

OUTLOOK FOR INDUSTRIALIZATION OF THE PHILIPPINE FISHERIES¹

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During the past fifty years remarkable progress has marked the development of the fishing industry and the half-century can be roughly subdivided into three phases that describe this activity. From 1900 to 1918 the fishing industry was largely in the hands of the Philippine citizens themselves. It was a small and unimportant segment of the overall economy and since the population of the nation was also small at that time, the daily needs of the people were easily met. The techniques employed were crude and were typical of those of southeast Asia generally, although the ingenuity of the average Filipino fishermen had adapted these processes to their particular situation.

Following the first world war, the fishing industry witnessed the gradual infiltration of Japanese interests. These aliens, by hard work and careful management, were able to monopolize a large segment of the industry, particularly the supply of fish to the larger city markets throughout the islands. They introduced a few innovations, very few of which have proved of lasting benefit. But at the beginning of the second world war there is no doubt that these were the dominant factors in the fishing industry in many places.

Following independence in 1946, until the present, a third phase of the fishing industry and the pattern for the immediate future has unfolded. Under the guidance of the Bureau of Fisheries, which was created in 1947, and with the assistance of the American fishery mission of the U. S. Fish and Wildlife Service, the industry has again fallen into the hands of the Filipinos. It has been, to a considerable extent, modernized by the introduction of power to take the place of sail and by experiments with innovations of the existing techniques for cap-

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turing fish. The Philippine Bureau of Fisheries, by means of its own exploratory fishing fleet, and the Philippine Fishery Rehabilitation Program have conducted extensive surveys throughout the Philippines for the purpose of ascertaining the potential production that might be obtained from Philippine waters.

These surveys have revealed hitherto unsuspected facts concerning the future of the Philippine fishery economy. It has begun to be realized that the fisheries of the Philippines are not overly productive insofar as their fish supply is concerned. In common with many of the tropical countries, the Philippines possesses a wide variety but a limited supply of fishes. It is becoming more and more apparent that if the average Filipino continues to depend upon fish for his animal protein food this natural resource will have to receive the utmost attention from the government to assure its continuation as an asset to the general economy.

There are, however, certain encouraging features that lend themselves to industrialization of a highly specialized kind. The only relatively unexploited segment of the fisheries of the Philippines is tuna. Data collected by the two organizations interested in the fisheries indicate that raw material for canning tuna can be had in parts of the Islands at a price approximately one half of that being paid by the canneries in the great tuna canning centers of North America. This, coupled with a reasonably low-priced labor supply, seems to indicate that there is a possibility of industrializing this segment of the fishing industry for purposes of export. Many problems remain, however, to be solved in this connection, the foremost of which is an adequate supply of tin containers and an organization with sufficient capital to build the type of vessel necessary and in sufficient numbers to assure a steady supply of fish to the processing plant. Also, due to the distance to the markets, this industry would demand an organization possessing considerable working capital. The present demand for tuna in cans, however, is so great that it is considered little difficulty will be experienced in eventually disposing of the pack.

Two other quality products have been developed from tuna. One of these is tuna ham. The fish is treated in a similar way to bacon with a mixture of salt and saltpeter in the right proportion, and then smoked. Prepared according to recipes tested at the laboratory, this product proved to be a gourmet's delight. The other product, the tuna paste, is prepared from

the fish fillet treated in the same manner as the tuna ham. The treated fillet is ground. The resulting ground product is mixed with oil in the right proportion and packed in cans. The preparation is good material for hors d'œuvre and is in reality a high-class bagoong which would find a ready market in many Philippine homes. These two products added to canning could make an industry worth from 4 to 5 million pesos annually and it would be all new wealth. An investment of 2 to 3 million would be needed to develop this business but if present conditions continue it would be amortized in 2 to 3 years. The possibilities for expansion are also good. With plants for processing located in strategic places, exploitation of the stocks of tuna would not need to be confined to Philippine waters but could go on far out in the South Pacific.

No other segment of the industry, however, seems to offer these possibilities. On the other hand, some opportunities have been found for specialty products. The technologists of the Philippine Bureau of Fisheries and of the Philippine Fishery Rehabilitation Program have developed some unique items, any or all of which could be utilized for industrial exploitation.

Years before the second world war the Division of Fisheries had developed a method of cultivating oysters. This method was found very adaptable to Philippine conditions and has found general acceptance among oyster growers around Manila Bay. The local species of oysters grow to marketable size in six months, and in some places, like Pangasinan Province, the time is shorter by two months. At this stage the oyster is just the right size for packing as a cove oyster for the American trade. This consists of oyster meat packed in brine. Technologists of the Philippine Fishery Program have also found a very suitable pack for the Philippine oyster in the form of a smoked product. This consists of cooking the oyster meat and smoking it for some time. The smoked oyster is then packed in oil. This product meets the approval of all who have tasted it and is suitable as a canape.

There are fishing centers in the Philippines where anchovies (dilis) seem to be ever abundant. The most common commercial method of preserving this fish is by salting it in the form of fish paste (bagoong). A quality product has been made from this fish following a formula for canning developed at the technological laboratory of the Philippine Fishery Program. This item has a wide variety of uses both as a specialty and as a staple. Dilis is recognized as one of the most nutritious

fish in the Philippines and proposals have been made to can this species for local consumption to supplement the imported canned sardines.

In addition to the products listed above, many others are under consideration by the Philippine Bureau of Fisheries at the present time. One of their projects is a ration of rice and fish for the eventual use of the Philippine Armed Forces. Experiments are continuing on other unique Philippine products which, if they prove feasible, would win a ready market within the nation but would have limited appeal to the export market.

Both the Philippine Bureau of Fisheries and the American fishery mission have exerted considerable effort in the improvement of many processing procedures now being used in the Philippines. Thus, they have developed an improved method for salt production, which gives a pure product and increased yield and will in time prove a boon to both the salt industry and fish processors who use the product. Both organizations have also studied the techniques involved in the production of bagoong and patis and the outcome seems very promising for speeding this process and thus rendering each cheaper for the customer.

Both the Philippine Bureau of Fisheries and the American fishery mission have looked into the matter of industrial packing of sardines and mackerels and other types of fish. The fact remains, however, that the demand for fresh fish in the Philippines is so great and the price of most fresh fish concurrently so high, that it is considered impossible at this time to profitably can either sardines, mackerels or baños. For purposes of comparison, the current price of sardines in California for canning and other processing is P65.00 per ton. The same fish in the Philippines varies in price at from P180 to P300 per ton. Mackerel and baños fall in the same price range categories. The loss from trimmings plus the labor involved in packing added to the price of containers and condiments, precludes industrialization of these species either for local consumption or for export.

The Bureau of Fisheries is concerned with the welfare of the average Filipino citizen and has directed many of its technological efforts toward solving some of the important problems that arise in this connection. One of these problems arises from the fact that during an average year, in most localities, there are times when fish are relatively scarce and there are other times when they are comparatively abundant. The Bureau is concerned about taking care of those fish that can

be taken during the period of abundance and has thus devoted much of its time toward developing techniques that can be used in the average Filipino home. The Bureau is ready, however, to render assistance to anyone interested in any of these industrial processes.

While on the whole these cannot be said to be startling developments of an industrial nature in the fishing industry, still the progress during the past four years has been steady and all developments have been carefully considered and assayed judiciously. Perhaps the most significant aspect of this phase of the Philippine fisheries has been that the government officials concerned have become aware of the needs of the fishing industry and are applying the best of their talents to the solution of immediate problems and eventual expansion where such can be shown to be worthwhile and profitable.