

Future Fishery Utilization

James A. Crutchfield¹

INTRODUCTION

I will deal, not so much with the micro-technical aspects of fishery utilization product development, but rather with the macro-aspects of it: the extent to which we can hope for expansion of the American fishing industry utilizing the resources within our 200-mile zone.

Doing that, however, I would like to express my view, as an economist, of the role of public research and development in fisheries. In the temper of these times, it is very tempting to ask: if research and development benefits an industry, why shouldn't it be carried out by the private sector? In fact, that is being said all over the government in almost every phase of activity. There are some very good reasons why this is not an adequate answer to the problem.

Industry can be expected to invest in research and development only when a number of conditions are met. The benefits have got to be clearly and specifically identifiable; they must be identifiable in such degree that the future value of the benefits, properly discounted, can be compared to the costs and the investment decision appraised. Perhaps most important of

all, no individual business firm can be expected to be active in research and development unless it can capture the benefits of that activity itself, and that means excluding other organizations from getting the benefits of the research. It is not surprising then that a lot of research and development activity, particularly the longer run, chancier type, is not undertaken by the private sector-not because it is not competent in research and development, but because it simply does not pay from the standpoint of the individual firm. But it does pay from the standpoint of society.

The research that is needed most in the fisheries field is work that is industry-wide in its application. The results of that work should be available to all participants in the industry; however, we cannot expect such extensive research to be performed within the private sector.

Furthermore, the fishing industry, structurally, is not able to support a large research and development activity. By most American industry standards, the fishing industry is made up of relatively small units, and it has a highly competitive structure; the profit margins involved are never exceptionally great. There simply is neither size nor profit margin available to support the kind of research that is done by the automobile

¹/ Natural Resources Consultants, 4055
21st Ave. W., Seattle, WA 98199.

industry or the chemical industry or others (and even these draw very heavily on public research).

There is, then, a proper role for public research and development in fishery development, complementary to and supporting private sector efforts. How many of our now fully utilized conventional fisheries would have reached the state that they have and produced the value that they have, as quickly as they have, without the work of this Center and of other institutions active in similar research and development.

FUTURE OF THE INDUSTRY

I will now discuss the future of the industry with respect to fuller utilization of resources within our 200-mile fishery conservation zone. The Magnuson Fishery Conservation and Management Act of 1976 lays down a clear mandate that we are to push ahead, as rapidly as possible, to achieve as near full American utilization of those resources as possible. In a sense, it is a Northwest problem since by far the greatest volume and value of the resources available for American development lie within the region with which we are concerned.

The targets of utilization are fairly clear. As far as traditional species are concerned--salmon, halibut, king crab, and the like--there is obviously not much in terms of increased catch levels, at least in the short run. There are, however, "internal margins" of real importance. One is the development (or, perhaps more appropriately, the application) of improved concepts and practices of

fishery management in our so-called fully developed and fully utilized species. In the case of all our resources, it can be argued that we are getting less in output, less in net dollar value, and less in employment than we could get if we were able to put into practice the management concepts that have been developed in the literature, both in the biological and social sciences. There is a lot to be done in rebuilding these stocks to their full productivity.

Even today there is room within these segments of the fishing industry for improved net dollar yield, even from fully utilized stocks. It would be a bold man who would argue that we have done all we can with respect to quality, uniformity of quality, keeping quality over time, and full development of product range from the species that we call fully utilized at the present time.

In the broader sense, however, of increased production, increased employment, and new products, the real challenge lies in the groundfish resources of the Bering Sea and the Gulf of Alaska. The groundfish resource is enormous, depending on whose lies you believe; the resource is somewhere between 2- and 3 million metric tons (less, of course, if we are talking in open Council session where somebody might be listening from overseas). In any event, the resource has an enormous potential, full realization of which would lead practically to a doubling of American fish landings. The groundfish resources are already well utilized by foreign fleets. American harvest capability clearly is rising rapidly, and even at this low state of American participation in the groundfish of the North Pacific, American fishermen have demonstrated, beyond any doubt, their

capability of matching any other nations in terms of productivity and in terms of energy efficiency--the important developmental requirement for the future.

The existing American fleet harvesting Alaska groundfish is surprisingly small. A recent study suggests that no more than about 39 to 40 vessels are actively engaged, most of them in joint venture operations; yet that small number of vessels harvested more groundfish than all the rest of the Pacific Coast groundfish industry put together, including halibut--landing something in the neighborhood of 100,000 tons this year, including the joint venture operations.

As of now, with new construction and conversion capabilities for the king crab and other vessels, a recent study estimated that we are close to being able to harvest 60% of the available yield (or would be in a relatively short period of time, if other constraints were removed). Certainly, then, as far as harvesting capability and capacity are concerned, what we do not have, we could get very quickly.

When we turn to processing capability, it is quite another story. We have practically no shore facilities for handling groundfish taken off Alaska and in the Bering Sea at the present time, and there is a record, unfortunately, of some fairly substantial failures not far behind us. A couple of factory trawler operations are doing fairly well, but only because of a number of special conditions. They are producing a product of exceptionally high quality that commands premium prices on the market (perhaps an indication of the way we are going in the future). They also catch a fairly high proportion of cod in their operations, which raises their

returns, and they are utilizing vessels that were purchased on a basis which, if it were to be matched today, would cost them at least twice as much. The prospects, then for a profitable factory trawler operation at the moment, using a new and necessarily American-built hull, would be a lot dimmer than those of the operations that are presently under way.

The most intriguing development in American processing capability, of course, has been the success of joint ventures, which have taken about 100,000 metric tons this year and are limited only by the extent to which new agreements can be reached with the appropriate authorities--the regional councils, the Department of State, and so on within the American government. The success of the joint venture is not due solely to low labor costs aboard the processing vessel, but rather to a whole series of real economic advantages in the operation itself: the fact that so much less time is spent running to and from port; the smaller crew that can be carried by a trawler fishing a joint venture operation; the lack of necessity for carrying ice or other refrigeration equipment; the ability to keep the vessel operating essentially as a tug rather than a fully-equipped fishing vessel; and the ability to dispose of waste at sea safely, without the complications that arise when it has to be handled ashore. These are not, in my opinion, unfair competitive advantages; they are very real economies of operation. Ultimately, I assume that there is no reason why this cannot be accomplished by American-at-sea processors operating in a similar mode.

Obviously we would prefer, other things being equal, that the entire operation be American from beginning to end, but at this stage of the game, joint

ventures would seem to be an extremely useful intermediate step, giving us the opportunity to learn one important part of the game (the fishing and fishing deployment part of it), giving us access to foreign markets which otherwise would be very difficult for us to utilize, and getting us into the game one step at a time. It would be highly desirable that development be continued as long as benefits are realized.

Other than that, it is fair to say that U.S. processing capability is far behind its catching capability, as far as bottomfish operations are concerned, and we do not see any change in the immediate future. What then is holding us back? The fish have been exploited for a very long period of time. The characteristics and ultimate markets for those fish are well established in commerce. Why aren't American fishing vessels and processors doing the job in larger number than at present?

The answer lies in a set of interlocking constraints on U.S. development, no one of which itself is the governing factor, but all of which tie together in making development very difficult. There are some constraints, for example, involved in product characteristics. The catches in the North Pacific will be dominated by walleye pollock and Pacific whiting (hake), both of which raise some problems concerning: 1) parasites and the necessity in the filleting operations of candling individual fillets; 2) the small size of the fish in many of the walleye pollock catches; and 3) the perishability of both of these soft-fleshed fish, relative to the type of firm flesh that we have been used to handling. Obviously, they can market a first-class product, but not without some fairly significant changes in the methods of operation.

The second constraint is transportation. God always sees fit to put fish and people as far apart as possible, and then some poor devil, called a marketing expert, has got to find an answer! Well, the marketing expert looking at western Alaskan fish and at the market lying at the present time primarily in the central and eastern United States is looking at a very high set of transportation costs. Fish are not where Alaska container line terminals are. The high peak-to-average transportation and storage capacity problem is difficult. During the summer months, when conventional species are moving in volume, it is going to be very difficult to integrate around-the-year, high volume, bottomfish operation without substantial new investment in transport facilities. But which comes first? The chicken or the egg? Nobody is going to fish for bottomfish until the industry infrastructure is in existence.

The third constraint is in finance. An industry that must borrow at roughly prime plus 2- or 2-1/2% finds it extraordinarily difficult to put money up front in magnitudes like \$10 million or so for a shoreside processing plant of moderate economic capability, between \$15 and \$20 million for a modern factory trawler built in the United States, or perhaps \$300,000 to \$500,000 for conversion of the crabbers that we probably would rely on initially.

These are big numbers and in today's financial climate, borrowing at these high interest rates now and in the future is an enormously difficult obstacle. It is not made any easier by the fact that the credit requirements of the fishing industry and the lending practices of conventional commercial

banks simply do not fit together very well. It has been very difficult for the fishing industry to tap financial markets to realize investment requirements, both long term and short term, at rates that would make it possible for it to operate.

Fourth, there are constraints in repair facilities--there are few places in Alaska where a modern high-seas trawling operation can find port facilities with appropriate repair, maintenance, haul-out, supply, and electronic services. That is going to have to develop somewhere before a fully American operation can expect to realize its full technical capabilities. With fuel prices rising the way they are, it simply is not going to be feasible much longer, if it is now, for large trawlers operating in Alaskan waters to come to Puget Sound for any kind of major service. It is also difficult to find in Alaska a port close to major fishing activities where a stable year-round labor supply can be developed, and with that labor supply, facilities for families have got to be there on a 270- to 300-day a year basis. There are a few ports like this, but very few, and they are not close to the major fishing grounds.

Most important of all, there are market constraints. Let me review some of the changes that have taken place in the markets for groundfish in the last 10 years. During the 1970's, there were a number of striking changes. One change was the increase in per capita consumption of fish, which if you break it down, is almost entirely accounted for by increases in consumption of fillets, sticks, and portions. Thus, almost all of the increase was in groundfish with very little else except a modest increase in canned tuna. There have been equally striking changes in market outlets with the

advent of what could be called, loosely, the frozen food revolution in American retailing. You now find groundfish products in frozen packaged form, branded, promoted, and very successfully merchandised, in virtually every grocery store that has a freezer. We have a whole new set of outlets in fast food chains, for which controlled portions of groundfish represent an ideal complement to the meat and poultry operation around which they grew up.

There was also a rapid run up in prices. Fish prices rose more rapidly during the period of the 70's than the consumer price index, and more rapidly than either of the major competing product groups of meat and poultry. Fish--particularly groundfish--are no longer the cheapest protein food available. They fall more in the upper or lower middle range than in the very lowest range in terms of price, and that has brought them into an entirely new competitive relationship to meat and poultry.

It is equally striking that the increase in consumption during the 70's was achieved with virtually no contribution from the American fishing industry. Almost all of the increase in per capita consumption was met by imports of frozen blocks and fillets.

Looking to the future, what can we see? Three key factors seem to stand out. None of them is particularly encouraging. Although I don't want to paint too bleak a picture, for the short run they do cast a cloud over development prospects. One is my own belief, which is open to challenge, that the big surge in per capita consumption of fish in the United States has pretty well run its course. The virgin market for packaged frozen fish in the grocery outlets and,

perhaps to a lesser extent, in the fast food outlets, is pretty well worked out. From now on, growth in per capita consumption--if it comes at all--is going to be related much more to changes in income and changes in relative prices of fish as compared to other protein foods.

The second factor is the availability of imported groundfish products at a wide range of quality differentials from extremely high--in the case of Icelandic cod fillets--down to the so-called garbage market at the lower end of the block trade. There is a lot available. We are importing bottomfish products from Canada, Korea, Iceland, Norway, Denmark, Peru, Argentina, Australia, New Zealand, South Africa, and possibly others as well. What it adds up to is a very competitive world market and in the short run, at least, there is not much that can be done in the United States, per se, to influence that world supply or world market situation. We're accustomed to thinking of our Bering Sea and Alaska groundfish resource as really huge and yet in relation to world supplies, the eastern Pacific provides less than about 22- or 23% of the world's pollock, and far less than that of the world's total groundfish supplies. There are a lot of people still willing to sell us groundfish products at any quality level that we want to mention, and they're going to be tough competitors for a considerable time to come.

The third factor and a very important one in this country, is the dominant influence of meat and poultry prices on groundfish prices. Strangely enough, the people to whom I've talked in agricultural economics are forecasting relatively stable real (i.e., inflation-adjusted) prices, for meat and poultry products over the next

decade or so, with modest increases in beef prices offset by declining real prices for poultry, pork products, and some others. It's not surprising since the technological advances still going on in poultry and, to a lesser extent in meat, are expected to offset the effect of increased energy and labor costs.

In short, we're operating in the short run with a pretty tight lid over bottomfish prices, set in part by foreign competition and, in part, by the competition of our own murderously efficient suppliers of meat and poultry products. It won't necessarily remain that way indefinitely, but for the near term, at least, we don't look for any very significant price increases in groundfish beyond those that have already taken place. I might point out that inflation-adjusted prices for groundfish products in this country have actually declined every year since 1978 so we are pretty well topped out at that level for the moment.

The longer run outlook is a good deal more encouraging. While there is a clear downward trend, as I am sure a lot of you are aware, in cod landings worldwide, U.S. consumption of groundfish in block, fillet, and stick form is still more than 50% cod. In addition, if and when recovery comes to the Western European economies, which are large consumers of groundfish, there is a good possibility that much of the competition now entering American markets will be diverted to European markets and thus relieve some of the downward pressure on prices that we've been feeling.

Finally, and perhaps most important of all, although I hate to think of it as an encouraging thing, on a world basis there have been very, very small increases in total fish landings for

the last 10 years, and I can see no way in which the supply of groundfish worldwide can continue to keep pace with world demand for groundfish. By the end of the decade then, we may well be reaching a point where groundfish prices will have risen in real terms--inflation-adjusted terms--by the 20- or 25% that probably would be necessary for an all-American operation to develop. A number of analyses of harvesting costs and processing costs have been made, some of them carried on by the Center or under Center auspices, and some by other agencies. Without exception, each has concluded that, at the present level of groundfish prices and given the price the fishermen must have for any kind of an attractive return on their own investments, there simply isn't room for the marketing and processing margin at the present time. We hope that that will come later.

Are there any ways in which we can accelerate that process and speed it up? One, obviously, is to get costs down if we can. I don't think there's any great opportunity for increasing productivity of the American fishing sector faster than it's being done. These are competitive operations by any standard. They are, however, at an enormous disadvantage in being required to purchase vessels built only in the United States. We could buy new vessels at substantially lower costs elsewhere. We could buy excellent used hulls almost anywhere in the world for perhaps half of what we have to pay for new vessels. We're also paying, by contrast with most other countries, very high duties on imports of nets, electronic equipment, and other gear and, while there's been some progress in lowering these duties, they still present a cost barrier to American fishermen.

A second possibility is to improve

yields and product ranges. The Center has been engaged in work of this type, and there is much that remains to be done. As has been pointed out repeatedly, it does make you grind your teeth a little to be utilizing roughly 20- or 25% of our bottomfish as fillets and throwing the rest away (or at best, converting it into meal) when a substantial part of what is being thrown away is perfectly usable flesh. Minced flesh and perhaps, with our own research and development or through joint ventures with our Japanese friends, surimi-type products on the American market offer long-term possibilities that cannot be ignored. The fantastic success of the poultry industry makes it clear that American consumers not only can be made to buy, but will eagerly buy, a variety of healthy, low cholesterol, tasty products that can be textured and taste-adjusted to modern American preferences, using technology which is very old in other countries of the world.

We can increase market price and acceptance through better quality control--again a long-term possibility. Possibly we can expand export markets. This is the one that everybody throws up in the air.

Let me simply point out that we do not have a very good fit between what American bottom fishermen can turn out in Alaskan waters and the requirements of the two major export markets in Japan and in the European Economic Community. In Japan, about 75% of the pollock are utilized in surimi and there's no way of interesting an American company in developing the technology, undertaking the heavy investment, and then wading through the morass of trade restrictions in trying to deal in Japan to get into the market. There is a good Japanese

market for the larger pollock but Alaskan (walleye) pollock don't fit that well because they tend to run to sizes below 17 inches. It can be done--unquestionably it will be done. As the Japanese are phased out of quotas within the 200-mile limit, the attractiveness of joint venture and other ways of accessing the Japanese market will increase. But again, it's not something that will come overnight.

The European market is even tougher, although it is a bottomfish-consuming market to a very large degree and is, at the present time, a large deficit area. The United Kingdom alone imported over 200,000 t of cod and cod-like fish last year. But the European Economic Community has embarked on a program of protective barriers, defending local industry in all primary production--in agriculture and fisheries as well. To try to get over a 15% tariff barrier, quotas, and the other obstructions that one finds in the common-market countries when you're 12,000 miles away from the market, is a tough proposition indeed.

Again, it may be done as world prices strengthen, but at the present time, it's not an attractive prospect.

The answer that most people find easiest is simply to slap tariffs and quotas on imports and to equalize costs between American and foreign producers or, if you like, to jack up prices in American markets by raising duties to the point where American producers can become effective as competitors. Neither this administration nor any of the preceding administrations have been very receptive to the idea. There are two real problems with this approach. First, American consumers and taxpayers are being asked to pay the burden for developing a new facet of the American fishery and whatever we may think of

the desirability of the jobs and incomes that would be created by doing so, there are a lot of people who are eating and paying for the fish who are going to think otherwise--and their political clout is by no means small.

Second, the studies on groundfish-demand, while they're anything but conclusive at this stage of the game, do suggest strongly that demand for groundfish products is quite sensitive to price. We're likely to find out that in an attempting to raise prices through tariff and quotas, we simply have shifted the fish business over to our competitors in meat and poultry and other protein foods, rather than increasing returns for the product of American fishermen. It's taken a long time to build up per capita consumption of American groundfish to the levels that we now enjoy. It would take a long time to build it up again if we cut it back as a result of artificially high prices. The tariff-quota approach is fraught with all sorts of political difficulties and one with very real economic risks.

It seems to me, and again this is a controversial matter on which there would be disagreement, that the situation that we face may require a basic new approach to industry structure in the northeast Pacific fishing industry. At a risk of exaggerating but to make a point, the idea of having an industry made up of people who bring fish in, other people who decide what to do with the fish that are brought in, other people who market the product that was decided upon, and so on, simply will not wash any longer--not in this kind of highly competitive, high volume, low margin operation. There is an urgent need for much tighter control of quality all the way from the boat up to the final user of the product. There is need for a

much tighter fit among fishing activity, processing, transport and storage, marketing, and distribution, than can be accomplished through the traditional decentralized type of fish marketing that we've depended on. Again, this isn't a matter of being critical of the industry structure as it stands. We simply point out that the successful marketers of groundfish products at low prices and high volumes, in general, have been of this integrated character, and some kind of development along those lines may well come.

SUMMARY

In summary, then, the extension of U.S. operations to utilize fully the groundfish resources of the North Pacific is going to come in the end. The pressure is there, the technical capability is there. Ultimately the economic barriers that I've mentioned will be overcome, but those changes are not going to come quickly, they're not going to come easily, and when they do come, they are going to come as the result of a cooperative and complementary program among industry and the University community and in very strong terms, governmental research and development activity of the type this Center has pioneered.