MFR PAPER 1092

Introducing New Products Into Seafood Markets

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INTRODUCTION

The growing problem of shortages of many traditional fishery products has led the National Marine Fisheries Service to concentrate its marketing programs on the development of underutilized fisheries. The work involves more than 20 species that have only limited markets within the United States, or none at all, but which are available to our fishermen in good abundance. These include squid, mullet, rock shrimp, red crab, and Jonah crab, among others. Additionally, improved utilization of the better known species is being sought through more efficient processing and new product forms.

The total effort is classifiable as "new product development" for fisheries. Experienced food marketers will readily testify to the difficulty, generally, of winning a permanent place in the market for new food products. Fishery products are no exception. This paper introduces the scope and complexity of new product development and acquaints readers with the marketing environment in which new product development from underutilized species will take place.

This material was originally presented by the author at the Symposium on Marketing Opportunities for Underutilized Species held by NMFS in Oxford, Maryland, 6 February 1974.

STAGES OF NEW PRODUCT DEVELOPMENT

Developing, introducing, and marketing any new product is a complicated, risky task. As those in the food business well know, many new products emerge, but few "make it." Critical questions arise along the path of development and these demand answers at each step. Generally, in the case of underutilized fishery species, one critical question—"Is there a need for the product?"—has been answered. We have observed a strong and growing demand for seafood products. Concurrently, we have become painfully aware of increasingly short supplies of the traditional items. Thus, in the sense that the underutilized species represent new fishery products the answer is, "Yes, there is a need for these products."

Another question, that of product form, also requires close attention in the development process. Beyond this, answers are needed for the crucial question of where the best markets are located. Then, it is time for the acid test—market exposure through test marketing, or direct entry.

One leading food manufacturer follows a six-step procedure in new product development, and this methodology, or something akin to it, is applicable to underdeveloped seafoods.[1] Initial activities concentrate on the development of a product concept, which answers questions related to "need" and "design." In this stage there is a continuous dialogue between the marketing experts and the food technologists. The marketing men are in constant touch with the needs and desires that surface in the marketplace. The technologist is uniquely equipped to translate this need into practical design.

The new ideas are exposed to consumers, and this is followed by research and analysis of the characteristics and potential scope of the market. Research leads to the development of prototype products and it is then necessary to develop a "marketing mix," or decisions on name, promotion, and pricing. Finally, the stage is reached for test marketing or for direct entry into the market (Fig. 1).

MARKET TESTING—THE FISH CAKE EXAMPLE

Marketing specialists and food technologists of the National Marine Fisheries Service continually are engaged in the various steps of new product development. NMFS marketing personnel, for example, assemble and distribute the information and analyses that are basic to marketing decisions industry must make. In a recent effort, NMFS marketing personnel and technologists joined forces to conduct an extensive survey of user reaction to a new comminuted fish cake product being developed in NMFS laboratories. This new product was the result of a process that features meat-bone separation and makes it possible to transform a much higher proportion of raw fish into marketable products than is now the case. This is particularly true of certain of the more abundant species, such as croaker and whiting, which do not readily lend to filleting.

The product concept and succeeding stages in the development of comminuted fish cakes were worked out in a close liaison among NMFS technologists, NMFS marketing specialists, and industry. Fish cakes, of course, are not a new product. But the novel concept in this instance was to apply a new technology to the manufacturing of fish cakes that would allow use of underutilized species and improve the yield of usable product from the more traditional species.

Figure 1.—Steps in New Product Development

1. Product Concept Developed
2. Consumers Consulted for Reactions
3. Potential Scope of Market and Existence of Competitive Products Determined
4. Prototype Product Development and Evaluation
5. Marketing Mix Developed
6. Test Marketing or Direct Entry to Market

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[1] "Accent on Innovation," *Frozen Food Age*, August 1973

When the laboratory work had progressed to a point where a prototype was ready for exposure, the NMFS marketing specialists organized a market test among food service operators in 10 large market areas.[2] Ninety firms were contacted, and seventy-three responded by trying the sample product and noting their reaction on a questionnaire survey form. The high response rate in itself was testimony to the "need" for the new product, and also reflected the fruits of liaison between industry and government in fisheries product development.

This survey and others like it tell NMFS researchers and industry whether they are on the right track—or whether or not it would be wise to stop the train. The cited fish cake survey yielded a positive (although not spectacular) reading. It also provided useful guidance for price and product form decisions (Fig. 2).

Figure 2.—Major Findings of NMFS Comminuted Fish Cake Survey

1. **43% of all Respondents Willing to Purchase Product**
2. **Improvement Needed in the Texture of the Cakes**
3. **3-Ounce Cake Would Best Fit Food Service Requirements**
4. **Acceptable Price Levels Were under 60¢ per Pound for School Lunch and over 60¢ for Other Food Service Outlets**

THE "MARKETING BILL"

Research and development are important marketing tasks. But marketing of both old and new products also involves a host of other activities that start from the time a raw material is fashioned, packaged, and otherwise transformed into a product for consumption. These are the functions that build up the so-called "marketing bill," and they include, among others, transportation, storage costs, promotional and sales costs, and, of course, distributors' margins. These functions, in aggregate, are costly, and they represent a considerable portion of the final cost of a product to a consumer. As Figure 3 shows, the complex function of marketing frozen shrimp in 1972 accounted for 39 percent of the average retail price. This was slightly more than the cost of the raw material and much more than the direct processing costs. It is, therefore, important in new product development to be able to assess accurately the full marketing bill, from the research and development stages to the final consumer.

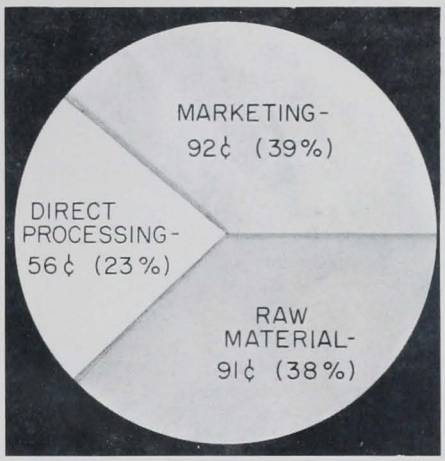

Figure 3.—Buildup of average retail price ($2.39) of frozen shrimp, 1972. Figure is based on estimates in "Economic Analysis of Effluent Guidelines, Seafoods Processing Industry," Environmental Protection Agency, Washington, D.C., October 1973. "Marketing" includes product development, transportation and storage, promotion and sales, and distributor's margins. "Direct Processing" includes direct labor, plant overhead, and processor margin.

SEAFOOD MARKET'S UNIQUE CHARACTERISTICS

The forerunner of success in marketing is a full understanding of the markets or, if you will, "where the action is." In seafood markets, the "action" appears to be concentrated in the institutional trade. According to a survey by *Quick Frozen Foods*, 62 percent of frozen seafoods distributed in the United States in 1972 went to restaurants, institutions, and other food service operations, and only 38 percent was distributed through retail outlets.[3] The figures relate to total poundage. By way of contrast the institutional trade received only 26 percent of frozen poultry products and 40 percent of the volume of all frozen foods distributed in the United States (Fig. 4).

BROAD BUT NOT UNIFORM PRODUCT LINE

The range of seafoods marketed in the United States covers a large number of products. The broad product line has advantages—it can open more doors. But, the marketing is made more complex, because each product in the line has unique characteristics. This is especially reflected in the variegated distribution pattern. For example, over 90 percent of

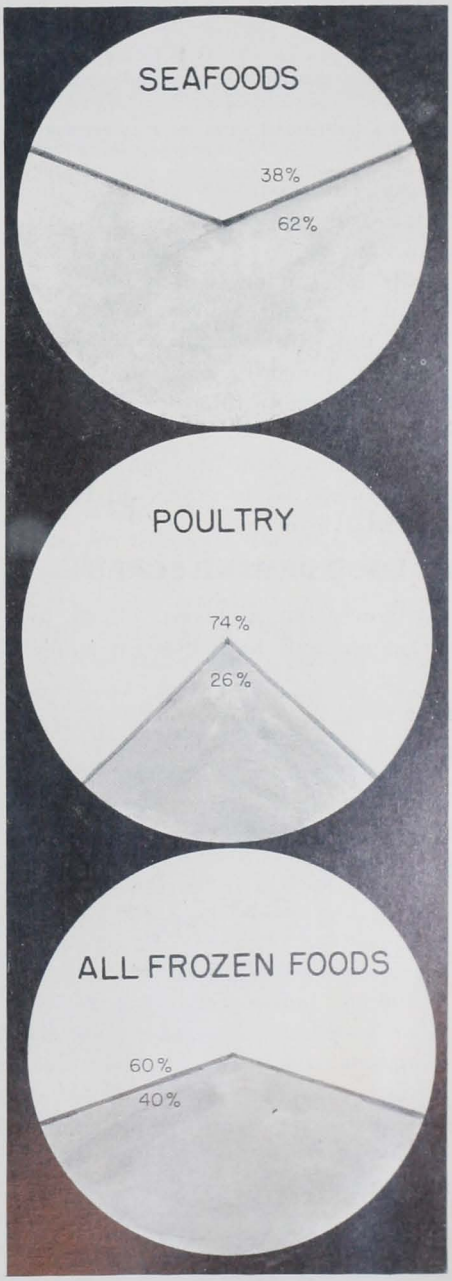

Figure 4.—Retail/institutional shares (of total poundage) of frozen foods distributed in the United States, 1972. From "1973 Frozen Foods Almanac," *Quick Frozen Foods*, December 1973. Dark portion indicates institutional shares; white slice shows retail shares.

[2]For a complete report, see: Morehead, Bruce C. 1974. A Report on the National Marine Fisheries Service Comminuted Fish Cake Survey. *Marine Fisheries Review* 36 (5): 34-37. MFR Paper 1065.

[3] "1973 Frozen Foods Almanac," *Quick Frozen Foods*, December 1973.

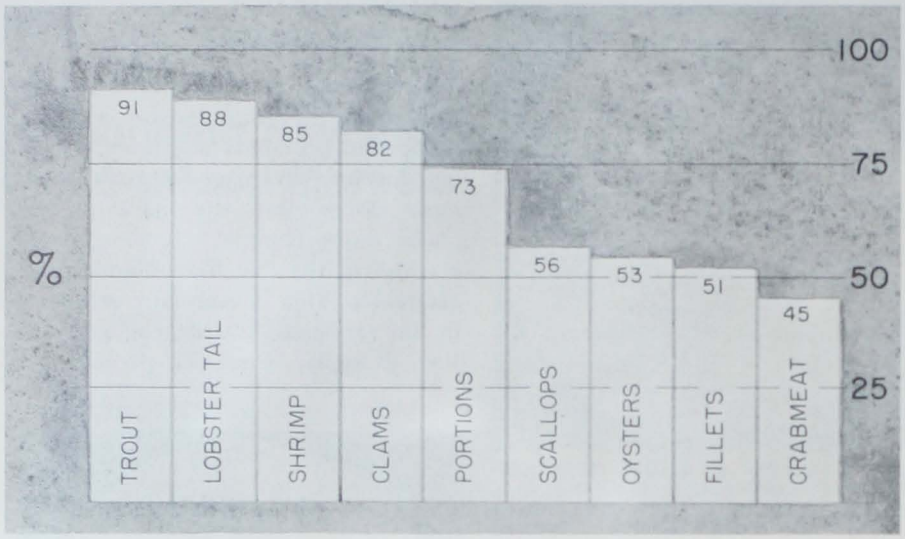

Figure 5.—Institutional sales as a percentage of total poundage, 1972. From "1973 Frozen Foods Almanac," *Quick Frozen Foods*, December 1973.

frozen trout apparently goes into the institutional market (Fig. 5). Obviously this is mainly a restaurant item. On the other hand, frozen fillets, in general, are split almost evenly between the institutional and retail trades. It should be clear then, that there is no general rule for identifying seafood markets. Some varieties find the best movement through institutional outlets, while others do better at the retail level.

SEAFOOD DEMAND SOARS

Whatever the problems, efforts to market seafoods have brought ample reward. Seafoods are in heavy demand in the United States, and the picture for market development of the underutilized species is especially bright. The dollar volume of frozen seafoods sold in the United States more than tripled between 1962 and 1972, according to *Quick Frozen Foods*. The increase was 235 percent. Only the prepared foods category had a higher proportional increase in dollar volume over the period. By way of contrast, frozen vegetables increased 157 percent during the period, frozen juices only 28 percent (Fig. 6).

Their rapid rate of growth has catapulted seafoods from fifth place (in 1962) to second place (in 1972) in frozen food sales in the United States (Table 1). The value of retail sales, and sales to institutional distributors of frozen seafood, totaled $1.8 billion in 1972.[4]

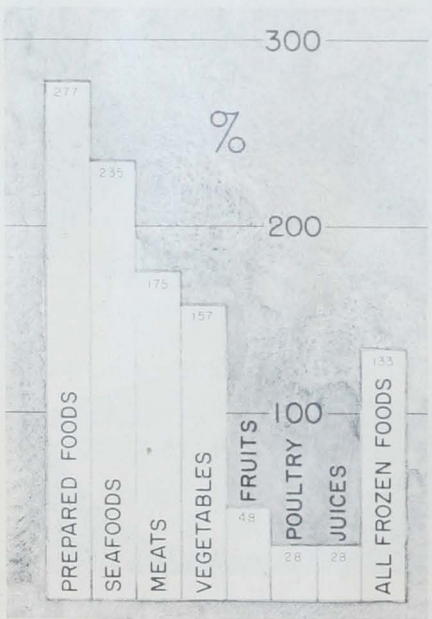

Figure 6.—Percentage increase in dollar volume of major frozen food categories, 1962-1972. Computed from data in "1973 Frozen Foods Almanac," *Quick Frozen Foods*, December 1973.

SEAFOODS AND PROFITABILITY

Seafoods, as we have noted, lean toward the institutional trade. Nevertheless, a considerable volume of seafoods moves in retail channels. And, it is likely that retail sales have not approached their potential. In 1972, retail sales of frozen seafoods amounted to $627 million. But, when you examine the high profit performance of seafoods in retail markets, it is surprising that the figure was not higher. Profit incentive to stock and

[4]Ibid.

Table 1.—Ranking of dollar volume (in millions of dollars) of major frozen food categories.[1] From "1973 Frozen Foods Almanac," *Quick Frozen Foods*, December 1972

	1962		1972	
	Frozen Food	Value	Frozen Food	Value
1.	Poultry	$948	Prepared	$2,692
2.	Prepared	714	**Seafood**	**1,777**
3.	Juices	654	Vegetables	1,492
4.	Vegetables	594	Poultry	1,214
5.	**Seafood**	**529**	Meat	965
6.	Meat	347	Juices	842
7.	Fruits	174	Fruits	258

[1]Value of retail sales and sales to distributors.

market seafoods at the retail level certainly has not been lacking.

According to a 1973 survey of frozen foods performance in an eastern supermarket chain, seafoods came out as a top contributor to profit in frozen foods cases.[5] Whereas seafoods occupied less than 6 percent of the total case space of the stores surveyed, they accounted for 13 percent of the total gross profits (Fig. 7). Only blanched vegetables accounted for a higher proportion of the total gross profit, 13.6 percent, but to do this they required 10.8 percent of the case space. Some major frozen food items are notably less profitable to handle. For example, potatoes require nearly the same amount of space as seafoods, 5.7 percent, yet deliver only 2.7 percent of the gross profit. Cakes

[5]"18th Annual Frozen Food Age Survey," *Frozen Food Age*, August 1973, conducted in Kings Supermarket, Inc., Irvington, N.J.

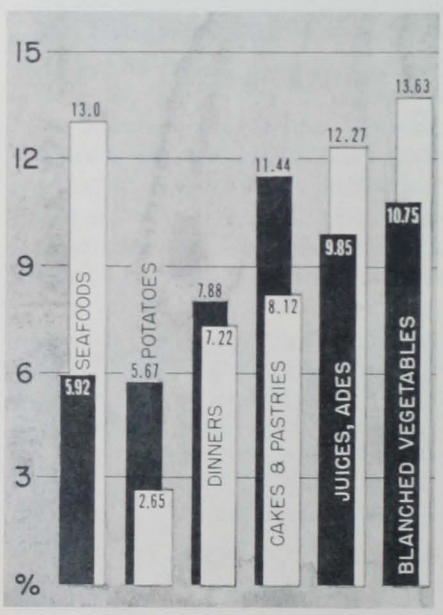

Figure 7.—Comparative performance of major frozen food categories, 1973 survey, from *Frozen Food Age*, August 1973. Black bar represents percent of total case space; white bar shows percent of total gross profits.

and pastries require nearly double the case space used by seafoods, but cakes and pastries account for only 8.1 percent of the total gross profits. Why is it then that retail sales are below potential? Among the important reasons is the shortage of traditional seafood products, which underscores both the need and the bright outlook for development of underutilized species.

VARIED PROFITABILITY

Not unexpectedly, the performance of individual seafood items in frozen food cases is mixed. So-called "sizzlers" deliver anywhere from 18 to 30 cents gross profit per square inch of case space they occupy. On the other hand, there are some real "fizzlers" in the group. As Table 2 shows, some of the latter contribute only between 1 and 3 cents gross profit per square inch case space. And there is also a middle position, for example, P&D shrimp in 16-oz packages which deliver 6.4 cents gross profit per square inch.[6] The low profit items are also low in turnover, signaling weak demand for some product types. If nothing else, this underscores the need for careful research and development for the new products forthcoming from underutilized species.

Table 2.—Sales performance—representative varieties of seafoods, from the "18th Annual Frozen Food Age Survey," *Frozen Food Age*, August 1973.

Seafood varieties	Sq in case space	Unit sales/ sq in	Gross profit/ sq in
"Sizzlers"			
Flounder fillets	324	$0.46	$0.177
Fillet of sole	378	.59	.229
King crab meat	300	.65	.258
Snow crab meat	270	.77	.300
"Fizzlers"			
Clam sticks	455	.07	.010
Breaded oysters	280	.04	.012
Hard crabs	120	.01	.005
Shrimp cocktail	528	.06	.031
Fish cakes (16 oz)	462	.08	.016
"Middlers"			
Cooked shrimp (8 oz)	532	.19	.068
Shrimp, P&D (16 oz)	1,540	.07	.064
Perch fillets	324	.21	.055
Fish sticks (14 oz)	560	.19	.042

COMPETITION, BUT A BRIGHT PERFORMANCE

Seafoods clearly square off well with other frozen foods, but the competition for space and sales is keen.

[6]Ibid.

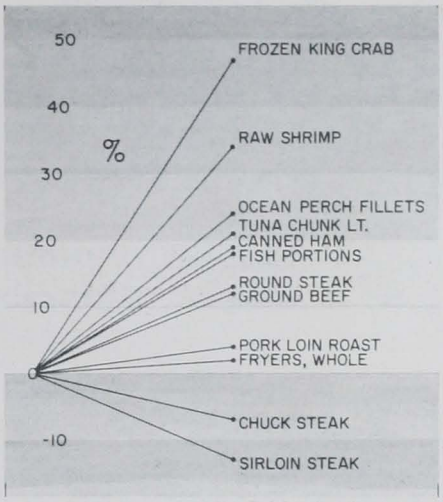

Figure 8.—Changes in retail prices, supermarket survey 4 April 1973-10 January 1974, by the Market Research and Services Division, NMFS.

Table 3.—Performance of seafoods and other major frozen food categories, from "18th Annual Frozen Food Age Survey," *Frozen Food Age*, August 1973.

Food Categories	No. of items	Unit sales/ sq in	Gross profit/ sq in
Seafoods	48	$0.16	$0.061
Potatoes	24	.13	.031
Prepared vegetables	85	.27	.027
Blanched vegetables	75	.36	.035
Fruits	13	.21	.032
Juices, ades, drinks	35	.47	.037
Meat	5	.09	.034
Poultry	5	.09	.039
Pot pies	17	.15	.024
Dinners[1]	54	.13	.025
Specialties	337	.13	.023

[1]Includes 12 seafood dinners.

The survey that supplied the performance data cited above covered 693 frozen food items, among which were 48 individual seafood products. Aside from the large number of competing products, however, seafoods face stiff price competition in a volatile food market.

In the spring of 1973, shortages of meat and poultry and their high prices contributed to a surge in demand for seafoods. As expected, prices for seafood were firm and rising. The NMFS marketing team tracked the price changes in seafoods and meats from the spring surge, and watched the price advantage seafoods were enjoying shrink. On 10 January 1974, prices of some meat items were only moderately above or considerably below prices in effect on 4 April 1973 (Fig. 8). Seafood prices on the other hand were substantially higher than they were at the beginning of the period. Meat prices, of course, will continue to change, as will the price of seafoods. But these changes illustrate the seafoods' exposure to price competition. This is an important point to keep in mind when introducing new products from underutilized species.

It is apparent, however, that whatever obstacles must be surmounted in the distribution of seafoods, the effort is rewarded in seafoods' high performance in markets. Referring again to the supermarket survey, seafoods were the top profit performer in the stores' frozen food department, returning overall 6.1 cents gross profit per square inch. The runnerup, potatoes, returned only 3.1 cents gross profit per square inch of space (Table 3). And, to add substance to the profitability picture, it is also a fact that seafoods were among the leaders in weekly dollar sales and total dollar gross profit. In dollar sales, for example, five of the fifteen leaders were seafood items and six of the fifteen leaders in weekly dollar gross profits were seafoods. In fact only various orange juice items outperformed seafood items in these measures.

CONCLUSION

It can be said with strong justification that the prospects for marketing underutilized species of seafoods in the United States are exceedingly bright. Once the necessary spade work is done in product development by the technologists and marketing experts, producers of seafoods made from underutilized species can expect to enter a market where consumer demand is strong and growing, and the reception from both institutional and retail buyers will be cordial.

MFR Paper 1092. From Marine Fisheries Review, *Vol. 36, No. 10, October 1974. Copies of this paper, in limited numbers, are available from D83, Technical Information Division, Environmental Science Information Center, NOAA, Washington, DC 20235.*