

The processing of fish scrap might be developed. Lobster and shrimp fishing could undoubtedly be expanded considerably. In the past an experiment has been made with the smoking of a small saltwater fish, the masbargo, related to the mackerel family, which is sometimes found in large shoals near Bonaire. The experiment was done in Europe, because there was no suitable smoke house available at that time in the Netherlands Antilles, and presumably due to this the experiment failed. It is almost certain that if the processing had been done locally the outcome would have been different.

It may be expected that line fishing, for instance for red snappers (pargo) could be expanded. Red snappers are in great demand among the population. The growing of turtles and sponges undoubtedly offers possibilities. The shipping connections between the islands should be improved.

The economical development of the fisheries should be preceded by scientific investigations, which should show where the fishing can be done, in what way, and which catches may be expected. The groundwork for this problem has already been laid, but some studies must be made of the nature of the fishing grounds for immediate guidance to the fishermen.

The question now arises: In what way should the development be carried out? Although the results of the investigations made thus far suggest the possibility of a fair-sized and remunerative fishing industry around the Netherlands Antilles, the fact should not be ignored that it does not automatically follow that this expectation will be realized. A recent example is the case of the attempted development of fisheries around the Seychelles (a British group of islands Northeast of Madagascar). This project was recently stopped because, in spite of the rich fishing grounds reported by investigators, the result did not live up to predictions.

In underdeveloped countries where the population is not yet used to different varieties of fish, there is always danger of a lack of a market. Outlets must be established for the fish which are caught. If there are no such outlets, any development is doomed from the start. There are two approaches to this problem. One of these is that fishing grounds should not be exploited until there is a sufficient guarantee of sales for all products. The other holds that the fishery should be developed, after which markets will be found more or less automatically.

No doubt fishing vessels of the Caribbean countries will, in due time, fish where they have the chance of success, and it seems certain that the Netherlands Antilles will contribute its share to this development, thanks to the untiring efforts of the people of these islands and the foresight in this respect of the Government of the Netherlands Antilles.

Some Preliminary Observations Relative to a Study of the Marketing Problems of the Florida Fisheries

CARTER C. OSTERBIND

Bureau of Economic and Business Research, University of Florida

Introduction. Although little research has been done on the economics of fisheries, especially in regard to regional or local problems, and although our marketing research on Florida fisheries problems is essentially an initial under-

taking, economic research must be intimately related and kept in due proportion to research in other fields important to our total knowledge about fisheries. For marketing research to be most fruitful in giving help with the marketing problems, research dealing with other aspects of fisheries needs to be not merely continued but to be carried out on a much more expanded basis. It is not useful to study the means of achieving the highest economic use of a resource if we do not know the quantity and quality of that resource which nature can supply. For example, plans to develop a more extensive market for mullet through advertising and improved marketing practices, which depend on the adoption of new methods of catch, will not result in the most economic use of resources if the new methods of catch either are not feasible or if increased catch will exhaust the supply of mullet. Ecologists indicate that at present we know little about the fisheries resources of the vast South Atlantic and Gulf areas. Thus, a key question is, what volume of catch is to underlie plans to improve the marketing and distribution of Florida fishery products? The answer to this depends not only on additional knowledge about factors determining the quantity and quality of the resource, but all factors entering into the economic and engineering feasibility of the employment of new methods of catch.

Because of the broad sweep of fisheries problems, it is desirable to bring to bear the knowledge gained from a number of diverse fields of investigation if the proper identification of the problems is to be made. For this reason, it is deemed important to this discussion to deal briefly with the research approach and method that appears appropriate to the search for problems in the fisheries industry.

Marketing research is usually oriented from the individual firm or industry point of view. It is one aspect of what may be called applied economic or business research. Applied economic or business research, from the firm or industry point of view, is carried out, in most cases, within a frame of reference somewhat as follows: Given the present business conditions, the present state of scientific and technical knowledge, and our existing type of economic organization, are individual firms and the industry as a whole using good marketing methods, producing the best product possible, organized and financed on a sound basis, and in general engaged in good business practices?

This view of the problem tends to direct attention only to those adjustments or changes in business practice that are consistent with the ownership or management interests of individual firms and, in some instances, groups of firms. A viewpoint circumscribed in this manner must deal realistically with the incentives to innovations in production and marketing. Laboratory demonstration of new or improved techniques developed by fisheries engineers, or of new findings by special technicians, ecologists or food chemists is not enough. A businessman normally will not invest his money in one type of enterprise if he has more profitable alternatives readily at hand. In fact, our preliminary examination of Florida fisheries reveals in some instances a process of disinvestment by operators who either find it expedient not to maintain equipment or find it desirable to withdraw gradually from boat operations.

Preliminary Observations About the Problems of Marketing Florida Fish. Our preliminary survey to discover the problems incident to the marketing of Florida fish has consisted of a review of available data and of interviews with wholesalers in many parts of the state. These interviews were carried out to obtain from those in the industry their view of the general marketing situation

and related facts. These interviews in conjunction with other information obtained to date form the basis for the following preliminary observations:

1. The individual producer (initial wholesaler), as a rule, is not identified with the product that he supplies to the consumer market; thus, bad practices in handling and shipping fish by any one producer tends to work to the detriment of the entire industry. There appears to be substantially no effort on the part of Florida producers, either individually or as a group, to create a consumer preference for Florida sea foods. The consumer has little to guide him in the form of known brand names or in the form of generally understood standards of quality to be associated with Florida sea foods.
2. With some exceptions, methods employed in catching, handling, and preparing Florida fish for shipment appear to have undergone little change in recent years, whereas many changes have been made in other areas. Wooden boxes and barrels continue as the major types of containers used in shipping.
3. The freezing and storing of excess fish as a means of combatting the over-supply problem of the producer has not proved profitable. Producers state that the cost of freezing and storing adds so appreciably to their total cost that it is difficult to sell the frozen product at a profit; and if the supply of fresh fish moving into the markets continues throughout the season at a high level, the producer alleges that he is almost certain to incur a sizable loss in the sale of his frozen fish.
4. High production costs place Florida fish at a competitive disadvantage with fish from other parts of the country as well as with other competitive products. In fact, frozen fish from other parts of the country are sold extensively in Florida retail markets. These frozen products are sold primarily by chain stores and super markets.
5. The desirably prompt sale of fish by a Florida wholesaler often depends on the availability of truck transportation. The high cost of shipment by railway express and the unsatisfactory nature of rail freight shipment has caused buyers generally to make truck shipment a condition of purchase. Some producers operate trucks, but there is widespread dependence on trucks operated by independent truckers, or in some cases by buyers. The variation in catch as well as a variation in the pattern of sales creates a problem in scheduling trucks to meet shipping requirements. Some truckers do follow a regular schedule but this does not provide an answer to the problem inasmuch as shipping needs do not conform to a regular schedule.
6. Although some producers sell a part of their fish through the Florida Fish Distributors, Inc., in Jacksonville, it is customary for all producers (initial wholesalers) to sell directly to wholesalers in the various consuming markets. Although many city wholesalers continually buy from certain producers, it is also customary for the city wholesalers to maintain relationships with numerous Florida producers. Because of this individual direct selling method, it is customary for the Florida producer to start making telephone calls to wholesale buyers as soon as he has fish to sell, and usually he will continue to make such calls until he has executed a sale. Thus, when fish are running and the producers have large quantities

of fish to sell, the city wholesalers are swamped with offers of fish from Florida producers. Under such conditions the bargaining position of the city wholesaler is very strong. It is reasonable to assume that the fear of incurring complete loss as a result of holding fish until it is not marketable may sometimes lead the Florida producer to sell at a loss because he has no acceptable alternative under present conditions. Not only is this an unsatisfactory marketing method because of the price effect, but also because the excessive use of the telephone, resulting in duplicated calls, adds a high cost to selling.

7. Although not uniformly a problem, many producers experience difficulty in maintaining a satisfactory supply of labor. The seasonal nature of the employment and the presence of more profitable job opportunities in other activities contribute to the problem. In addition to the regular seasonal unemployment, the fisherman is at times temporarily unemployed when the producers find it necessary to cut off fishermen due to temporary conditions of over-supply in the market. These conditions in the labor market work to the detriment of both the employer and the employee.
8. A number of Florida producers have expressed the opinion that it has become more profitable for them to buy fish from fishermen who operate their own boats than to operate boats and employ fishermen. This opinion has caused producers in some instances to decrease greatly the size of their boat operations and increase the size of their purchases from independent fishermen. Various types of arrangements have been made between fishermen and producers to finance boat operations. Although the change noted may be more profitable from the producer's point of view, it appears to be a concession to a marginal type of operation that offers little future opportunity for reduced operating costs.

The Role of Perspective in the Identification of Problems. Perspective is of such importance, especially in the social science field where cause and effect are so difficult to ascertain and where measurement is so difficult to achieve, that it is not amiss to make some further comment on perspective at this beginning stage of a marketing study in the field. It is not simple to direct applied research activities into the areas of greatest benefit or into the areas that will necessarily provide the greatest addition to knowledge, because this is limited by the close dependence of one area of knowledge on another. For example, the improvement of marketing methods may be limited by problems of production and what can be accomplished to solve these problems. At the last meeting of the Gulf and Caribbean Fisheries Institute, Dr. Harden F. Taylor dealt with the broad subject, "What Are the Major Problems of the Fisheries?" His very stimulating paper clearly revealed the importance of a proper perspective, and he effectively pointed out that incorrect assumptions as to what the problems are may lead readily to unfruitful results and misdirected efforts.

Viewing the matter in its broadest terms, Dr. Taylor stated the problem of fisheries as follows: "What can science do to enlarge the contribution of fisheries to wealth and welfare?" This is, indeed, a broad statement and actually the full import of its meaning requires interpretation or explanation. It appears desirable for all of us, whether we be social scientists or physical scientists, to keep within the focus of our research plans the contributions our research can make to human wealth and welfare. However, this broad guide or criterion is

not necessarily of much help in providing exact direction within various limited areas of applied research. For if we seek to direct our research efforts from too broad a point of origin, we encounter many unknowns and imponderables that we are unable to resolve in view of the present state of our understanding and knowledge. The essential point that the writer wishes to make is this: Although we should not lose sight of the broad objectives of science, or of society, it is pragmatically effective to operate on an interim basis with limited knowledge and within the framework of the established economic philosophy and economic system because that is what we must work with *now* even though greater knowledge or some improvements in the system might better promote science and social wealth and wellbeing.

That is why, as a point of origin in marketing research, we take the existing situation, and, within the framework of the market mechanism or the free enterprise system, seek to find the problems arising from the existing situation. Our question is usually this: What can the industry or the individual firms within the industry do to improve their profit or market position and in so doing contribute to higher incomes for all of those employed in the fisheries industry?

In the paper presented last year, Dr. Taylor directed attention to the role of a broad perspective to make clear that there are many elements to be considered in problem analyses and that a failure to recognize this may lead to misconceptions as to the nature of a problem. To illustrate how misconceptions as to the nature of a problem may influence activity in the field of science, he compares fisheries to agriculture. He states:

Agriculture has always been regarded as a source of wealth to be promoted in efficiency and productivity by every possible means, while the fisheries have been considered to be in danger of exhaustion and not to be promoted in efficiency but to be protected, conserved, restricted, and hampered. The consequences, at least in part, of these two opposite public attitudes are easily seen in the comparative performances of fisheries and agriculture.

This statement makes it clear that Dr. Taylor attaches no small significance to the influence of the two public attitudes on the development of activity in the respective fields. However, Dr. Taylor also makes it clear later in his paper that public attitudes both in the matter of conservation and in the matter of promotion may be rather ineffective at times. In pointing to what he considers misdirected effort in connection with certain oyster programs, Dr. Taylor suggests that the failure to recognize economic forces has resulted in much unfruitful activity. He states:

Now it is an article of economic faith that the pursuit of gain energizes business, that where the prospects of profit exist, business will find a way to produce, and if the prospects are dim or absent, the business will decline or die. It is also an article of faith that when the public demands something of which the supply diminishes, the price rises to the maximum point at which the total supply can be sold.

These two statements from Dr. Taylor's paper are quoted because they direct attention not only to the importance of perspective and to the many inter-related parts of a problem but also to the fact that the influences which he mentions may be variously effective under different circumstances. His statements as to the role of profits accord with the significant development and

growth of many types of enterprise that have been exploitive of natural resources, and there are indications that the attitude held by the general public that conservation and protection were in order did very little to hold back production resulting from the energizing influence of profits. On the other hand, the same public attitude would appear to have had the effect of removing the prospects of energizing profits by creating in the public mind false ideas which brought about measures hampering and restricting profitable operations in fisheries. Yet when steps were taken to increase the supply of oysters, Dr. Taylor points out that such steps do not appear to have been justified from an economic point of view. The complex of physical, economic, and social forces involved in fisheries problems suggests the difficulty of determining just how the various component parts of the problems should be brought together.

Although our economic faith in the pursuit of gain as a business energizer should be fully recognized, this faith may not enable us to say definitely that greater production will take place in the fisheries if it offers increased profit opportunities. There are a number of factors that condition the ease with which an industry can be entered or the ease with which a certain type of business activity can be started. It is also true that the ability to increase the size of a business organization may be limited even though it is clear to the owners that an increase in size would bring about additional profits. For example, those presently engaged in fisheries may not be able to take advantage of new engineering developments in fisheries if to do so requires large capital outlays. Or increased profit opportunities may still not be as attractive as real estate speculation or, possibly, investments in motor courts or even in for-hire sport-fishing boats. It is necessary to look at an economic situation and see the deterrents to increased productivity that are immediately effective even though one should not lose sight of the forces that may ultimately come to bear on the situation.

If we seek to discover problems solely from a long-run or a broad social point of view, it is easily possible that we may deal with many things that are of no immediate concern to the businessman or even to the citizen. A distinction is often made between "pure science" and "applied science." In "pure science" the scientist may seek no immediate practical knowledge. His interest is to further our knowledge without considering its immediate utility, whereas a scientist who is engaged in activity prompted by immediate problems may, for example, seek to find an answer to a situation confronting a particular area or a problem confronting a particular group of producers. It is evident that the problems of scientists with these different points of view may be essentially different, and it is also true that the scientist who seeks to cope with special problems incident to production may have an outlook entirely different from that of the businessman. Marketing research starts in the mire of a complex of existing imperfect situations and examines the economic effects of the state of technology, the conditions of organization, operation, and production, the existing capital investment in the enterprise, and the incentives to capital investment. Once the entire situation is examined in terms of its various functional characteristics and purposes, the market research should proceed principally with an industry and firm point of view. Thus, the market analyst is interested in the products produced and sold, the organization and structure of the industry, the relationship of the industry to other industries, the scope and character of the market served by the industry, the channels of distribution, the selling and advertising practices, and consumer attitudes.

In the main, the business viewpoint of the market analyst leads him to examine these various aspects of the fisheries activity against the background of the question: What can businessmen, individually, or as a group, do to improve their sales and profit position?

Preliminary Plans for Research. As has been noted, it is difficult to deal with many aspects of the problem of effectively marketing Florida sea foods until more is known about the potential yield of fisheries in waters accessible to Florida. How is the ecological system influenced by present practices? What would be the effect of extensively greater catches through the application of new techniques that are being developed by fisheries engineers? Biological scientists inform us that more needs to be known about the migratory habits of species, about populations, about acclimation and transplantation effects, about predatory habits of species, and about other things necessary to an understanding of the supply potential. These matters require extensive additional study. While it is clear that a more accurate appraisal of profit opportunities can be made by economists after the physical scientists have had the opportunity to study more thoroughly the Gulf and South Atlantic areas, it appears urgent to proceed with the preliminary study of problems of distribution and sale on the basis of the present imperfect biological knowledge.

Our present marketing research plans call for an analysis of the costs and prices of selected Florida sea-food products under present supply and catch conditions. In view of the Florida producers' apparently unfavorably cost-price position in the market, it appears desirable to look at the elements of cost incident to all phases of fishery operations. For example, if large red snapper sells in the New York wholesale market for 43 cents per pound, how much of this goes to the city wholesaler, to the trucker or carrier, to box and crate manufacturers, to icing services, to boat builders and equipment suppliers, to fishermen, and to producers? How do the cost components of the fisheries operations in Florida compare with those from other sections of the country? These are the types of questions to which we will seek answers. In 1949, the Fish and Wildlife Service figures show that the return to the Florida fisherman was 6.23 cents per pound, whereas the per pound return to fishermen in other states ranged from a low of 1.80 cents in Delaware to a high of 16.75 cents in Alabama. We need to know the significance of these figures from a cost point of view. If it costs \$3.00 per box to ship fish by truck into the New York market and if the wooden container costs \$1.00, are these costs such as to stand in the way of effective competition with other producers? It is desirable to consider questions such as these in the light of a detailed analysis of all of the costs involved in the various operations that are necessary to an ultimate sale in the wholesale market.

For purposes of our cost and price study, sea foods have been divided into four main groups: (1) salt-water fish; (2) shrimps; (3) oysters; and (4) other sea foods. Our immediate plan is to give attention mainly to group one. However, to the extent that we find it feasible to collect information about all four groups, we will do so. Our reason for placing greater emphasis on group one at this stage of the analysis is that the salt-water scale fish seems to be the Florida sea food which presents the most difficult marketing problem under present conditions of competition.

Among the data we have examined to date are the landing statistics collected

through the cooperative effort of the University of Miami Marine Laboratory, the Fish and Wildlife Service of the Department of the Interior, and the Florida State Board of Conservation. These data clearly have broad utility as basic information for analysis by the economist, the ecologist, the engineer, and others. For example, we have taken these data and analyzed the catch by month, by area, by species as a means of seeing how these elements may influence sales, employment, operating costs, and related factors in local areas. A review of these data quickly shows a number of things that are significant to an economic appraisal of some of the effects of the seasonal variation in catch. The removal of menhaden, the principal non-food variety, from the volume figures on total catch completely changes the dominant features of the seasonal catch variation. On the other hand, when volume figures are converted into dollar returns to fishermen the picture of variation is again modified. These conditions of variation have significance to an analysis of the local, the county, and the state-wide marketing of sea foods. As we examine the costs in local areas and by counties, we will uncover cost differences and similarities that may form the basis for either or both individual and group action.

We also plan to explore certain aspects of both the cost and the marketing feasibility of freezing and storing. It is appropriate to examine carefully any economic limitations to doing in Florida what is being done in other parts of the country. Such data as are available on sales patterns, marketing practices, consumer preference, per capita consumption of sea foods, and other relevant data will be utilized.

In the analysis of prices we will examine the relationships between the prices paid to the fisherman, the initial wholesaler, the city wholesaler, and the retailer. Our preliminary inquiries to obtain data have not been too fruitful, but we feel that enough is available to engage at least in a pilot study analysis. The types of questions that arise here are: What are the seasonal characteristics of prices? How do these compare with competitive sea-food and non-sea-food products? (The price relationships in certain markets of processed fish, frozen fish, and fresh fish are a part of this question.) How does geographical location and accessibility of sea foods from different geographical locations influence prices? A first step in the more effective marketing of Florida sea foods could possibly be taken within the state itself, and thus we will give some attention to marketing practices within Florida.

Survey of Household Consumer Preferences for Fish and Shellfish with Particular Emphasis on the Southern Region

WALTER H. STOLTING

*Chief, Economics and Cooperative Marketing Section,
Fish and Wildlife Service, Washington, D.C.*

A year ago the Economics and Cooperative Marketing Section of the Branch of Commercial Fisheries began working on the form of a questionnaire to be used in a national survey of United States households for the purpose of determining their fish and shellfish preferences. We were joined in this work