

Fish Consumption—Where is it Headed?

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THE CONSUMPTION OF EDIBLE FISHERY PRODUCTS in the United States is now about 10 pounds per capita per year on an edible weight basis. For a number of years the per capita consumption has remained close to this figure. What the figure is apt to be some years in the future is impossible to forecast with any accuracy. However, a good many predictions are being made about conditions which will prevail in the United States about 20 years from now—that is, in 1975. The assumptions economists have made in this connection—and projecting some of the present trends in our economy—provide a basis for discussing probable future fish consumption.

Because 1975 is almost a score of years away and a good many variable and unknown factors are involved, the chances of an accurate evaluation are not too high. Nevertheless, it should be of interest to mention those current and future developments which may be expected to affect the consumption of fishery products, even if we cannot reach a conclusion as to the eventual outcome.

Since it is not possible to assess the exact importance of the factors which influence fish consumption no attempt will be made to discuss them in any particular order.

Population, however, is usually one of the first items to be discussed. In 1975, the United States will have about 220 million people, or roughly about one-third more than now. If recent trends continue, an increase in population will require a corresponding increase in domestic production or imports, but will not, of itself, increase or decrease per capita consumption. However, the changed distribution and composition of this population could have such an effect.

For example, people are moving from farms to urban areas. Our surveys show that fish consumption is less in farming areas than in urban areas, so this is a favorable trend if those who move adopt urban customs. More people are moving to the West, the Mountain States, and the South, with the new industries being established there. Coastal Western states have a relatively high fish consumption rate, so again this should be favorable. On the other hand, the South and the Mountain States consume less fish than other areas. However, in this instance we might hope that the newcomers from greater fish-consuming areas would indoctrinate the Southerners and the Mountaineers with their fish consuming habits.

We also find that our increased population will have relatively more young people from 10 to 20, and more elderly people over 65. From a dietary standpoint, fish is excellently suited to the needs of elderly people because vitamins, minerals, proteins and fat may be obtained in fishery products almost in any degree desired. Thus, fish consumption would be expected to hold its own or increase in this group and thereby favorably affect overall consumption.

Fish consumption has increased in those schools where fish cookery has been demonstrated by Fish and Wildlife Service personnel to the school lunch supervisors. With more young people available in schools, we can expect consumption to continue to increase in this group—until all schools have had

demonstrations of the merits of fish—and of course, again to affect favorably the total consumption.

With the increase in population will come a substantial growth in our economy. The Gross National Product—worth about 410 billions of dollars this year—is expected to almost double by 1975. And an increase of well over 50 per cent in the real income per person will accompany it. Experience and surveys have shown that an increase in income does not increase per capita consumption of food products much, if any, simply because human stomachs can hold only a certain amount. However, there are shifts among foods. Generally, more of the higher priced foods are purchased, more luxury items, and more of the foods which are so advanced in preparation that they are ready to eat with little further work—foods with “built-in maid service.” And there may be larger purchases of protein foods and those abundantly supplied with minerals and vitamins. Fortunately, fish of one sort or another can meet all of these demands. Therefore, fish consumption should not decrease, as for example, consumption of cereals and potatoes have. It may be expected to gain slightly, or perhaps substantially, because of the wide ranges available in price, processing and composition.

An increase in real income indicates higher living standards. People as a whole also are expected to be better educated. They will, therefore, be more discriminating in their purchases, especially with regard to qualities and values. No doubt fish can compete in value but much needs to be done to eliminate the danger of decreased consumption arising from the lack of the highest standards of quality.

The next 20 years will see important changes in the labor force. Already over one-half of our female workers—58.7 per cent in April 1955—are married and the proportion is expected to rise. Undoubtedly this means a shift to food products which can be made ready for the table in a minimum of time with a minimum of effort. But it also may mean a shift in consumer habits, especially for families without small children. More meals may be eaten away from home because of the wife's greater income and the shorter time she has for preparing food. The wide variety of quickly prepared consumer products already available indicates that the fishing industry is flexible enough to meet any challenge in this field.

And the adaptability of fishery products to the portion control now exercised by most eating places, together with the fact that public eating places make as much or more profit from serving fish as from serving meat and poultry products, suggests that fish consumption should not suffer whether meals are eaten at home or away.

It is more difficult to assess what effect more leisure time will have on fish consumption. The work week, now averaging about 40 hours, is expected to drop to 35 hours in 1975 and it is forecast that people will retire at an earlier age. More leisure could mean more time to choose and prepare foods, or more time and meals away from home. Presumably fish consumption would not be materially affected in either case because of the adaptability of fish processing to either situation.

By 1975 automation will be commonplace, not only in factories, but in offices and laboratories as well. More use of machines means less physical exertion and a greater demand for foods high in proteins, minerals and vitamins. Since fish can supply these demands increased automation may be expected to maintain and possibly increase fish consumption.

Along with automation will come other drives throughout all industry, each aimed at securing a competitive advantage with regard to production costs and selling prices, or variety, uniqueness, and quality of products. If we can assume that fish is reasonably competitive in these factors now there is every reason to believe it can remain competitive and thus maintain fish consumption levels. There are even factors which indicate that our fisheries could become more competitive with other food products and, as a result increase fish consumption.

If we take production costs, for example, there are great opportunities to mechanize fishing operations and place them on a large scale production basis. Competition, and interest in survival, if nothing else, should force the use of the most efficient gear and the operation of functionally designed vessels. Probably this will develop under fishery management programs which will eliminate those legal limitations which now often force the fishing industry to use outdated methods and equipment while competitive food producers—agriculture, for example—have almost revolutionized their procedures by immediately adopting every progressive development.

Of unknown, but probably of the very greatest importance to cutting production costs are the untouched fishery resources and the unexplored areas the industry may be able to draw upon to whatever degree needed.

Since 1949 there has been a steady increase in the proportion of imported edible fishery products contributing to our total domestic consumption. There is every reason to believe that the percentage—which was 19.7 in 1949 and 35.4 in 1955—will continue to rise, but probably not as sharply. Foreign fisheries have been developing rapidly and show no particular signs of halting their expansion. And many of these fisheries are expected to continue to aim a substantial part of their production at the United States market until prices, demand, and processing and distributing facilities, especially for frozen fish, become more comparable in other countries. Consumption per capita of all fishery products should not be affected materially by a greater proportion of imported products unless drastic price increases or decreases occur, and these are not expected to materialize. Only a new processing technique, a new product, or some similar advantage could alter this probability.

Exports of fishery products from the United States to other countries have been declining steadily. There seems little chance of an increase in exports so substantial that the volume would materially decrease overall domestic consumption. This presupposes no wars or police actions, since such developments usually decrease consumption and alter trade patterns, especially for canned fish.

The consumption of fish is directly affected by the price and demand for agricultural foods, such as meat, poultry products, and dairy products. This being the case, it is of some interest to examine per capita consumption figures for these foods as projected to 1975 by the U. S. Department of Agriculture. In a recent publication we find that the "food consumption per person" as indicated by the Agricultural Marketing Service Index would be expected to increase about 12 per cent from 1953 to 1975. This sounds bad for fish consumption until we learn that the index involves a price factor. Thus, the consumption increases reflect mostly a continued shift to higher unit-cost foods and away from cereals and potatoes. The pounds of food and calories consumed per person are expected to change only a little but some increases in proteins, minerals and other requirements of an improved diet are expected.

Examination of a tabulation of the projected per capita consumption of cer-

tain livestock products in the same publication revealed a projected increase in meat consumption of 11.8 pounds from 161.2 pounds (carcass weight) in 1955 to 173.0 pounds in 1975, or seven per cent. Chickens and turkeys were expected to increase from 25.9 pounds (eviscerated weight) per person in 1955 to 32.2 pounds in 1975, or 24 per cent. During the same period egg consumption was expected to jump from 366 per person to 403, or 10 per cent. Cheese consumption would increase moderately from 7.7 to 8.0 pounds, or four per cent, as part of an increase in the consumption of dairy products (fat solids basis) from 700 to 720 pounds, or three per cent.

Of other products the consumption of food oils is expected to increase very little. Fruit consumption will increase about 19 per cent, and consumption of tomatoes and leafy, green and yellow vegetables about 16 per cent. Potatoes will drop from 101 to 85 pounds, or 16 per cent. Dry beans and peas, grain products and sugar are other foods which are expected to be consumed in lesser quantities.

The projected increases in meat, poultry and milk consumption suggested an inquiry of the author of the publication to determine if the tabulation actually meant that these competitors of fishery products were expected to make these gains at the expense of fish. It appears that this is not the case. The projection is based, to a considerable extent, on the expectation that a larger proportion of the population in 1975 will be younger people who are relatively heavier eaters. It was estimated that, at the most, only a two per cent increase in per capita consumption might be ascribed to the average individual increasing his food intake. Presumably, the factors inducing this slight increase would also apply equally to fish consumption, so it may be concluded that its relationship to the consumption of competitive agricultural foods will not be impaired.

No doubt there are many other factors which may affect future fish consumption. In the handling and processing of food products we are on the verge of expanded use of antibiotics and radiation preservation. Certainly, fish seem well adapted to antibiotic treatment after catching and should share whatever advantage competitive foods might gain through use of this technique.

Radiation preservation of foods is still in the experimental stages but being pressed vigorously. To date tests with most fishery products have not been especially successful insofar as long-term storage is concerned. Radiation pasteurization which will increase storage life for a limited period is now being tested and may prove more desirable. The very great interest of the Army in radiation preservation and the results of tests carried out to date indicate this process probably is going to become very significant in the future. Its possibilities are tremendous if its potential advantages in regard to decreased processing and storage costs, simplified packaging, improved quality, etc., are achieved. We see no reason, at present, why most fishery products should not be as well adapted to use of this process as competitive foods. If they are not, the consumption of fish could decline appreciably.

One other shadow lies over fish consumption in the future. At present, we use over 40 per cent of the catch for non-edible purposes—mostly for fish meal and fish oil. Neither of these products are of such value as to divert much more substantial quantities of edible fish to non-edible uses than are used at present. This does not mean, however, that much more valuable pharmaceutical or industrial products might not be derived from fish. These could be products so valuable that they might create an industrial technology based on fish, much as similar technologies are based on petroleum and coal as basic raw materials.

With the expanded research on fish now underway, the possibilities are not as extreme as they may appear. A case in point is the potential use of fish oil sprays to control insects, funguses, and nematodes. Research sponsored by the Service with Saltonstall-Kennedy funds has indicated the unique value of fish oils in these fields. Modified fish oils apparently are 32 times as effective on citrus trees as presently used fungicides. If widely used, more fish oil than currently produced would be required to meet the demand for fungicides and insecticides. And if used to control nematodes in the roots of citrus trees a similar additional amount would be required. This represents only one of many promising developments in the industrial and pharmaceutical field.

While it is impossible to weigh accurately the probable gains or losses in the consumption of fish for edible purposes in the next 20 years it appears that any change either way probably will not be very significant. That is, not unless the industry takes the fullest advantage of its opportunity to exploit to the utmost the variety and nutritive value of fish, and to present consumers with a product whose quality is unsurpassed. Should this occur fish consumption could increase considerably.

Even so, we may see most of the cheap and abundant fish become so valuable as a raw material for industrial use that the remaining varieties will become luxury food items with a significantly diminished overall per capita consumption.

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