

OPTIMUM USE OF FISH RESOURCES IN SRI LANKA

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Introduction

The length of Sri Lanka's coastline is about 1,800 km and an area extending 200 km from it was declared an Exclusive Economic Zone (EEZ) in 1979. The area of the EEZ is about 233,000 square km, which is three and a half times the total land area of this island.

The marine fish resource areas of this island are classified as follows:

- (i) Contiguous Zone (adjacent zone) up to 40 km from shoreline.
- (ii) Exclusive Economic Zone (offshore) between 40 km to 100 km from shoreline.
- (iii) Pollution Prevention Zone (deep-sea) beyond 100 km from shoreline.

The marine fisheries sector of the country was mainly confined to the continental shelf area. This area was rather narrow and it extends about 40 km. The average width was around 25 km and the area of the shelf was about 26,000 km which covers only about one tenth of the EEZ.

It is claimed by some that marine fisheries resources are renewable and are not possessed by any individual or nation. Marine fisheries resources, it is claimed are an 'open access' resource to mankind and therefore open to harvesting by anybody. It is claimed further that fishery resources are unique compared to other natural resources such as minerals and fossil oils. According to a report published by the Asian Productivity Organization, 'marine living resources are generally considered as 'res nullius or res communies' (APO 1988, P 123).

Such claims are advanced by those who

are engaged in poaching on the fisheries resources of other nations.

The question arises, in the case of Sri Lanka, who should take the responsibility for managing our marine fisheries resources? Should it be the central government or the provincial council or the local fisheries associations or some other relevant authority?

Although the development of the national fisheries resources is primarily the responsibility of the central government, adequate attention has not been given yet to manage this natural resource. It is ironical that in this island nation, there is no responsible institute or organization for this purpose and no proper management system has been set up upto

Table I
Fish Production by sources 1976-1990 (Unit: 1000mt.)

Year	Coastal	Offshore Deep-sea	Total fish Production	%change in total fish harvested	% change in coastal fish harvested
1976	122.3	0.6	135.9	-	-
1977	125.4	0.3	138.8	2.1	2.1
1978	136.9	3.0	156.6	9.2	12.8
1979	148.9	2.1	168.4	8.8	7.5
1980	165.3	2.1	187.7	11.0	11.5
1981	175.1	2.2	206.8	5.9	10.2
1982	182.5	1.1	216.9	4.2	4.9
1983	184.1	0.7	220.8	0.9	1.8
1984	136.6	0.8	169.3	-25.8	-23.3
1985	140.4	2.4	175.4	2.7	3.6
1986	144.3	3.4	183.1	2.9	4.4
1987	149.3	4.3	190.0	3.5	3.8
1988	155.1	4.4	197.5	3.9	3.9
1989	157.4	8.2	205.3	1.5	3.9
1990	134.1	11.7	145.8	-14.8	-29.0
1991	159.1	15.1	198.1	18.6	35.9

Source: Ministry of Fisheries

now. The development of our fisheries resources has not been properly and effectively provided for in many past development programmes. As claimed by a scientist, this applies to many other third world countries as well.

Development efforts in fisheries sector in Sri Lanka

The Sri Lankan fisheries sector has a high potential for development. One recent research study carried out by a Norwegian research vessel has estimated that in Sri Lanka the total biomass was 750,000 mt. with a sustainable yield of fish from these resources of about 250,000 mt. per annum. Current production is far below this estimate. According to available statistics, the harvest of fish during the last two decades has not increased significantly and the quantity harvested has fluctuated widely as the table I shows: These figures, however, refer only to the catch by Sri Lankan fishermen.

The quantity harvested during the last few years has stagnated and available supply has become less and less adequate for local consumption. According to the Central Bank of Sri Lanka, the value of fish production in 1989 was Rs. 2,370 million and this has declined to Rs. 2,252 million in 1990 and recovered in 1991. Further, the GNP percentage contribution of the fish production in 1990 has also decreased from 2 percent to 1.8 percent compared to 1989.

"Modernization and progress of the small-scale fisheries sector" was one of the key strategies in many past development programmes for the fisheries sector in Sri Lanka. Development programmes in this sector have mostly emphasized the increase of production and mechanization of fishing fleets rather than the management of fish resources. As a result, number of fishing crafts has increased considerably during the past decades. This was mainly due to many credit and subsidy schemes which were introduced by the government, State Banks and other agencies. The table II indicates the changes in the fishing fleets during the past three decades.

Our supplies of fish come principally from the following areas. According to official figures, in 1982, fish production of these areas and their percentage contribution to the catch for domestic consumption were as follows: (See Table III)

The fish supplies from the Jaffna, Mullativu, Mannar, Trincomalee, Batticaloa

and Kalmune have declined sharply due to the prevailing insurgency. The contribution from these areas was more than 50 percent and production has continued to decline during the last decade. However, the violence in the Northern and Eastern coastal areas was not the sole reason for the decrease in fish production. Several other important factors such as insufficient supply of spare parts, non-availability of fishing gear, lack of training in modern methods and increasing fuel prices have also contributed to this decline.

It should be mentioned that several other development activities have taken place in this sector, especially the infrastructure development such as landing centers, fishing ports and marketing and transport facilities.

In addition a large amount of money was invested in housing, health, and other community development activities for the fishing community. The 2nd Master Plan for fisheries development to be implemented during 1987-91 emphasized:

1. Increase the domestic production of fish
2. Increase the income of fishermen by improving productivity.
3. Raise the standard of living of the small scale fishermen.
4. Increase foreign exchange earnings through export of high-value fish.

It should be noted that the resource management of the fisheries sector was also not given priority in this plan.

Table II

Number of fishing fleets in 1972, 1982 and 1985

<i>Item</i>	1972	1982	1985
Offshore and deep-sea fishing (mechanized)			
38' draft net/long line vessels	-	15	30
34' draft net/long line vessels	-	20	80
108' (83m) travelers	5	01	-
11 Ton boats (11.5)	27	-	-
Tuna boats	2	-	-
Coastal fishing (motorized)			
28' -32' boats	1861	3347	2727
17'-23' boats	874	5911	11513
Traditional craft	2246	3834	-
Traditional craft (non-motorized)	14453	13939	13519

Source: Ministry of Fisheries

Table III

<i>Supply areas</i>	<i>Production (tons)</i>	<i>Percentage contribution</i>
Jaffna, Mullativu, Mannar	69,900	35.6
Puttalam, Chilaw, Negombo	48,000	27.2
Trincomalee, Batticaloa, Kalmune	32,000	17.9
Galle, Matara, Hambantota	26,300	14.7
Others	8,200	4.9

The first master plan for the development of the fisheries sector (1979-1983) also did not give priority for resource management. According to this plan, the main objectives revolved on increasing fish production, and fishermen's income and enhancing employment opportunities.

In the recent past fishing crafts belonging to foreign companies have been allowed to operate in Sri Lankan waters on a large scale for commercial purposes. This arrangement should be watched carefully and under the Fisheries Ordinance, regulations should be enacted to ensure that these fishing boats may operate only beyond 35 miles from the shore. Further, local companies were involved in collaboration with some foreign companies. These companies should also operate their vessels beyond the grounds reserved for local fishermen, i.e. beyond 25 miles from the shore. Their operation also should be carried out only after obtaining a licence under this specific facilities and attractive incentives, such as project financing, and marketing especially exports and mechanisation of the fishing industry are being provided by government to foreign fishermen as well.

Resource Management of Fisheries

A recent research report published in Sri Lanka has drawn attention to 'the pressure on the fishing ground exploited by the larger fishing boats with inboard engines, as well as by mechanized boats with out board engines' (Fernando, S. 1987, p. 30).

The table IV indicates the number of various types of fishing crafts which are in operation:

An overview of development of the Sri Lankan fisheries sector notes that there are some implications relating to the optimum use of fisheries resource management. The small and traditional boats operating in the small scale sector make one day trip and do not go far away and do not have cooling facilities. The quantity harvested by these boats is 200-300 kg per trip. The small-scale fisheries crafts can be operated within the distance of 25 miles from the coast and its accounts for almost 90 percent of the total fish production. Large mechanised boats of the large scale private owners and foreign fishermen make a few day's or weeks' trip and have cooling facilities on board. The off-shore fishery takes place between 25-60 miles. Their catch ranges from 3000 to 5000kg.

There is clearly a competition for our resources between large scale industrial fisheries operators and small scale artisanal fisheries sector in Sri Lanka.

This situation does not exist only in Sri Lanka, but in other Asian countries too. 'Panayotoura', Japanese expert has raised the following issues pertaining to fisheries resources management in south-east Asian countries:

1. How to attain a sustainable improvement in the socio-economic conditions of small scale fisheries communities.
2. How to manage the marine fisheries resources so as to maintain its productivity (or more appropriately the net economic or net social benefit form the resources).

marketing information the prices of fish (selected varieties) have increased by 100 percent during last five years (1987-1991).

Imports value of dried fish

Year	Value (Rs. Million)	Quantity (Mt.000)
1982	163	7
1983	222	105
1984	378	34
1985	510	25
1986	631	24
1987	767	30
1988	945	31
1989	1003	35
1990	1313	38

Source: Central Bank of Sri Lanka.

Table IV

Type of crafts	Range of distance from the shore	Percentage of the total fishing crafts in Sri Lanka 1985
1. Small non mechanized traditional crafts	5 to 7 miles	40%
2. 17.5 foot boats with outboard motor and traditional crafts	10 to 15 miles	42%
3. Large non-mechanized traditional boats	15 to 20 miles	8%
4. 28 to 32 foot boats (3.5 tons) with inboard motors	25 miles	
5. 34 foot and 28 foot boats with inboard motors.	Beyond 25 miles practice (however, they fish within the 25 miles range).	10%

Source: Fernando, CS. 1987, p 10.

3. How to allocate the country's limited marine fisheries between small-scale fisheries communities and industrial fisheries so as to minimize the conflict between them i.e. how to manage fisheries resources in order to reduce internal conflict and alleviate poverty among fishermen. (T. Panayotou 1985 p. 13 to 14 in Fernando. 187p. 16).

Conclusion

A decline in fish production and a drop in per capita availability of fish are two direct effects of industrial exploitation of our fishery resources. This results in high prices of fish in the domestic market. According to

The unequal supplies and demand were the major reasons for the increase in fish prices. This was mainly due to lack of fish production in the country.

It also has a far reaching adverse impact in the nutritional level of the people. High price of fish has reduced the consumption of fish and its impact on nutrition was negative. The annual per capita consumption of fish which was 14.3 kg in 1970 has decreased to 10.4 kg in 1977. According to the Labour Force - Socio-Economic Survey of 1980/81 per capita fish consumption was 7.07 kg in all sectors. But, the Socio-Economic survey which was conducted in 1986/87 reveals that

(Cont. from page 44)

the annual per capita consumption of fish has decreased to 5.08kg. The recent World Bank Report on "Employment and Poverty Alleviation (1990:8)" has indicated that there has been an increase in acute malnutrition in Sri Lanka.

This is because of inadequacy of fish resources in the fishing grounds due to over exploitation, lack of conservation and management of living fish resources. The overall exploitation of fish takes place in the following manner:

1. All types of fishing crafts are involved in harvesting of fish in the same fishing ground.
2. Large scale fishing crafts do not go to deep sea, instead, they harvest fish within the inshore fishing grounds.

3. According to information gathered from Sri Lankan fishing community, fishing crafts of foreign countries operate illegally in Sri Lanka's fishing grounds. Most of them sail from Thailand, Japan, India, Taiwan and Korea. They also over exploit the Sri Lankan fish resources.

In this context the relevant authorities should take measures to stop or curb illicit croaching by foreign vessels. Not only do they exploit a resource that belongs to Sri Lanka, thus taking away a big slice of the production which could be consumed by our people, they are also guilty of implicit extensive damage on those resources. The impact of this criminal exploitation of our fisheries resource include the devastation of spanning grounds and ecological damage from which it would take a century or two for them to recover. In the meantime the Production of fish will continue to fall and foreign exchange spent annually for the import of fish would sore and the malnutrition among the people also will rise up.