in 1979, New Bedford was the fourth ranked port in the United States with its record catch of $67.4 million. A list of the top ten

ports in value and poundage leaders for 1979 appears below with their 1978 totals in parentheses:[31]

1. Dutch Harbor, $92.7 million; ($99.7 million).
2. San Pedro, $89.3 million; ($92.1 million).
3. Kodiak, $73.4 million; ($92.6 million).
4. New Bedford, $67.4 million; ($54.4 million).
5. San Diego, $62.7 million; ($69.8 million).
6. Brownsville-Port Isabelle, Tex., $50 million; ($42.0).
7. Chauvin-Dulac, La., $41.5 million; (46.7 million).
8. Aransas-Rockport, Tex., $40 million; ($39 million).
9. Bayou la Batre, Ala., $34.9 million; (unranked in 1978).
10. Cameron, $34.3 million; ($34.2 million).

1. Cameron, 593.1 million pounds; (606 million pounds).
2. San Pedro, 378.2 million pounds; (312 million pounds).
3. Pascagoula-Moss Point, 283.8 million pounds; (334 million pounds).
4. Empire-Venice, La., 278.9 million pounds; (299 million pounds).
5. Chauvin-Dulac, 246.3 million pounds; (300 million pounds).
6. Beaufort-Morehead City, N.C., 218.5 million pounds; (106.7 million pounds).
7. Gloucester, 160.2 million pounds; (185.1 million pounds).
8. San Diego, 156.6 million pounds; (168.3 million pounds).
9. Kodiak, 150.5 million pounds; (177.4 million pounds).
10. Dutch Harbor, 136.8 million pounds; (125.8 million pounds).

Note that Gloucester landed more fish than New Bedford but did not make the top ten in value in either 1979 or 1978. Part of this reason is due to

the high value scallops added to the catch. Table II shows an average price of $3.40 in 1979 and $4.03 in 1980. Figures for Point Judith and Newport are not as detailed but indicate a favorable relationship between catch and value for 1978.[32] In 1979, the Point Judith Cooperative had sales of approximately $15 million dollars.[33]

Up to this point, we have seen that the product has increased substantially over several years prior to 1980 (scallops in New Bedford an exception) and prices generally rose with the increase in catch. The situation particularly in New Bedford changed in 1980 and as was noted prices actually dropped an average of 4 cents per pound.

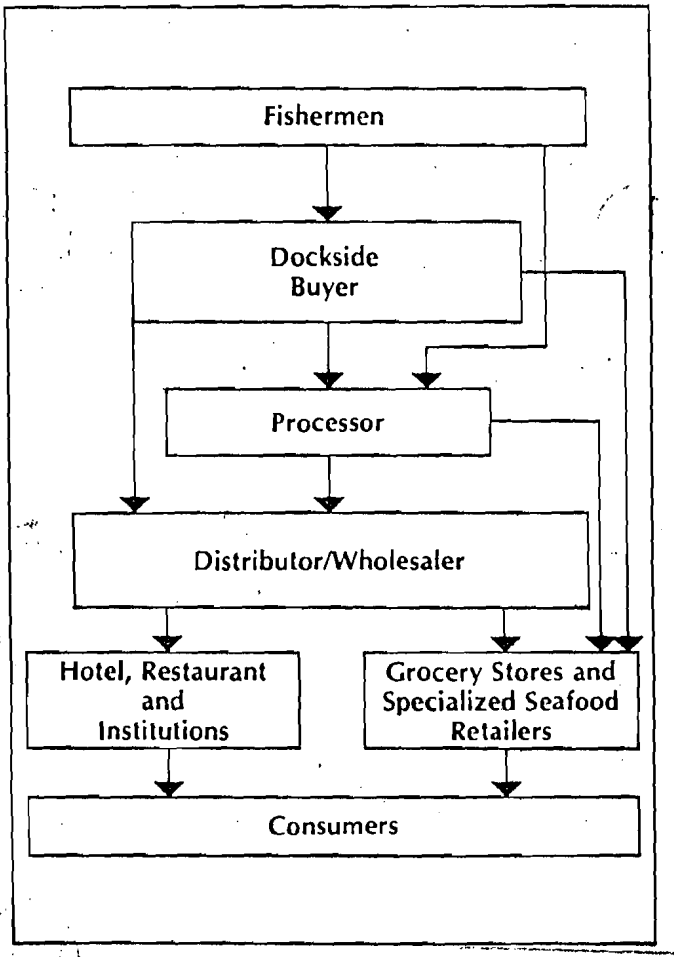
Of course, this is the ex vessel price paid to the fisherman by the cooperative, processor or distributor who bought his catch. Individual fishermen may be able to get a higher price for their harvest depending on their reputation for harvesting and maintaining a quality product.

Quality of Product

There is a direct relationship between how the fish are handled after being caught and the quality of the product when it reaches the dock. The importance of quality and the difficulty in retaining it remains a problem as the fish move through the channels to the final consumer. (See the diagram on the next page)

Unfortunately, the fisherman does not always receive the benefits from a high quality product by obtaining a higher price. This leads to continuation of archaic methods used to preserve the product on the vessel after harvesting and when it is transferred from the hold of the vessel after the fish is sold. Progress is being made in encouraging improvements but much work needs to be done. Examples of practices which directly influence quality are failure to cool the product properly on board with ice or refrigeration and using pitch forks and

Figure 1. Generalized Diagram of Major Marketing Channels for Domestic Seafood Products.



Source: Nichols, et al Marketing Alternatives For Fishermen, College Station Texas A & M University, Sea Grant College Program, May, 1980.

canvas buckets to remove the product from the hold. The author has observed this latter example of off loading at Point Judith and New Bedford.

On the positive side research and experiments in quality control is being encouraged by such organizations as the recently organized New England Fisheries Development Foundation. The Foundation's role will be discussed below in more detail in other sections of this report.

Other assistance is provided through such organizations as the Marine Advisory Service at the University of Rhode Island. A recent publication authorized by Duncan Amon is an example.

Fish Handling and Preservation at Sea: A Fisherman's Guide to Various Methods of Handling and Preserving Fish on Board Fishing Vessels

Another technique reported in the Commercial Fisheries News is to "blanch" (dip in water 190 F) the fish as soon as possible before refrigerating or putting on ice. "Blanching" destroys the bacteria and their enzymes which are responsible for most fish spoilage but does not change the appearance of the fish.[34]

The importance of quality has been documented and will be referred to as we move through the price, place and pomotion parts of the marketing mix.

Price

In economics we use the formula P X Q = T.R. where Price multiplied by Quantity is equal to Total Revenue. Unfortunately price and pricing is not so simple. The complexity of pricing must be examined from the viewpoint of the fisherman, processor, wholesaler, retailer and final consumer. For example, "retail fish prices in 1978 increased an average of 175 percent over 1967. During the same period prices for all food products increased 111 percent, red meat 106 percent and poultry 73 percent."[35]

An article in a U.R.I. Graduate School of Oceanography publication titled "The Crisis in the Fishing Industry" describes the situation in which "The New England fisherman is being squeezed on the one hand by rising fuel costs which have affected all sectors of the economy and on the other by low exvessel (dockside) fish prices."[36] However, the average price per pound in the New England Otter Trawl Fleet increased from 1977 through 1979.[37]

Prices vary considerably for fresh and frozen fish. For example, prices are monitored and published for both the fresh and frozen fish and shellfish at the Wholesale level in "Seafood Price - Current." This publication is published Tuesdays and Thursdays by Urner Barry Publications, New Jersey.

So far we have noted a retail price, exvessel price, average price per pound, wholesale price and the fact that there are two different market prices for fresh and frozen fish and shellfish.

Prices are highly responsive to changes in production. Presently, the sensitivity to price has resulted in a decrease in exvessel price as the supply increases. It is not clear that a lower exvessel price is passed through the channels of distribution to the final consumer. Since a high percentage of seafood is consumed outside the home in restaurants, it is doubtful to me that either decreases or increases in the price of seafood cause the restaurant price to fluctuate dramatically. The reasoning here is that the cost of a portion of fish is a small portion of the cost of the total meal. An exception may be in shellfish where restaurants advise the consumer that the price will fluctuate with the catch price. My cynicism leads me to hypothesize that this is essentially a gimmick to pass through price increases of lobster and scallops at a rate higher than the actual increase in price. Again this is an area which requires further research to document the actual situation.

U.R.I. Professor Andreas Holmsen presented a concise review of the exvessel price situation and other factors in an article "Why Have Landing Prices for Fish Fallen." Dr. Holmsen stated that "Prices to fishermen vary much more than the prices in the wholesale market, and more in the latter than in the retail market. This is because markups or cost of processing and distribution is given dollar or cent amount and not a percentage of buying prices."[38]

Further analysis of "New Bedford's Landings" in Table II shows that all the species listed dropped in exvessel price from 1979 to 1980 except "mixed", "swordfish", "lobster" and "scallop." "Mixed" is just that, a mixture of various species. Of course the others are high value species but in each of these cases the total pounds caught is lower in 1980 than 1979. This would imply lower supply, constant or high demand and thus higher price.

We have noted the relationship between quality and exvessel, but such things as demand, supply, type of species, general economic conditions such as inflation and unemployment and imported fish must be considered. Using the New Bedford Seafood Cooperative and an interview with its manager Brian Veasy as an example, the following comments by Mr. Veasy give insight into the problem. ""I'd say a fish dealer is doing pretty well if his net is half of 1 percent of sales," he laments. "It's so close and so tough now, I'd say many dealers have lost money in the past two years."

The Seafood Cooperative's general manager, Veasy pins his hopes for better days on a combination of factors: "fishburgers" sold at fast-food restaurants that introduce more people to eating fish: diet and health conscious consumers realizing fish is an excellent source of protein with less fat than meat; rising meat prices that make fish more competitively priced.

But throughout the conversation, he returns to the same subject: his belief

that the Canadian government and fishermen are conspiring in a grand plot to undercut the American fishing industry.

"The Canadian government is subsidizing fishermen so they can sell their catch to major markets throughout the country at significantly lower prices," Veasy said.

He contends the United States' fishing industry needs protection from the Canadians in the form of import quotas and aid from the federal government through the loosening of species quotas.

"Quotas cuts supply"- Veasy said his company could use 45,000 pounds of yellowtail flounder - a hot seller in New York City - but the present quota allows only 7,500 pounds per catch.

"There's no doubt the Canadians are out for the United States market," Veasy said. "They're selling directly to our customers" on the East Coast and the midwest. Almost all frozen fish is imported. About seventy-five percent of his fish goes to Philadelphia, New York, Baltimore, Md., with some sent to the midwest."[39]

Mr. Veasy's comments seem to be self explanatory and are relevant to the next section of this study "Place" or the processing and distribution of the product.

Place (Processing and Distribution)

In the processing and distribution of fish, the channels of distribution have been described as "hour-glass" shaped with many fishermen selling to fewer handlers and/or processors who then sell to wholesalers who supply a large number of retailers. There are variations and overlaps on this scheme due to some integration but most fishermen are not equipped to process and/or store their products. They are often forced to sell their product regardless of price or "eat it." This is an indication of the importance of the processing and warehousing

functions within the marketing channels. Matters are complicated by the fact there is both a fresh and frozen dimension to the marketing of fish and seafood.

In a report on New England Fishing, Processing and Distribution written by Susan Peterson and Leah Smith from Woods Hole Oceanographic Institution, an effort was made to find out about fish processing in 1976. 382 interview forms were mailed out to wholesalers, processors and distributors with a return of 54. Five firms from Connecticut, three from Rhode Island, twelve from Maine, two from New Hampshire and thirty-two from Massachusetts provided information for the survey. A summary of the Dealer, Processor, Distributor data for 1976 appears in Appendix III.

One of the main conclusions of this study is that "major problems in expanding the New England fishing and processing industry is in quality control, expanding species selection, and market development. Solving these problems will require additional equipment incorporating technology not now widely used in the fishing fleet and improved fish handling techniques at all stages of production."[40] The report was published in 1979, but used 1976 data. At the time of the study a number of processors were talking about expansion. Within the sample of 54 which included processors, wholesalers and distributors, 38 were processors. Listed as impediments to expansion were an uncertain fish supply (34), labor supply (19), availability of capital (11), marketing problems (9), and finally some were concerned that pollution control regulations would deter expansion (9).[41]

We will now take a closer look at Point Judith and New Bedford's processing capability. Of the two, New Bedford is far more significant. Point Judith Fishermen's Cooperative sells most of its fish wholesale to the fresh fish market. Two salesmen are employed to handle daily transactions for anywhere from 20 or 30 species to major markets in New York, Philadelphia and Baltimore.

Other than a small filleting line, no processing is presently being done by the Coop.

Pier 3, a small processing firm rents space from the Coop and services non coop members. Global Seafood is another larger processing firm which appears to be a marginal operation. A third firm, Stonington Seafood deals mainly in lobsters but has expressed intentions of buying fish.[42]

In contrast New Bedford has approximately 16 processors located in South Terminal and North Terminal on the waterfront. Expansion began in the 1970s with processors shifting to new plants in South Terminal. Since that time several have found their initially built facilities to be too small and have expanded. Two examples in 1979 were Seafood Fillet Company and Capeway Seafoods. In 1979, a fish processing plan was opened by Marder Trading Inc. in a new 60,000 square foot building in South Terminal. Two Salt Cod operations, the SFD United Codfish Inc. and New England Codfish, Inc. were added to the South Terminal. Golden Eye Seafoods, headquartered in Fairhaven has negotiated a long term lease with the city Harbor Development Commission for a three acre tract in North Terminal. Finally, the M.J. Foley Company of Boston began construction of another new plant in South Terminal in 1980.[43]

The Foley Plant is expected to open its doors by mid 1981. According to "Mike" Foley this plant will be a "cadillac".[44] This expansion continued in 1980 and signs indicate it will extend through 1981.[45]

Mike Foley is the President of M.J. Foley Company, Boston, Massachusetts, a firm that has been in the seafood industry for 75 years. He spoke on "The Role of the Seafood Processor" at the Food Marketing Institute's Seafood Seminar held in Boston on April 9, 1981. The theme of Mr. Foley's talk was the importance of "quality" fish. He asked "Who Cares" and said the answer to the question

was "fundamental to success" in the seafood industry at every level. He went on to outline "Obstacles To A Quality Fish Program" and listed lack of commitment by top management as a major problem. Poor handling can reduce shelf life from 12 days to 4 days. Brine solutions are used to disguise the quality. There are a number of different points where quality can break down in the channels of distribution because the whole fish may not be seen, the product can start through the channels as marginally fresh.

Mr. Foley presented a "Recipe for a Quality Fish Program" at the retail level. Ingredients include:

- Commitment by Top Management

This gains support for the program, facilitates cooperation, infuses dollars and creates respect and recognition.

- Fish Czar

The job description of the "Czar" who would be responsible for directing the program would be a "work horse, educator, monitor," a "nut" who is committed to his work.

- Quality Fish Purveyor

Mr. Foley believes the relationship between the supplier and retail buyer will be redefined in the 1980s. Byers will be looking for top quality and he suggested a "Report Card" for assessing the operations of the supplier. Does the buyer have a direct or indirect relationship with the vessels? Does the supplier control the vessels? If an intermediary is used? Is it Canadian or American fish? (He claimed most Canadian fish is not cleaned and gutted the same day.) Where did it come from? (He prefers Gloucester and Boston for haddock, New Bedford for flat fish and cod.) What method of catching was used? (Longline is the best, gillnetting the worst.) How long are the boats out? What are their icing procedures and is the hull

insulated? Was the fish caught in shore (poorer quality during summer months) or on Georges Bank where quality is better year round.

Handling is very important. Temperature control, bacteria control and saturation all retard decay. A temperature of 32 degress gives a potential shelf life of 12 days while 46 degrees of 4 days -- a 66% loss. Bacterial growth increases dramatically as temperature rises. Sanitation would include the environment in which the fish is processed. Such factors as cleanliness, temperature, use of uniforms, quality control, visual inspection, skills and attitude of the fish cutters and packaging. For example, fresh fish packed in tin containers allows for easier temperature control.

- In House Training Program

He referred to a "back of the store seminar," use of training films, establishing policy and procedures at the store level to maintain quality. Included would be listing requirements and he suggested a scale of excellent, borderline and inedible.

- Point of Sale Merchandising

He reviewed packaging options such as a tray pack, a vacuum pack or unpackaged. Customer acceptance can be gained with a sticker which provides the consumer with a recipe, information on nutrition, portions, etc. This would be complemented with a display of brochures on seafood for customer education. He stressed the need for personal service.

Finally, Mr. Foley spoke of pricing. He believes the consumer cares, is interested in quality and will be willing to pay more. Mr. Foley talked about target gross margins of 30 to 40 percent. This margin is quite good for the retailer who sells a quality product. Presently, the fisherman does not have this type of incentive to produce a quality product at the harvesting level.

Mr. Foley was quite persuasive on the return to the retailer for investing time and money in a quality program. He closed his remarks by telling the group his New Bedford plantwould be targeting super market chains - retailers. If Mr. Foley's sales personnel are as persuasive, the new plant should do well in the retail segment of the market. To date M. F. Foley has concentrated on the institutional market.

Mr. Foley included elements of promotion in his "Quality Program" but we now turn to an analysis of Promotion in more depth.

Promotion

The promotion side of the marketing mix is tied to consumer behavior and attitude toward fish (The industry prefers the term seafood). Market research is used to determine attitudes and if these attitudes tend to be negative or detrimental to the seafood industry action can be taken to affect change. Promotion can be used to inform and educate consumers and both directly and indirectly affect the demand for seafood.

In late 1977 the North Atlantic Seafood Association had an attitude survey conducted for them by Brand, Gruber and Company. "Sixteen groups of individuals in four locations provided a cross-section of U. S. geographic economic, and life style variations. In each location, one group included teenagers 14-18, while the other groups were adults 19 through 60. Half the samples were men, half women. The interviews included actual tasting of fish. The identity of the sponsor was withheld until the end of the interview."[46]

A summary report on the results of the study is presented in Appendix II. There is a dearth of material on the attitudes of consumers toward seafood and this study points out the need for additional research.

There is a need to promote seafood regionally and nationally. This section will examine examples of what is happening in New England and some recent

developments at the national level.

New England Fisheries Development Foundation

The New England Fisheries Development Foundation (NEFDF) was formed in late 1980 to bring together all members of the New England seafood industry. It is a non-profit organization which has a working relationship with the National Marine Fisheries Service. One of the Foundation's first tasks was to put together a 5 year plan for development of the New England fishing industry.

The foundation will coordinate Saltonstall/Kennedy funds available in New England to fund various types of development projects designed to meet the goals of the 5 year plan. Projects are carried out by contractors working under the direction of the Foundation and its industry trustees. Funds are also sought from the Economic Development Administration, Coastal Zone Management, regional development and planning organizations and private foundations. It should be pointed out that federal funds are under review and subject to cut backs by the Reagan administration.

The Foundation is concerned with improvements in fishing (new techniques to lower operating costs and increase productivity, handling methods that deliver quality and improved landed value, more efficient take - systems); processing (new packaging systems, expansion and development of shoreside facilities to watch expanding fleet capacity, new product forms for traditional and underused species, solutions to wastewater treatment requirements); marketing (product development and marketing programs that build demand for New England seafood products in both domestic and export markets, industry and consumer education projects.)[47]

We are concentrating on the Foundation's marketing efforts in this study. An example of the type of work the Foundation is sponsoring is an "International

Squid Symposium" on August 9-12, 1981 in Boston. The symposium will cover harvesting, handling and processing and the market situation. The Foundation concept seems viable and the potential for progress is achieving its goals is positive but it is too early to tell about the future of the Foundation. We will return to another example of the Foundations work below when discussing national promotion of seafood.

New Bedford Seafood Council

The New Bedford Seafood Council is an organization funded by fishermen and vessel owners in the New Bedford fishing fleet. It is designed to help promote and expand markets for New Bedford seafood products and educates the public to the value and nutrition of seafood. Its work in "Seafood Promotion" is headed by Clement E. Daley. Contact with Mr. Daley gives the author the impression of a person who believes in his product and is enthusiastic about marketing it. He has put together a promotion program which includes a media kit titled "New Bedford, Where the Seafood Comes Ashore." The kit uses attractive colors and includes a variety of information presented in brochures, decals, pens, keychains, recipes, notices of films available, and a "list of informational and educational materials about New Bedford's leading industry." It is sent out to editors and food specialists whenever the Council sponsors a Press and Media luncheon. Mr. Daley says he is being "copied to the point of plagarism" by other seafood councils who have been requesting the media kit. [48]

In addition, the Councils educational division operated by Mr. Daley's wife sends out audio visual presentations on the industry and its products throughout the 50 states and Europe. Other areas include a visiter program which provides groups andorganizations with tours of the fishing industry and marine related fields.

"In the past year the Council has sponsored several promotional activities on New Bedford seafood from publications to billboard advertising, from seafood luncheons to seafood trade fairs, to an educational component geared to schools, hospitals and other institutions." [49]

It sppears Mr. Daley is getting good return on a limited advertising budget. He says, "Our message is a simple one -- the message we are carrying is that our product is fresh New Bedford seafood, from the North Atlantic."[50]

Rhode Island Seafood Council

Rhode Island, the Ocean State, has a state funded organization to promote its seafood products called the Rhode Island Seafood Council. The Council has similar objectives to the New Bedford Seafood Council such as educating the public, developing appreciation for the nutritional value, versatility and savoriness of fresh seafood. It distributes a variety of recipe cards which are given away free at seafood counters (point of purchase). It gives demonstrations on the preparation and presentation of seafood to the food service industry as a free service.[51]

There are approximately 60 members who pay nominal dues of $50.00 per year but the main difference between the Rhode Island Seafood Council and New Bedford is that the State of Rhode Island funds the work of the Council in the amount of approximately $100,000 per year.

One other area in which the Council provides support is to encourage the export of Rhode Island seafood products. A telex is available to members who can purchse time on the machine at cost.

The Council is continuing to work to make the buyer aware of R.I. seafood products. They are participating in the Catch America Campaign which will be discussed next.

Catch America

A campaign to promote seafood nationally is being conducted in the spring and summer of 1981. It is called "Catch America - Great Things to Eat From the Seafood Fleet". It will include the cooperation of the Department of Commerce, National Marine Fisheries Service, the Food Marketing Institute (an industry lobbying group), The National Fisheries Education and Research Foundation (an adjunct of FMI) and the seafood industry. The proposed campaign was presented at a seafood seminar sponsored by the Food Marketing Institute in Boston, MA on April 9, 1981. Five industry meetings were scheduled across the country in Atlanta, GA, Chicago, ILL, Culver City, CA, Seattle, WA and Boston to prepare for the campaign.

Catch America is designed to stimulate seafood consumption and remove impediments which restrict product movement in the market place. It will provide consumers and retailers information on available products and methods of preparation and handling to stimulate demand for seafood products. It will also strengthen and develop supply networks linking harvester, processor, distributor and retailer according to Diane Boratyn, Acting Chief, Consumer Affairs, NMFS, who spoke at the Boston Seminar. The author attended the seminar and was told about a summary of a similar meeting held earlier in Chicago. Excerpts are quoted here because the article written by Frank Soltan in Supermarket News succinctly summarizes what the campaign is trying to accomplish. "The promotion campaign will include public braodcast media coverage on United States seafood.

A New York broadcast media relations firm has been hired to develop with industry and Governement a five-part series of night news network coverage over 400 stations. These will show seafood from sea to table and cover the following: New equipment on boats; fish sonar; long-liners in Alaska; fish auctions in New Bedford, Mass.; seafood industrial park in Tampa, Fla.; processing plants and air shipment; introduction of non-traditional species of fish at Anthony's

Seafood Grotto, San Diego; the ease of handling of fish at the consumer level." [52]

Note that the Director of the Campaign in the Northeast is Ken Coons. Mr. Coons is the Director of the New England Fisheries Development Foundation referred to previously. He will coordinate activities at the local level in Boston and be responsible for two other cities, Cleveland and St. Louis. Mr. Coons in his remarks at the Boston Seminar said pollock, mackerel, squid, cod, scup and ocean pout were species being considered for promotion. He also noted the breakthrough that the campaign represents by involving the Federal government in marketing.

The article refers to consumer research by FMI which will be reported on this Spring. To date, the author has not been able to get the results of the research but as was pointed out in the beginning of the Promotion section of the report, there is a dearth of material on the attitudes of consumers toward seafood. The study should make an important contribution toward meeting this need.

The Catch America Campaign is exciting in many ways. The success or failure of the Campaign will be evaluated in the Fall of 1981 after the deadline for this study. It is the authors intention to analyze the results of the campaign when the data becomes available.

Finally the Seafood Symposium in Boston featured a presentation by Salvatore Cocchiaro, General Manager of Seafood, New Boston Seafood Company, a Division of one of the Stop and Shop manufacturing companies. It is submitted here as a "case study", which will be monitored by the author in the coming months.

Stop & Shops's Efforts to Overcome the "Fresh Fish Challenge.

The following comments were made by Mr. Cocchiaro at the Seafood Seminar in Boston, "In 1977, Stop & Shop undertook a study in conjunction with the National

Marine Fisheries Service (NMFS) on shelf life extension. This was a two-store, six month test, each store different in size and volume. We found that by controlling the temperature and environment from processor to store level, we could actually double the shelf life of this product. The results were so impressive, the company made a capital investment in a test Seafood Packaging & Processing Plant.

RESULTS:

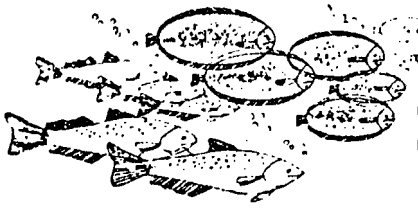
1. Retail sales increase substantially in the first year of operation, (1980) versus national trends which were in a decline for both fresh and frozen seafood.
2. Fresh quality of this program reduced markdowns and throwouts and also customer complaints.
3. Our stores enjoyed a better and more stable gross profit.
4. We were also in a position to take advantage of "gluts" or "buys" in the market place. These buys become "instore specials" or "manager specials", etc.
5. But most important, it is providing greater customer satisfaction.
   a. Has decreased the number of complaints
   b. Has increased customer confidence
   c. Has provided a much superior quality product."[53]

Even taking into consideration possible bias in Mr. Cocchiaro, this is a potential success story which could be a model for the seafood industry. It incorporates many of the areas discussed in this study in a process which attempts to maintain quality from "Hook to Skillet."

Summary of Part II

Part II presents a review of problems and progress in the seafood

industry. On balance, the author believes that progress outweighs problems. We in New England have a unique resource in the sea off our coast. The harvest, "Seafood" is from a "renewable" and "manageable" resource available to provide food for domestic consumption and export on a long term basis if it is not abused by man. Hopefully, it will be "managed" effectively in the years ahead.



Some basic research on

Seafood in the U.S.A.

A summary report on an in-depth investigation into the attitudes of the United States public about fish and seafood.

The study was conducted for the North Atlantic Seafood Association in late 1977 by Brand, Gruber and Company in a series of intensive-depth group interviews. The research involved 16 groups of individuals in four locations and provided a cross-section of U.S. geographic, economic and lifestyle variations. In each location, one group included teenagers 14-18, while the other groups were adults 19 through 60. Half of the samples were men, half women. The interviews included actual tasting of fish. The identity of the sponsor was withheld until the end of the interviews.

SEAFOOD U.S.A.

Some findings and conclusions of the Brand, Gruber research.

FISH.

"Virtually everybody" believes that fish is "better for them" than meat.

When fish is well made, it is perceived to be highly desirable in terms of taste. Many people think it is at least as good as meat, and many think it is better than meat. It is perceived to have low fat (at least low dangerous fat).

It is perceived to have a high level of protein (better than meat). It is perceived to have no cholesterol problem.

A TWO-THIRDS PREFERENCE IN EATING OUT.

Two-thirds of the individuals interviewed said they "would order fish tonight" if they were going out to eat.

(A brief explanation. The study excluded only people who said they would NEVER eat fish—less than 15% of those called. This means that almost 60% of ALL individuals would order fish "tonight".)

Obviously, not all these people would order fish if they went out. They explained this in terms of restaurants that had no fish, or were perceived not to have "good" fish, in which case they would defer eating fish.

WHY PEOPLE WANT FISH.

This is a complex question. The replies centered on three areas.

- First, a general feeling that fish was "good eating".
- Second, an increasing awareness that fish was "good for you".
- Third, the quest for "variety—for something different". The preponderance of enthusiasm for "eating fish out" had a great deal to do with the fact that it was not served as often at home as most people would like, for reasons explained below.

EATING OUT VS. EATING AT HOME.

Most people felt that they could not buy fish at the supermarket as good as they found at restaurants, and most women felt uncomfortable cooking fish. They "don't know how" to cook fish well. They were also concerned with the "fish smell" that occurred when frying fish at home. The study confirms industry figures that show two-thirds of the fish eaten in this country is eaten out. (This is almost the reverse of almost all other foods.*)

WHERE PEOPLE LIKE TO EAT FISH.

These positive answers may be expected.

- First, a restaurant known for its seafood.
- Second, any "good" restaurant that has a variety of seafood dishes on its menu.
- Third, any restaurant where the menu indicates a specialization or "pride" in seafood—for example, a seafood "specialty of the house".
- Fourth, the batter dipped fish & chips fastfood units—which are perceived to have good food for the money.

On the negative side, these things made people turn away from fish.

- A large menu with only one or two fish dishes on it.
- A menu which identified fish dishes generically—such as "baked fish", "fried fish" without any description.
- There were some negatives expressed about places serving "only breaded fish"—and cafeterias where fish is "piled on steam tables".

THE MENU: PITFALL & POTENTIAL

We showed a number of

*The research does indicate a very strong retail seafood opportunity with effective marketing.

menus to our groups. Some very nice menus turned people off as far as fish—because they simply said "broiled fish" or "breaded fish".

We tested other menus, and found this type of copy adding significant appeal:

> ***Our Specialty***
> ***DELICATE FILET OF NORTH ATLANTIC SOLE***
>
> We take pride in serving one of the world's true eating pleasures—the firm, delicate, white-fleshed fish that provides gourmet pleasure, sauteed in a delicate butter sauce.

> ***OUR SPECIAL NORTH ATLANTIC COD***
>
> Firm, flaky, white-fleshed fish from the icy clear waters of the North Atlantic, topped with our favorite crackercrumb dressing, baked, and finished off under the broiler for a superb eating treat.

People who never had Cod made this way before are absolutely certain they will enjoy this dish. Even people who were not fish afficionados indicated a strong disposition to try.

The study shows that many people have a great deal of insecurity, even incompetence, in handling a menu. They are unsure, and are looking for an indication that the management is "proud" of a particular dish. The more that is said about it, the prouder management is perceived to be. **This assurance of operator pride is particularly important for fish dishes.**

Interestingly, people seem to be more "influence-able" with regard to a fish dish than others. In a test menu, strong "selling phrases" for steak or roast beef were perceived to be "advertising puffery", while write-ups for fish were perceived to be informational.

CONSUMER KNOWLEDGE-ABILITY.

It is amazing how little people know about fish.

The higher the socio-economic level, the greater the knowledge of fish and the greater the variety of fish the individual will have tried. People need help in understanding species.

Most people had never thought of the distinction between "warm water" and "cold water" fish. Many latent perceptions emerged, however, in discussion. **Cold water fish** were perceived to be "meatier" and to have "a firmer flesh". When people are told that cold water fish are better, they believe it. It seems right, it seems logical.

NORTH ATLANTIC.

North Atlantic is closely associated with the concept of cold water. **The desirable perceptions—of firm, better fish—are substantially greater when "fish from the icy cold waters of the North Atlantic" is used descriptively.**

In short, the menu is the key to seafood sales.

FRESH VS. FROZEN.

Most people feel that frozen fish is not as desirable as fresh. Many know that the fish they get is often not fresh, however. They preferred not to think about it—or about the fact that the "fresh fish" might not have left the water a few minutes before they sat down to eat. This is a sensitive area, but we believe that desirability of good **frozen** fish can be merchandised. The problem seems to be that no one has attempted to tell this story. People seem willing to be convinced.

(Other current research shows that people are concerned about how food tastes rather than whether it is fresh or frozen: they are "resigned" to increasing use of frozen.)

CHILDREN.

Most enter the fish-eating group via fish & chips or fish sticks at home or school or the fastfood fish sandwich. These foods are socially acceptable, and teenagers like them. It appears that young people are "getting into fish" at an earlier age than their parents did.

HOW FISH IS SERVED.

The younger people uniformly like fried fish. Many older people do, too. But a number of adults questioned the amount of fried foods they were eating, and expressed a desire for "non-fried" fish. When we indicated that this might cost 25-30¢ more for a sandwich, and significantly more for a "non-fried fish" dinner, they said it would be worth it. This is difficult to quantify.

One brief quote from Milt Brand, who headed the research team and is not noted for overstatement. "I think the results were downright exciting, and the seafood opportunity fantastic. I have done hundreds, in fact thousands, of studies and it is exceptional that such strikingly positive opportunities show up."

HOW MUCH FISH.

We served four different kinds of North Atlantic frozen fish to everyone, much of it to people who had just finished lunch or dinner! Over three-quarters of the people cleaned their plates—a remarkable commentary on their liking of good fish. Most said that if they could get good fish where they work or where they go out to eat, they would certainly order it. They might even "eat it every day"

A note on Brand, Gruber and Company. This firm has won a national reputation for the quality of its research, particularly in the focus interview area. Brand, Gruber numbers among its clients half a hundred of America's largest corporations, including most of the major food companies in the country.

The North Atlantic Seafood Association will be happy to provide seafood serving suggestions for your use. Write: 1220 Huron Road, Cleveland, Ohio 44115

North Atlantic Seafood Association

add more North Atlantic FISH to your menu, the one food that folks go OUT to EAT

APPENDIX III

Dealer, Processor, Distributor Data for 1976

Type of Plant	No. of Cases
processor	38
wholesaler	8
distributor	5
retailer	2
Type of Product	
fresh fish	27
fresh lobster, shellfish, and crabs	7
frozen fish	24
frozen lobster, shellfish, and crabs	1
canned human consumption	5
canned-non-human consumption	2
cured-meal, oil, solubles	2
Type of Market	
local	30
regional	27
national	28
exports	11
Expansion Plans - Products	
frozen fish	12
fresh fish	9
canned goods	3
flatfish & groundfish	6
swordfish	2
others	13
Expansion Plans - Facilities	
additional processing plants	18
distribution systems	14
processing frozen blocks	10
fishing boats	7
retail outlets	9
restaurants	5
other	3
Expansion Problems	
fish supply	31
labor supply	19
capital	11
market demand	9
pollution control	9
other	4
State of Plant Location	
Massachusetts	32
Maine	12
Connecticut	5
Rhode Island	3
New Hampshire	2

Source: Woods Hole Oceanographic Institution, New England Fishing, Processing and Distribution, Susan Peterson and Leah Smith, March, 1979.

Footnotes

1. U.S. Department of Commerce, U.S. Ocean Policy in the 1970's: Status and Issues 1978, P III-1.

2. Sullivan, Tim, "Development of Canadian Fleet Affected Prices In U.S. Market," National Fisherman, November 1980, P. 44.

3. Ibid, P. 59.

4. Op cit III-3.

5. United States Department of Agriculture, Economics and Statistics Service, Food Consumption, Prices and Expenditures, Statistical Bulletin No. 656, February, 1981, P. 46.

6. U. S. Department of Commerce, U.S. Ocean Policy in 1970's: Status and issues, 1978, III-3.

7. Ibid.

8. Ibid III-2.

9. Ibid III-2.

10. Ibid III-2.

11. Ibid III-4.

12. National Fisherman, "OPtimistic Goals Blur Gains Made by 200-Mile Act," November, 1980, P. 14.

13. The Standard Times, New Bedford, Mass, February 8, 1981, P. 5-B.

14. Tarasevich, Christine, The Point Judith Cooperative: The Issue of Expansion Unpublished, November, 1980.

15. Ibid, P. 4B.

16. Ibid, P. 4B.

17. Department of Commerce, Status and Issues, III 37.

18. Ibid, P III Ocean Policy

19. National Fisherman, November, 1980, P. 14.

20. National Marine Fisherman, May, 1981, Page 5.

21. Ibid, P. 5.

22. National Fisherman, May 1981, Page 8.

23. Ibid, P. 8.

24. Standard Times, February 8, 1981, P 5.

25. Op Cit, News Release, NMFS, January, 1980.

26. National Marine Fisherman, May 1981, P. 4.

27. The Providence Sunday Journal, March 29, 1981, Page B-13.

28. Nichols, John, et al, "Marketing Alternatives for Fishermen" College Station, Texas A & M University Sea Grant College Program, May, 1980, Page 6.

29. Ibid.

30. Ibid.

31. Source Standard Times, New Bedford, Mass., Feb. 9, 1980.

32. Current Fishery Statistics #7800, U.S. Fisheries of U.S. 1978, No. AA, Department of Commerce, April 1979, Page 5.

33. Tarasevich, Christine "The Point Judith Cooperative: The Issue of Expansion," November, 1980.

34. Commercial Fisheries News, Stonington, Maine, Volume 8, Number 8, April, 1981, Page 38.

35. Op Cit Nichols, Page 2.

36. Bockstael, Nancy, "The Crisis in the Fishing Industry,", URI Graduate School of Oceanography, August, 1981.

37. Holmsen, Andreas, "Why Have Land Prices For Fish Fallen, Marine Advisory Service Newsletter, URI, 1980.

38. Ibid.

39. Sunday Standard Times, New Bedford, Mass., February 8, 1981, Page 4-B.

40. Peterson, Susan and Smith, Leah, New England Fishing, Processing and Distributing, Woods Hole Oceanographic Institution, March, 1979, P. 55.

41. Ibid, P. 47.

42. Tarasevich, Christine, "The Point Judith Cooperative: The Issue of Expansion, Unpublished, 1980, P. 3, 15.

43. Standard Times, New Bedford, Massachusetts, February 10, 1980, P. B-15.

44. Interview with M. Foley, Food Marketing Institute, Boston, Mass., April 9, 1981

45. Op Cit. Standard Times, February 8, 1981, Page 13-B.

46. "Seafood in the USA." North Atlantic Seafood Association, Cleveland, Ohio, 1977.

47. New England Fisheries Development Foundation, "Your Are Invited to Join In a Fisheries Development Program For New England Fishermen, Processors, Distributors and Retailors," Boston, Massachusetts, brochure, no date.

48. Conversation and Correspondence with Clement Daley, March, 1981.

49. Sunday Standard Times, New Bedford, Massachusetts, February 8, 1981, Page 8-B.

50. Ibid, Page 8-B.

51. The Providence Journal Bulletin, January 28, 1981, Page F-3.

52. 'Catch America', Supermarket News, Monday, April 6, 1981.

53. Speech Given to the Food Marketing Institute, Salvatore Cocchiaro, Boston, Massachusetts, April 9, 1981.

BIBLIOGRAPHY

Reports and Pamphlets

Bockstael, Nancy, "The Crisis in the Fishing Industry," URI Graduate School of Oceanography, August, 1981.

Cocchiaro, Salvatore, Speech Given to the Food Marketing Institute, Boston, Massachusetts.

Department of Commerce, Current Fishery Statistics #7800, U.S. Fisheries of U.S., 1978, No. AA, April, 1979.

Holmsen, Andreas, "Why Have Land Prices for Fish Fallen, Marine Advisory Service Newsletter, URI, 1980.

Nichols, John, et al "Marketing Alternatives for Fishermen", College Station, Texas A & M University, Sea Grant College Program, May, 1980.

Peterson, Susan and Smith, Leah, New England Fishing, Processing and Distributing, Woods Hole Oceanographic Institution, March, 1979.

U.S. Department of Commerce, U.S. Ocean Policy in the 1970's: Status and Issues 1978, Washington, D.C.

Periodicals

Commercial Fisheries News, Stonington, Maine, Volume 8, Number 8.

The Providence Sunday Journal, Providence, Rhode Island.

The Sunday Standard Times, New Bedford, Massachusetts.

Unpublished Reports

Foley, M., Interview, Food Marketing Institute, Boston, Massachusetts, 1981.

Tarasevich, Christine, The Point Judith Cooperative: The Issue of Expansion, unpublished, November, 1980.