INTO THE BLUE SEAS

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Hunger, starvation, malnutrition and similar depressing terms are often associated with under-developed or developing countries. Fortunately, we in India have not had in recent years any large scale starvation — thanks to the Green Revolution. Malnutrition, however, is widespread. The consequences of malnutrition, especially in children, are indeed serious. Although we glibly talk of bridging the protein gap and how it could be achieved, our efforts in this direction seem to be rather slow. The gap between requirements and availability of animal protein is largely due to low production. The realization of the consequences of protein deficiency in the diet of human beings is necessary not only amongst the scientists but also amongst the public and the administrators and this awareness alone could bring about a change in our approach to this vital problem. Once the effects of malnutrition have taken to manifest themselves, the damages they do are invariably irreparable. While efforts are being made in evolving new strains of grains and pulses with higher protein, it is a well established fact that animal protein is the best form of protein, both from the nutritional as well as the digestibility point of view. Amongst the animal proteins fish is the best and cheapest source available.

Being centrally located in the Indian Ocean and with a coast line extending over 5,000 kilometres, India occupies a pivotal position in the Indian Ocean fisheries. Ironically, the resources we have both near-shore and offshore have not been fully utilized. In recent years the increasing demand for prawns and the attraction the foreign exchange it earns have resulted in the development of prawn fisheries. In this eagerness and enthusiasm for developing an export oriented industry, certain imbalances in the overall development of our fisheries have resulted. Apprehensions have also been expressed about the possible overfishing although these are by and large without any scientific

basis. Nonetheless, the fact remains that much of our efforts in the develop ment of the near-shore fisheries are directed towards those which earn foreign exchange. A time has therefore come when we have to diversify our fisheries in order to release the pressure on those groups which are heavily fished and also to exploit new 'pastures'.

In recent years attempts have been made to make a somewhat realistic estimate of the productive potential of the Indian Ocean and waters adjoining the Indian sub-continent. These have established beyond doubt the availability of rich resources, both demersal and pelagic. Having established the fact about the availability of resources, it only remains to find ways and means of harvesting these.

Considering the fact that the fishing grounds located close to the coast are somewhat intensely fished, the need for exploiting the grounds farther out becomes inescapable in the interest of maintaining sustainable fisheries of the already exploited groups. In tropical countries, the ground fisheries are not as rich as in the temperate and cold regions. As though to compensate for this, nature has endowed these regions with rich pelagic fisheries. In the high seas and around the oceanic islands like the Laccadives and the Andamans abound a group of highly relished fish—broadly called tunas. Tuna fisheries are at their maximum in the Pacific Ocean followed by the Indian Ocean and the Atlantic. The world tuna production appears to have somewhat stabilized at about 1.5 million tonnes. Members of the tuna family are highly priced and the traditional Maldive fish or 'mass' is a much relished commodity. While there is still a great demand for the Maldive fish particularly in countries like Ceylon, with new methods of processing and canning, tuna could not only find a ready market in its present processed from but also will have a great export potential as canned and frozen fish.

The tuna resources of the Indian Ocean, it has to be regretfully admitted, are expioited mostly by countries like Japan, Taiwan, USSR, etc. Out of the total annual catch of about 15 lakh tonnes, India's share is only about 4,000 tonnes. Tuna fishing thus is still in a preliminary stage in India and the high potential has been recognised by other countries which are engaged in large scale fishing in the Indian Ocean.

The dominant species which comprise the tuna fisheries are the yellowfin, the bluefin, the bigeye, the albacore and the skipjack. Constituting a minor group are the sail fishes and the swordfishes. The species commonly caught are the blue, striped and black marlins, the sailfish, the swordfish and the short-nosed spearfish. While these are the real oceanic species, there are relatives which are exploited in the near-shore waters. These include the bonito; the little tunny, the Indian long-tailed tunny and the frigate mackerel. All of these are believed to be under-exploited.

In addition to these there are several other resources in the pelagic zone, These include squids, pelagic sharks, sauries, flying fishes, whales, etc. While whaling involves many problems, there is no reason why the other fisheries listed above could not be developed. Squids are reported to be found in abundance from 8° to 14°N latitude along the continental slope and beyond.

The Government of India with the assistance of the UNDP/UNSF is shortly launching a detailed survey of the pelagic fishery resources of the west coast of India. While this project is aimed at a study of the sardine and mackerel resources, which together constitute nearly 30% of the marine fisheries of India, it would be highly desirable to undertake similar surveys to cover the other pelagic resources too. It is estimated that if the present trend in fisheries holds good, the total landings of tunas and billfishes would be about 3.5 lakh tonnes in another five years. There is, thus, scope for increasing our tuna fisheries of the near-shore waters and participating in a big way in the exploitation of the oceanic waters off India. Considering the magnitude and importance of the fishery and its future development, it would also be desirable to establish eventually a Commission more or less on the pattern of the Inter-American Tropical Tuna Commission to conduct investigations on the abundance, biometry and ecology of the species involved, to study the kinds of fish commonly used as bait, methods of fishing, other kinds of fish taken by tuna fishing vessels, the effects of natural factors and human activities on the populations of fishes supporting these fisheries and to recommend from time to time proposals for joint action designed to keep the populations of fishes at those levels of abundance which will permit the maximum sustained catch.

Tuna fishing is a highly skilled one and we are yet to develop the necessary technical know-how. Owing to the differences in the behaviour of various species and the fact that they are fast moving fishes, different fishing methods will have to be adopted for the successful exploitation of these. The methods have to be evolved taking into consideration the habits and behaviour pattern of the species to be fished. Long lining, pole and line fishing with live bait, trawling and purse seining are the common methods of fishing.

It is inevitable that in a country like India, traditional fishing methods would continue for many more years. To-day there are about 8000 mechanized boats landing only 15 per cent of the total catch. While these have a role to play and have their place in the overall set-up, effective modernisation is inescapable if we have to develop our fisheries in a big way. One possible line in which we can step up our production is by fishing in the open ocean for the rich pelagic fishes. During the last one-and-half decades, India has built up a good export industry mainly based on frozen and canned prawns. There has been a steady increase in the volume of export. In order to sustain and enlarge the scope of the export industry, diversification is essential. Tunas are in great demand and this offers good scope for export. In recent years there has also been a steady increase in the internal fish trade and to meet this increasing demand, large scale exploitation of our pelagic resources will be the answer. There is no doubt that the cheapest way

of providing the much required animal protein for the masses is from the wealth of the seas. More than 65 per cent of the Indians would accept fish, if available at reasonable cost and as a wholesome product. In so far as India is concerned, the major resources continue to be the pelagic stocks of sardines, mackerel, tuna, other scombroids, etc. Leaving the near-shore waters to traditional fishing, the scene of future activity should shift to the open waters of the sea.

We are at the threshold of the Second Development Decade launched by the United Nations. While the First Decade showed quite encouraging results in various fields, greater hope is anticipated during the second one. Let us therefore, gear up our developments in fisheries with renewed vigour. Many difficulties have yet to be overcome but this field is capable of making a major contribution to the solution of the problem of protein shortage. Now that there is clear evidence in support of rich pelagic resources in the Indian Ocean, the production certainly could be augmented substantially through effective modernization in fishing methods. Better methods of preservation, handling and distribution would assure more wholesome fish to the protein deficient people. All these call for a determined and planned approach to solve the nation's problem. Following the Green Revolution, let us then usher in an era of 'Protein Revolution'. ●