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CAN INDIA AFFORD TO OPT OUT OF COMMERCIAL TUNA FISHING?

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INTRODUCTION

There is a growing concern about sustaining global food resources to keep pace with the growing population and other demands to meet the challenges of 2000 A.D. and beyond. Fisheries is no exception. It is estimated that at the present level of consumption of fish, the requirement by 2000 A.D. will be about 100 million tonnes as against the present production of about 82 million tonnes. One of the components projected for filling up a part of this gap is the harvest of tuna and tuna-like fishes, which stands today at about 3.6 million tonnes and is projected to increase to over 8 million tonnes during the next decade. While optimistic estimates as to how to fill such a gap through increased production of pelagic and demersal fisheries, including tunas and cephalopods and potential saving from past harvest loses and from aquaculture have been made, let us look at the scenario of Indian fisheries, particularly marine fisheries and more specifically tuna fisheries.

Ever since 1947 we have been trying to develop deep sea fishing without a proper perspective of what is meant by "Deep-sea Fishing". Our problem is that at inconvenient times we have been changing the nomenclature of organisations meant for the so-called "Deep-sea Fishing". By 1975 we were happy to announce that our neritic waters within 40 m. depth had been surveyed. Our artisanal fishermen have in some areas been fishing traditionally from beyond this depth!

With the declaration of the Exclusive Economic Zone in February 1976, hopes were high that we will be able to make a quantum jump in our marine fish production which even at that point of time was stagnating around 1.4 million tonnes. The outlook was that within a few years it would be possible for us to harvest if not all, at least a major part of the projected potential yield of 4.5 million tonnes from our seas. Fifteen years later where do we stand? We

are still at the starting blocks with escalated conflicts between the artisanal and mechanised fishing sectors, and with a still greater concentration for shrimping with larger trawlers infringing into shallow neritic waters. As for annual production, we have, perhaps, added about 2,00,000 tonnes during the last one and a half decades. How much of this is due to refinements in catch data acquisition is not clear. Of course, there have been small pockets of success, notable being the motorization of traditional crafts such as the canoes and catamarans; the expansion of the coastal gillnet fisheries and the purse seining operation from Karnataka - Kerala waters.

The so-called joint venture programmes for pair trawling or bull trawling in the early eighties was a fiasco- a highly wasteful and dubious exercise of which the less said the better. It had brought no credit to the country. We have tided over the catastrophe, but still all our efforts have been towards saturation fishing for shrimp. On the infrastructure facilities available for the purpose, development of an industrial fisheries, or berthing facility for larger vessels or handling of hundreds of tonnes of frozen fish a day, we have a long way to go.

This week's report on marine products exports indicates that we have exceeded the target of Rs.580 crores by 10 crores, and one significant thing is that the comparatively new items other than shrimp registering over 100 per cent growth over the previous years both in volume and value. Again the emphasis is that we should invest in two areas, viz., brackish water aquaculture and tuna fishing.

Now we come down to the question whether tuna fishing has a priority in our scheme of things. From the way things are moving, the answer is "No". We are making no headway, while intense activities are going on all around involving many Indian Ocean nations and distant water fishing nations. The race is one for expanding and consolidating the position in a hitherto free entry system. Let us look at what is happening all around us.

SIGNIFICANT EVENTS IN THE INDIAN OCEAN

The last fifteen years have witnessed major changes in the Indian Ocean in the fisheries of tuna and tuna-like fishes, the more significant being:

Longline Fishery

1. The longline fishery for the yellowfin tuna (YFT), bigeye tuna (BET), albacore (ALB) and southern bluefin (SBF) which stood at around 64 thousand t in 1974 had by 1986 gone up to 102 thousand t. It is generally agreed that increased effort in the longline fishery may not result in increase in catch of the above species.

2. The longline catch of BET which stood at about 23 thousand t in 1970 went up to about 58 thousand t in 1978 by the introduction of deep longlining and was about 36.8 thousand t in 1985. There is a greater directed effort to harvest this species in preference to YFT by Taiwan and ROK longliners. The data obtained with these changes in the pattern of fishing for the BET has so far not helped us to know whether one or more stocks of this species exists in the Indian Ocean. It is felt that BET in the Indian Ocean is under-exploited at present.

3. The YFT in the longline catch attained a peak of 77 thousand t in 1968, but the annual production has been about 30 thousand t during the recent years. The longliners of Japan and ROK are more interested in the capture of BET on account of market preference and better economic returns.

4. The major longline effort for ALB is by Taiwan, the Japanese and ROK effort resulting in hardly 17% of the catch. Though Taiwan's effort has been chiefly targetted for the ALB, Taiwan reduced the number of longliners from 150 in 1984 to 127 in 1985 with consequent decrease in the catch from 31256 t to 25355 t respectively.

5. The SBF, the most preferred of tuna species, fetches the highest price. The longline catch from the Southern Indian Ocean between 40°S and 50°S by Japan in 1986 was about 20000 t, though in 1960, the catch was as high as 70 thousand t. The Australian and New Zealand catch of the SBF from surface fishery amounted to about 13 thousand t. This is perhaps the only species of tuna in the Indian Ocean, the stock position of which is discussed and closely monitored by the concerned fishing nations (Japan, Australia and New Zealand) and reviewed annually. The SBF resources of the Southern Oceans (Indian, Pacific and Atlantic) are considered as a whole and in 1985 about 300 Japanese longliners were operating in the SBF fishing grounds. This major shift for the SBF by the Japanese longliners commenced from 1967 from whence this has been the major targetted species by Japan.

Purse seining for Oceanic Tunas

The eighties has witnessed an explosive development in the tuna fisheries of the Indian Ocean with the introduction of the purse seine gear for SKJ and YFT. The operations which started with a Mauritian - Japanese joint venture in 1979 with a single purseseiner yielding about 3700 t today has transformed into a multi-national fisheries chiefly based at the Republic of Seychelles. The 1986 purse seine catch of SKJ and YFT had shot up to 147331 t. This single component has greatly contributed to taking the total tuna production from all the gears in the Indian Ocean from 259459 t in 1979 to 572147 t in 1986. Entrants into this fishery includes both distant water and Indian Ocean countries viz., France (with 20 purseseiners), Spain (15), United Kingdom (1), USSR (1), Japan (1), Vessels registered in Ivory Coast (2 in 1985), Panama (1), Mauritius (2) (Sakurai, 1986, 1987), and India (1). In 1984-85, the total number of purseseiners operating from Seychelles had gone up to 49.

The Spanish purseseine fleet in 1984 and 1985 captured a total of 38499 t of which the major components were YFT (15411 t) and SKJ (22854 t). The performance of the French Fleet in 1985 was a production of 68000 t of which 47% was YFT and 48% SKJ; giving a 11.7 t/fishing day performance.

Gillnet Fishery for Albacore

A more recent development in tuna fisheries in the Indian Ocean is the gillnet fishery for the ALB initiated by Taiwan. From a single vessel operation in 1984 the effort increased to 58 gillnetters in 1985 and 78 in 1986 with corresponding increase in production from 24 t to 4688 t to 15978 t respectively. The gillnet operations are seasonal from December to May and the catch is predominantly ALB.

Deep longlining for the Big-eye tuna

Deep longline, especially of the BET was introduced by ROK in 1973 and by 1977 the entire BET fishing ground North of 20°S was replaced by deep longlines. The average CPUE for BET was higher in the deep longline than in the regular longline where the CPUE of YFT was higher.

ROK longliners (151 vessels) caught 71 thousand t, mainly YFT and BET in 1979. Since then the fleet size decreased to 75 in 1984 and 62 in 1985 with the catch around 24 thousand t and 28 thousand t respectively.

Small Scale Fisheries

The small scale fisheries from the Indian Ocean which stood around 82000 t in 1972 had more than double to 193000 t by 1984-85. This has been mainly achieved through expansion in the gillnet fisheries for coastal species of tunas, especially the longtail tunny Thunnus tonggol from the Gulf of Oman, Iranian Coast and East Andaman Sea; and the Kawakawa Euthynus affinis from the West Coast of India, Sri Lanka and Maldives and improved data reporting systems. The Iranian catch of T. tonggol almost doubled from 6389 t in 1984 to 11848 t in 1985 and the catch from the Gulf of Oman is estimated at 25000 t. Similarly SKJ and young YFT have figured prominently in the coastal fisheries harvested by gillnets and purse seines. The frigate and bullet tunas (Auxis thazard and A. rochei) are chiefly caught along the coasts of India, Sri Lanka and Maldives. At present fish aggregating devices such as the "Payos" in the Philippines have not been established in the Indian Ocean, but going by experience from other geographical areas, introduction of FADs could also result in augmenting production of coastal species of tunas.

Tuna Fisheries Interaction

Interaction between some of the existing artisanal fisheries activities and newer development of commercial fisheries in the continental shelf waters of some of the coastal nations in the Indian Ocean area are now leading to conservation and regulatory actions. The limited entry system, seasonal fishing under licensing, closed areas and so on are coming into vogue. However, till recently interaction between related oceanic fisheries activities or oceanic and coastal fisheries were not matters of serious concern in the Indian Ocean area. However, since 1985 it has become imperative to look at the problem very critically, the immediate concern being the interaction between the rapidly developing purse seine fishery for SKJ and YFT in the Western Indian Ocean and its likely effects on the 'traditional' longline fishery for specific resources such as the YFT. The question is whether the yield per recruit (Y/R) would suffer a major or minor reduction or remain stable in spite of an intensive juvenile fishery for the YFT. Secondly, the effect of any such reduction would have in a directed fishery on adults of the target species (YFT) and other non-target associated species such as the billfishes. This issue has become crucial to form the focal theme of an Expert Consultation on Stock Assessment of tunas of the Indian Ocean held in Colombo,

Sri Lanka, from 4 to 8 December 1986, and again in June 1988, at Mauritius under the auspices of the IPTP. The Consultations did not bring out any conclusive evidence, but drew attention to the need for intensive monitoring of the catch from the different fisheries in order to predict or identify any imbalances that may develop. It is also recognised that the YFT which occur in the longline fishery (adults) could be a good 'indicator' species. Highly migratory in nature, its pathways of movements in the Indian Ocean, landlocked in the north, may be quite different than what is witnessed in the Pacific and the Atlantic. Any disequilibrium resulting from an over-exploitation of juveniles by purseseining could affect recruitment of the large adult YFT caught by longline gear and a consequent reduction in the latter fishery or, if uneconomical, a phasing out of operations. An argument could be that the longline fishery could be kept economically going even at a reduced level of catch if it is possible to exploit large adult YFT besides the BET and billfishes. The fact that adult YFT are also subject to capture by the purseseine gear should be a matter of concern. No doubt, more information is needed to plan any regulatory measures for these oceanic pelagic fisheries.

The oceanic gillnet fishery has so rapidly developed for the ALB that within three years of the commencement of operations, the gillnet catch has surpassed the longline catch. This is another area of interaction which could have a direct effect on the longline fishery.

The large scale expansion of coastal fisheries, particularly through expansion in gill netting and small scale purseseining from continental shelf and adjacent waters should also have interactions with the oceanic purseseine and longline fishery in some areas where substantial quantities of young YFT are caught. Simulation models to look at such interaction may help, but what is needed is also reliable data base, an ocean-wide data acquisition system and also a major tagging programme to give a better understanding of many of these intricate problems. A delineation of the stocks of different species is also a pre-requisite.

Need for an International Commission for the Conservation and Management of the Indian Ocean Tuna Resources

Silas and Pillai (1982) proposed such an International Commission for the Indian Ocean since there was no existing mechanism to co-ordinate ocean-wide activities and help in the management of this valuable resource. Tunas transcend

national boundaries and being highly migratory, investigations on their biology and fisheries would need international co-operation. The FAO/UNDP Programme presently functioning as the Indo-Pacific Tuna Development and Management Programme has limited objectives and mandate. It functions basically as a data acquisition and monitoring centre. Perhaps, the infrastructure built up could form the nucleus for an ocean-wide Commission which could help in developing a coherent policy for the management of the Indian Ocean tuna fisheries and as suggested by Silas and Pillai (1982) help in funding and co-ordinating programmes on:

- Assisting the coastal and Island States to develop control measures for managing tuna stocks.

- Evolve policies and modalities for regulating access to fisheries.

- Advise coastal and Island States on stock, levels of exploitation and types of effort most suitable.

- Advise and assist Island States on specialised problems in developing tuna fisheries including setting up of fish aggregating devices.

- Develop an ocean-wide data centre for tuna and tuna fisheries based on distant water fishing efforts of countries as well as from the coastal and States in the Indian Ocean; the processing, analysis and dissemination of information on tuna stocks and monitoring of stocks.

- Surveillance

- Advise on better utilisation of bycatch.

- Identification of potential areas for development of surface and subsurface fisheries for tunas.

- Conduct large scale tagging of tunas and related species to obtain biological parameters on age, growth, maturity and longevity to enable understanding the interactions and competitions between different types of fisheries and the status of the stocks.

- Planned development of the artisanal and small scale tuna fisheries.

For the long term strategy of management of Indian Ocean tuna fisheries, such an International Commission will be the only effective mechanism.

CONCLUSION

In conclusion, I would like to say that we have made feeble attempts at tuna fishing from the high-seas. Some have been failures and it is necessary that these be critically analysed to see where the malady lies rather than cite these as examples and take a view that we can carry on even without veturing into this sector.

What we really need today is a renaissance in Indian Fisheries and this cannot be achieved by inaction, indecision or procrastination. None of us, I am sure, would like to see the day when quotas are fixed for highseas tuna catch from the Indian Ocean and find that India as a non-starter in tuna fisheries figures nowhere in the picture. The attitude should change from "Nobody cares for fisheries development" to one of action, from Advisory Boards in fisheries to Implementing Development Boards; from dismemberment of Marine Fisheries among various Ministries and Departments to a streamlined functional entity.

The first announcement to the National Conference says that "Although the tuna resources, their fishery and development have been discussed at various levels in the past, these have not made an impact on the industry and tangible action are yet to be taken for commercial exploitation of this resource, product development and export". I do not concur fully with this as I know that the industry has evinced great interest in exploiting the resource through joint venture programme, but where is the malfunction? Let us examine at this Conference.

How can we make this functional to tap at least a part of the annual production of tuna from the Indian Ocean valued in the international trade at over U.S.$ 10,000 million? Unless we have a Technology Mission for Marine Fisheries, nothing much is going to happen. There is an urgency in establishing Indian presence in oceanic tuna fishing and at no cost can we abdicate this responsibility. We should drastically re-orient our approach to this.