

Some Suggestions for the Better Utilization of the Fishery Resources of Gujarat

R. Venkataraman & K. Devadasan

Central Institute of Fisheries Technology, Sub-station (Veraval)

Gujarat with its long coast of about 1700 km., is one of the most important maritime states of India. But development of fisheries started in the State at a relatively later date. Now that the process has started, Gujarat offers great potentialities in the future development of fisheries in India. The strong vegetarian sentiment among the people of this region is one of the main reasons for the delayed development of fisheries along this Coast. But the advent of enterprising entrepreneurs from South has triggered great enthusiasm among local people also and as a result the picture is changing rapidly and Gujarat is emerging as a leading maritime State of India.

Unlike in some other leading Coastal States, Gujarat Coast, abounds in a variety of highly relished table fishes, which if properly utilized, can fetch very good returns to the fishermen. The Central Institute of Fisheries Technology, Sub-station at Veraval has conducted detailed investigations on

the methods for the proper utilization of the major fisheries of this Coast.

Elasmobranchs

The Saurashtra Coast is a very rich fishery ground for Sharks Skates and rays. These are still caught mainly by gill nets. With increased use of line fishing the region can increase its landings of Sharks etc. considerably. Even in the present condition, Gujarat produces about 5700 m. tons of these fishes annually. But due to lack of proper methods for its economic utilization, Sharks fetch very poor returns to the fishermen at present. If scientifically handled and properly utilized all the parts of this fish can be turned into valuable products making it in its real sense the "Kalpaka-Matsya" as it is sometimes called.

The skin of Shark which is at present wasted, can yield high quality leather suitable for making all fancy leather items. Studies conducted by the Central

Institute of Fisheries Technology in collaboration with the Central Leather Research Institute have proved the suitability of Shark skin for the preparation of costly leather. But the fishermen of this area have not yet fully realised the export potentialities of the products. However, of late, there is a growing realisation among them about this wastage and many enquiries are being received on the proper processing and utilization of Shark skin and offer useful products. The livers of Sharks are a well known source of the much valued shark liver oil, a major source of natural Vitamin A in our country. But though there are centres for extraction of shark liver oil, a good quantity of the liver oil is not properly utilised due to incomplete extraction. Fishermen dry the livers in the Sun and use its oil for waterproofing boat surfaces. This is indeed a criminal waste of a valuable material, especially so when there are well equipped shark liver oil extraction plants. But even in these factories the residue after oil extraction is wasted. This residue in fact contains a good amount of oil which goes waste due to incomplete extraction. After complete defatting the residue can be utilised for enhancing the nutritive value of cattle or poultry feed. Studies have shown that it is a rich source of Protein and Vitamins, especially Vitamins of the B complex. Preliminary studies at this Institute to utilise it for incorporation in some high energy beverages for enhanced nutritive value, have given encouraging results. These studies are being pursued in depth.

Similarly the dried fins of shark is a traditional export item. But if shark fin

rays are extracted from them by simple digestion in dilute acetic acid and subsequent extraction of the rays, it can fetch much better returns to the fishermen. These things do not require much of investment or equipment and can be done on a cottage industry scale.

Shark teeth is another commodity which is presently discarded. After digestion of the discarded head portion in dilute alkali, removal of the these teeth is very easy. The teeth is very much in demand in countries like Australia presumably for decorative purposes. This will be another valuable price product which is at present being wasted. Even the discarded portions of shark can be utilised for the preparation of glue.

Regarding the muscle, the presence of high amount of urea in the muscle of sharks is the major problem which reduces its value as a food fish. Use of urease enzyme or even salting and subsequent desalting is found to remove the urea from the muscle to a negligibly low level. The muscle after removal of urea can be minced and frozen as blocks to give attractive products. Alternatively the muscle can yield very good smoked fillets also. But here again, smoking, a very easy and inexpensive method of processing, is yet to gain popularity among our processors.

In the case of Rays also, the present utilization is completely inadequate. With rays, the muscle can be utilised for the preparation of hard smoked products similar to "Massmin" from Tuna. The hard texture and colour of the smoked ray muscle, yields

an indential product like massmin, which will have a good market in the Far East. Ray liver oil contains practically no Vitamin A. So it can be substituted for other Industrial fat products.

Eels :

Gujarat annually produces about 3000 m. tons of marine Eels. Their air bladders are converted into valuable fish maws. But the muscle is not utilised in a profitable way. Smoked Eel filletes is a very fine product which if properly prepared can have a good export market. Eel has been found suitable for the preparation of good canned products also. Smoked Eel fillets on canning is found to yield a very attractive and tasty product.

Pomfrets :

About 5000m. tons of Pomfrets are landed in Gujarat Coast. This is still and under exploited fishery of this region. As one of the most highly relished table fishes, Pomfret fishery should be developed to the maximum extent possible. In the case of Black Pomfret the rate of spoilage is much faster and its shelf-life is comparatively less. But Silver Pomfret can be stored in frozen condition for more than 6 months. If properly exploited the Pomfret offers good scope even for a very lucrative export market. With the improved methods and facilities for better transportation of fresh fish in insulated containers, Pomfrets will have a very good internal market as well.

Hilsa

Gujarat is one of the main landing areas for Hilsa, the annual landings, touching about 3500 to 4000 m. tons. This again

is another underexploited fishery. With increased fishing activities and proposed developments, the landing will go up considerably in the coming year. The marine Hilsa Toli, though not relished as much as Hilsa Ilisha, is still very much in demand especially in West Bengal and other areas. Hilsa Ilisha is also caught in small quantities along this Coast. With better transportation facilities and improved methods, this fish can fetch a very good return to the fishermen. Hilsa has been found to yield good canned products. The recent reports from Bengladesh about export of sizeable consignments of frozen Hilsa also shows the potentialities in this field.

Dhoma

Dhoma has become one of the major catches of Gujarat Coast with the tremendous spurt in trawling activity along this coast. But at present it is mostly sun dried in a most unhygienic way and then pulverised into a powdery product which is marketed as a poultry feed. But if scientifically processed it can yield a very high quality fish meal of very high protein content. (62% to 73%). Dhoma is an ideal raw material for the preparation of Fish Protein concentrate for human consumption. Of late some modern factories have come up in this region, which are producing good quality fish meal from Dhoma. Dhoma is yet another fish which gives a very attractive product on smoke curing. Smoking is an inexpensive and easy method. This must be popularised among our fishermen for the utilization of many of the otherwise unexploited fishes.

Prawns & Lobsters :

With the tremendous increase in the number of trawlers operating along this Coast the prawn and lobster landing is increasing by leaps and bounds. The annual landing of Prawns and Lobsters during 1975 in Gujarat Coast may be anywhere between 15,000m. tons to 20,000m. tons. Before the end of the Vtb Plan, the Prawn & Lobsters landing in Gujarat Coast may touch 50,000m tons. Few Processing-Factories have come up and they are engaged mainly in freezing and exporting Prawn and Lobster meat. The waste portions like shell can be advantageously utilised for the production of Chitosan, an industrially valuable product imported at a high cost at present, for use in textile sizing, water clarification, cosmetics manufacture etc. The heads etc. can be used for the production of products like Shrimp extract.

Bombay Duck

Bombay duck is the most important fishery of the Gujarat Coast, the landings running to about 50,000 m. tons a year. Because of the very high moisture content, Bombay duck, is not suitable for preservation by freezing, canning etc. Traditionally it is dried into an unattractive product, fetching a very poor return. But if it is laminated and dried in artificial driers under hygeinic conditions, it yields a very attractive product which can have a good export market in Western Countries. The methods for lamination and suitable types of Driers have already been developed by the C. I. F. T. Development and proper utilization of this fishery is of utmost import-

ance in the future development of fisheries not only of Gujarat but of India itself, as Bombay-duck is one of our major fisheries.

In addition to these major fisheries, sizeable quantities of other table fishes like Lactarius, Seer, Ghol Tuna, Perches etc. as also other miscellaneous fishes like Ribbon fish, Horse mackerel etc. are landed in considerable quantities along this Coast. In the coming years landings of these fishes also will go up. They can be utilized for production of good quality fish meal. Besides, the Saurashtra Coast is very rich in Lobster, Crabs, Squids etc. which are not fully exploited at present. At present there are nearly 1200 mechanised boats operating in this area. Besides, about 1100 Canoes with outboard motors are also in operation. Most of these Fishing Boats are less than 50 feet in size. But during the current plan period, their number is expected to increase considerably. It is anticipated that the annual marine landings of fish and other products of Gujarat State will go up from the present 1.5 lakh tonnes to at least 3.25 lakh m. tonnes before the end of Vth Plan. With the increased landings, it is highly essential that the catch brought in is properly and scientifically utilised, so that it will fetch a remunerative price to the fishermen.

The Central Institute of Fisheries Technology is helping the fishing industry of this area to evolve better methods of fishing and fish processing with a view to develop and utilise the vast and at present unexploited fishery resources of this major maritime State of India. ●