

FISH AND THE NATION

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Fish has been occupying a note-worthy position from time immemorial marking one of the early stages of evolution of life in this universe. The modern theory of evolution propounded by Charles Darwin that life in this universe originated in water, passed through several stages of the aquatic animals viz; fish etc. into amphibians and finally through a number of other stages of terrestrial life to the modern man, lends support to the ancient Hindu belief of *Dasavathara*. The different incarnations of the Lord symbolise the different stages of evolution, *Matsyavathara* (fully aquatic) being the first. *Koorma* (amphibian), *Varaha* (fully terrestrial), *Narasimha* (semi human), *Vamana* (the dwarf man) and *Rama* (the fully developed human) all depict the stages of gradual evolution. Apart from this, very much as the microscopic planktonic organisms, its precursors in the evolution of life in water, form the food materials for the fish, the latter offer themselves as food resources to those belonging to the higher order of life especially to man who has been preying upon them from pre-historic times. Besides providing food to a large number of people fish now-a-days plays a

very important role in the economic development of countries especially those which have their own sea and ocean fronts. This is especially true of India which has got thousands of kilometers of sea front on all the three sides.

Fish in India's Economy

The contribution of fish to India's economy is exemplified by the fact that the annual fish landings in India has touched the figure of 1.3 million metric tons and the earnings of foreign exchange by exporting fishery products have exceeded Rs. 20 crores per annum. Besides, it also provides a cheap source of protein food especially to the poorer sector of our population. A survey of the development of this vital industry of ours reveals two distinct phases in the process viz; the one of stunted growth in the century old hereditary way upto the year 1953 and the second phase that followed with rapid mechanisation of fishing operations, application of modern preservation methods and export of frozen and canned fishery products to other countries.

Early Phase

No effort at all was made towards improving the fishing methods especially in the pre-independence period so that only country crafts and manual labour were employed for this purpose which had very limited scope of expansion. Our main export commodities used to be dry prawn pulp, dried fish, shark fins etc., the chief markets being our neighbouring countries like Ceylon, Burma, Singapore, Malaya and Hongkong. We had a flourishing trade in these commodities with the above countries prior to World War II. After the war, the above countries also attained their independence along with us and consequently they imposed strict restrictions on import of such products due to their own economic problems and to encourage their internal production. Moreover, while, during this period the developed countries introduced mechanisation and organisation on large industrial basis their fishing and fish processing activities and started putting into the world market products processed using modern scientific methods, our industry still stuck to its age old procedures with the result that we lost almost all foreign markets for our fishery products and failed to explore new markets for them. Hence a sort of modernisation of the industry became a necessity without which it would have perished.

Second Phase

The steaming out of the refrigerated cargo liner from Cochin with just 13 tons of frozen prawns worth Rs. 57,740 in the year 1953 heralded the second phase of development in our fishery industry. From there it was a process of rapid expansion exporting products processed by modern methods and in the year 1967 India exported 11,173.5 metric tons of frozen prawns worth Rs. 13 crores. Other products also found place among our export commodities. The second such product was canned prawns of which our maiden export was in the year 1959 shipping 373 tons of the product costing Rs. 23.2 lakhs. The figures touched 22,000 tons worth

Rs. 3.12 crores in the year 1967. A new entrant in this field which went abroad for the first time was frozen froglegs. Even though not related to fish but for its common aquatic origin, frogs are processed and exported along with fish and hence are often grouped among fishery products. In a short span of 8 years its export increased from 408 tons worth Rs. 15.2 lakhs in 1960 to 785.8 tons worth Rs. 88.2 lakhs in 1967. A third product to be introduced in this list was frozen lobster tails of which we exported 39.8 tons worth Rs. 2.3 lakhs in 1963 which gradually increased to 128.3 tons costing Rs. 23.6 lakhs in 1967. Today we have 36 freezing and 42 canning factories in the country with 96 and 51 exporters respectively in frozen and canned fishery products. The bulk of our exports go the U.S.A. and we are the second largest shippers of these commodities to that country. Even then our exports to U.S.A. amounts to only just over 4% of their total imports of such products which shows the vast potentialities of expansion of this industry in our country.

Together with the ever increasing demand for prawns our fishing industry also slowly started getting mechanised and today we have more than 6,000 mechanised fishing vessels of different sizes operating all along our coast line. The target for our fourth plan period is to increase our fish catches by another 50% of our present catches, which is easily attainable considering the pace of expansion of our mechanised fishing activities.

For Future

So far so good. The progress achieved up-till now appears to be quite satisfactory as far as export trade is concerned. But is that all what we want? Earning dollar is not our only aim. On the contrary, look at our teeming millions of poor people who are under-nourished and starved of the much needed proteins. Their number is on the increase day by day in spite of the progress in family planning programmes. To such people fish forms a very cheap source of protein. Unfortunately, today all our

mechanised fishing activities appear to be confined to the dollar-earning prawns. The conditions are such that even if the boats have to be kept idle due to non-availability of prawns they don't operate to catch other types of fish. This attitude has to change and our mechanised fishing activities have to be expanded for harvesting all types of fish available. The matter of proper distribution of the fresh fish then poses a problem, due to lack of facilities for which much fish had to be wasted not in the distant past. Application of quick and efficient means of transport and findings of modern technological research can solve this problem fully.

Our traditional fish curing industry has also to be modernised on scientific and hygienic lines, making use of modern technology of processing and packaging. This will go a long way not only in reviving our lost foreign markets for dry fish products but also in finding new ones and utilising them for more and more internal consumption. Under the existing conditions our cured fish products have such short shelf life that they seldom find their way to our internal cities and other places where fresh marine fish is not available.

Freezing and Canning

Our freezing and canning industries which also are now confined to the products for export markets and to some extent for canning small quantities of sardine, mackerel and tuna for the defence supply and to limited internal markets, have necessarily to be expanded to our other fishes if we are to make proper use of these resources. Our technological laboratories have worked out methods for such expansion of these industries. The fact that new processing factories need not be set up for the purpose and utilisation of a portion of the idle capacities of the existing plants themselves can work wonders in case attempts towards that end are made, is heartening and it requires only a brave step

forward by some enterprising industrialist. The courage exhibited in making the first shipment of frozen prawns to America even without the least admonition of what the reaction there would be, has to be shown towards this vital problem of making use of our other fishes also. It is only for somebody to take the lead. Others are sure to follow.

Utilisation of Trash Fish

The cheap varieties of miscellaneous trash fish which do not find good demand in fresh fish markets have to be properly utilised for economic operation of our fish processing industry. Up-till now such fish used to be converted into fish meal for manure or animal feed. But they can be very well utilised for several better purposes like extraction of high quality fish protein concentrate for human consumption, preparation of protein-rich speciality products and valuable materials like bacteriological peptone.

Fish Oils

Both fish body and liver oils are very important byproducts in the industry. Among the liver oils shark liver oil rich in vitamin A is the most important. It is a welcome fact that our maritime states like Tamil Nadu, Kerala, Maharashtra etc. have put up factories to extract this oil and use it for pharmaceutical purposes. Among the body oils, sardine oil is the most important. We have an abundant catch of this fish whose oil contents exceed even 50% of their dry weights in some seasons. The present method of its extraction is quite unsatisfactory and hence the oil finds use only for smearing on wooden fishing country crafts as a protective coating. It has now been proved that slight improvements in extraction procedures can yield a high quality oil which can be put to several industrial uses like fat liquor for the leather industry, tempering of steel, preparation of artificial rubber, printing inks, paints and lubricating oils, the technology of which have all been worked out recently.

Training and Research

All these developments require a lot of training and research. Now almost all the maritime states of the country have got their own fishermen training centres and officers' training courses. Advanced postgraduate training in technology and administration at the level of District Fishery Officers is being imparted at the Central Institute of Fisheries Education, Bombay, established with the aid of FAO of the UN and meant for the whole of south-east Asia. Training in practical fishing operations is given by the Central Institute of Fisheries Operatives at Cochin and in processing technology at the Marine Products Processing Training Centre, Mangalore, the latter having been established with Japanese collaboration. Exploratory fishing operations have been taken up by the Off Shore Fishing Station of the Government of India and research in biology and technology are carried out by the Central Inland Fisheries Institute, Calcutta, Central

Marine Fisheries Research Institute, Mandapam Camp, Tamil Nadu and the Central Institute of Fisheries Technology, Cochin, Kerala, under the Indian Council of Agricultural Research. The Indo-Norwegian Project, a combined project of the Governments of Norway, India and Kerala is also contributing a lot to the development of the fishing industry of our country.

A proper exploitation of our vast resources of fish employing mechanised methods and catching all types of fish, their utilisation by extending our freezing and canning industries to fish other than prawn, modernisation of fish curing industry and economic utilisation of trash fish and other byproducts are sure to open out a bright future to our fishery industry. This will not only improve the economic position of the country but also contribute its share in alleviating the problem of shortage of food materials and serve to uplift the socio-economic conditions of the lakhs of fishermen engaged in this industry.



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