

FISHERIES DEVELOPMENT : 2000 A.D.

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(i) Planning, management and development of fisheries	US \$ 5.5 m
(ii) Small-scale fisheries	US \$ 3.5 m
(iii) Aquaculture	US \$ 3.5 m
(iv) International trade	US \$ 2.0 m
(v) Fisheries for alleviating under-nutrition.	US \$ 1.1 m
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Total:	US \$ 15.6 m
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The World Conference on Fisheries has been a landmark, the beginning of the new era full of hope and promise to improve the condition of the fishery industry as a whole including the fisherfolk.

E.G. SILAS

I am greatly honoured that I have been asked to say a few words on this occasion in this Panel discussion. Mr. Jakhanwal who preceded me and who along with me attended the technical phase of the World Fisheries Conference, has already reviewed very extensively the objectives and purposes of the Conference and the reasons for developing the action plans as described by Dr. Krone. I now refer to the general trend of how things have been happening in the past, are happening now and may perhaps happen in future.

Fish constitutes about six per cent of the total protein supply. Allowing for indirect contribution of fish meal as feed for animals, it is about 24 per cent of the total animal protein supply in the world today. Fishery is also a source of income generation. Strictly speaking, we have no statistics of how many people are involved globally in the fishing industry but it is said to be roughly about 15 to 16 million.

Looking at the trends of production one finds that from about 20 million metric tons in the early fifties it has gone up to 65 million tonnes in 1970, and today production stands at about 74 million tonnes. The major mechanisms by which this increase has been possible have been large-scale mechanisation programmes, net handling programmes, freezing at sea, stern trawling, operational range of activities which have increased, the development of distant water fisheries, use of synthetic gear and large and more efficient fishing gears such as purse seine and also the increase of fish meal production in the world.

This trend has also resulted in the transfer of some of these technologies to the developing world and there is a sudden spurt of development in some of the developing countries such as Thailand, where production has gone up by four or five times within a short period. In India we have had

the experience of fishery development in various facets taking place during the last 35 years and still I think we are all frustrated that our efforts are not seeing the light of the day, because the progress has not been as per expectation.

In the world context, it is estimated that fishery resources could be increased by 20 to 30 million metric tons by the turn of the century. This may be a little optimistic but these are estimates which have been made after considerable thought. The major mechanisms through which this increase can be achieved have been identified as new resources, which may account for part of this; better management of existing resources, which is very very important; you heard about the wastage and what amount of fish could be made use of if proper strategies are developed for the utilisation of the by-catch. Not only that, but better management of the existing exploited stocks is itself a very important aspect. The bulk of the fisheries throughout the world comes from the coastal waters, particularly the shelf waters, and we have seen highly successful fisheries being mismanaged, ending in total failure in short periods. To achieve the objectives set, therefore, one of the primary needs is to better manage the existing resources. Efforts should be made for the recovery of fish stocks which have got depleted as this is surely one of the ways of increasing production later.

Although the EEZ with extended jurisdiction is there for many of the countries, I feel, to some extent, that this by itself will not solve the problem. As we know, the resources beyond the shelf waters are very, very limited. Either you go in for tuna or you go in for may be pelagic squids. I do not think that we would reach by 2000 A.D. the stage to successfully exploit and utilise the mysopelagics. Here again, we do not know the quality of the mysopelagic complex as such in the different areas and to what extent it could be used and the economics of these operations for different places. Quite a lot of work is under way but it will take some more time before this could materialise into an effective mechanism for adding to fish production.

As far as existing resources are concerned, there are great constraints in production. One can rule out chances of higher production because the resources are already being exploited to the optimum levels and in this area we should go in for alternative methods like aquaculture.

Thus, looking at areas from where new additions would take place: resources like the mysopelagic, oceanic squids, also sometimes not from the oceanic tunas but coastal species which have not been fully exploited in many areas, krill which is under-exploited at present and probably half a million metric tons are being taken today. There again one is likely to face problems with the conservationists. Mariculture is in an infant state in many places and a lot of development in technology is required. Whatever has been done has been for high-price choice items but large-scale efforts in other areas are necessary.

Inland fish culture is also showing very good signs where increased production could be achieved but there are several constraints, particularly in relation to human settlements and problems connected with industrialisation, agriculture and conflicts of water use and management by different agencies. Large-scale urbanisation is taking place in many places and this will be a great constraint on inland culture development. There are areas like reservoirs where today the production systems are very low and could be considerably increased to step-up national fish production in many countries.

Looking at the trends of consumption and demand we have to consider things like population growth, income growth and price changes.

Coming closer home, I would like to express a few of my views regarding what is happening in India and what should perhaps be considered.

The bulk of our fish production comes from the continental shelf waters and that also from a very narrow strip along the coast, lying about 35 to 40 fathoms deep. Diversification in this sector has been spoken of for a long time and where this has been done there has been perceptible improvement and the quality of the product has also been good. Significant in this field are the large-scale gilnet fishery activities which have developed in some of the coastal areas.

There may be greater need for looking at this sector very closely to see to what extent improved gears and improved type of craft could help in exploitation under strict monitoring conditions.

The sudden large-scale motorisation programmes that have come up in the small-scale sector, particularly in Kerala and some other States, have certainly accelerated production in this sector. In the case of Kerala production in this motorised sector went up by about 5,000 metric tons in 1984. That means it is also sharing or infringing the stocks which are already being fished by mechanised boats which are operating in similar areas. So one of the great problems is the sharing of stocks between different interests. This cannot be successfully done unless there is a proper monitoring system, research base and an allocation of resources to the different sectors and the sectors themselves being regulated. Today we have a free entry system which has created considerable problems. There is a need, therefore, for proper regulation of the effort going into these sectors to really successfully manage these fisheries.

Research on the biological aspects, and stock assessment is very important. Since, unlike in the temperate waters, we are now confronted by multispecies fisheries, the problem is very complex and we hope that with new models and other systems being developed we may be able to tackle this situation in the coming years so that better management practices could be adopted.

I think the time has come when, probably through international help or through national efforts not only in India but in other countries also,

we take a very critical look at the destructive gears, which are in operation,—to what extent we could really evaluate the usefulness of some of these fishing gears or methods of fishing and what will be the more appropriate technology for different places and different situations and how this could be developed. In fact a very bold step is necessary in this because sometimes even traditional gears are highly destructive. To cite a simple example, the dole nets operated in Maharashtra waters which are highly destructive because tons of young fish get caught and not even utilised properly.

It is high time, therefore, that wherever there is no proper regulatory system, the open entry system should be phased out and proper regulatory entry done.

A lot of effort has to go into training and other connected aspects because without this proper infrastructure cannot be built up. In most of the developing countries, although traditionally some systems have been built up, quite a lot of technologies and innovations which have been developed have to be imparted. This is an aspect which has to be carefully considered.

At the same time there is also looking at proper data acquisition from different sectors. Without this it will not be possible to carry out any critical evaluation at a later date. Therefore, what is needed is cooperation from various sectors whether it be small-scale fisheries, medium scale or the mechanised sector, large trawlers, or distant water fishing systems. There is great need for developing a data acquisition system which could also be standardised regionally so that we get uniform data where sharing of stocks and other situations have to be considered in the future.

I touched upon aquaculture earlier. Although Mr. Jakhanwal is a bit sceptical I personally feel that there is great scope for aquaculture, particularly in the coastal areas. We have been trying to develop systems and some extension programmes, but there has been quite a lot of resistance from the coastal sector to take up things, or there have been policies on land and water use management which have to be changed, and a large number of constraints have already been identified. Maybe, this is true for other developing countries also. But India has its own special problems and these have to be looked at concurrently and action taken at the national or state level. There is much future for aquaculture in this country, particularly coastal aquaculture about which we are talking so much. But once this is allowed, where of course the small-scale sector and the industrial sector could strike a balance the policies could be suitably changed. Until such time it is our responsibility, of the sponsors and others who are here today, to see that we make changes and improvements to help or accelerate aquaculture in this country.

T.V.R. PILLAY

It is a pleasure to be here mainly because I am back in my own home