

200 Mile Exclusive Economic Zone and Fishery Development in Sri Lanka

By

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BACKGROUND

The Law of the Sea Convention permits each coastal state an Exclusive Economic Zone (EEZ) of 200 nautical miles.—Within this zone, each coastal state has sovereign rights to explore and exploit, amongst others, the living resources, including fisheries resources. Even though the EEZs of all the coastal states cover only 35 percent of the oceans, 99 per cent of the living resources exploited from the oceans at present come from this area. As such, the 200 mile EEZs and the new maritime boundaries will bring about a significant change in the global fishery scene.

A significant change will be the redistribution of fisheries resources and the wealth from these resources amongst different nations. As a result of the new maritime boundaries some countries lost access to their traditional fishing grounds and resources whilst others gained new resources Sri Lanka too gained new resources, but at the same time lost some of her traditional fishing grounds and resources. Sri Lanka's losses were due mainly to boundary delimitations with India with considerable restriction of the off-shore fishing grounds feasible for bottom trawling. These include:—

- a. Complete loss of access to the Wadge Bank trawling grounds;
- b. Loss of northern portion of the Pedro Bank trawling grounds; and
- c. Loss of a portion of Palk/Bay Gulf of Mannar fishing grounds.

The 200 mile EEZ has given Sri Lanka jurisdiction over 90,000 sq. miles of ocean and the resources therein while reducing some of the traditional off-shore trawling grounds mentioned above.

MARINE FISHERIES IN SRI LANKA - PAST AND PRESENT

Sri Lankas marine fisheries have been traditionally divided into the following three classes, based on the area of the sea from where the resource is exploited:—

- a. Coastal Fishery: Fishery extending up to twenty five miles from the coast, i.e., fishing activities taking place on the continental shelf and a little beyond. The existing marine fisheries are entirely coastal and confined to small boat operations. The bulk of the marine fish production, nearly ninety per cent, comes from the coastal fishery. In 1978, the coastal fishing fleet had 23,000 vessels of less than 32 feet. Only thirty per cent of the vessels were mechanised.
- b. Off-shore fishery: Exploitation of resources from 25 miles to 100 miles from the coast.
- c. Deep-sea fishery: Fisheries that take place beyond a distance of 100 miles from the coast.

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Off-shore and deep sea fishing by Sri Lanka vessels has been very limited in the past. A notable feature of these limited activities has been the concentration on bottom trawling. The Wadge Bank and the Pedro Bank were discovered in the early twenties (1920-1923) after a survey of littoral waters around Sri Lanka. The Colonial British Government accorded more emphasis to development of bottom trawling as it was a method familiar to them. Another reason was that bottom trawling was popular with nearly every major fishing nation prior to the Second World War. There was also considerable consumer preference to trawl fish as the only other fish varieties available were those from the beach seine fishery.

Another notable feature of off-shore and deep sea fishing in Sri Lanka in the past was the assumption that off-shore and deep sea fishing would be mainly carried out by the public sector. This came about as there was a high degree of state participation in these fisheries through the Department of Fisheries and the Ceylon Fisheries Corporation. When the Corporation was established in 1964, deep sea and off-shore fishing came to be regarded as the preserve of the public sector. The Corporation on its part made substantial investments in developing the infrastructure, harbours and shore facilities for servicing the off-shore and deep sea fishing fleets. The assumption that off-shore and deep sea fishing was the concern of the Government and not the public sector was one of the reasons for the failure of private sector to engage in off-shore and deep sea fisheries. Lack of banking and financial facilities, problems of technology and management, lack of incentives for investments, foreign exchange scarcities and import controls which existed from early 1960's also discouraged private sector participation in off-shore and deep sea fisheries.

In the recent past (1960-1970) Sri Lanka's fishing activities in the off-shore and deep sea range were limited to operations of four tuna long liners by a private company in collaboration with a Japanese company, operation of a freezer trawler by a private company, operation of two tuna long liners by the Ceylon Fisheries Corporation and Wadge Bank trawling.

The Wadge Bank trawling grounds, situated at the southern tip of India, cover an area of 3000 sq. miles and is about 115 miles off Colombo. Commercial trawling on Wadge Bank by Sri Lankan vessels began in 1928. Private companies, as well as the Government, through the Department of Fisheries and the Ceylon Fisheries Corporation have fished the Wadge Bank on a more or less continuous basis since the late 1920's. In 1976 when Sri Lanka lost access to the Wadge Bank, the Corporation had a fleet of six 250 G.T. stern trawlers. These trawlers, on an average made twelve trips a year, with each trip lasting 12 - 14 days. The catch per day per vessel increased from 4000 lbs. in the earlier days to about 9000 lbs. in the early 1960's. Government owned vessels landed an average of 700 tons per year of good quality fish from 1950 to the early 1960's.

The Pedro Bank, situated off the extreme north-east corner of the island was not exploited commercially until 1965. The trawlable area covers about 1000 sq. miles and most of the past fishing activities on Pedro Bank have been sporadic and experimental.

MARINE FISHERIES RESOURCES AROUND SRI LANKA

Natural limitations on the marine fish resources around Sri Lanka are imposed by a rather narrow continental shelf and lack of any significant up-wellings. The continental shelf around the 1,100 mile long coast line is very narrow, averaging fourteen miles in width and rarely extending beyond twenty five miles. There are also no up-wellings of any significance to bring up nutrients from the deep sea and enrich the surface waters to support large fish resources.

With a narrow continental shelf, the resources of demersal fish (those that live on or near the bottom of the sea) cannot be very large. There are some off-shore areas capable of sustaining trawling operations for lobsters, shrimp and a few commercially important species of fish. These were discovered during a joint survey with a Soviet Vessel (Optimist) in 1972. The survey was conducted in the 100 mile zone adjacent to Sri Lanka outside the territorial waters. Fish resources were surveyed using bottom trawling. As much of the continental shelf lies within the territorial waters, trawling was possible only on limited areas such as the Wadge Bank, Gulf of Mannar and the Southern part of the Island.

Most the fish stocks discovered during these deep water trawling trials were only suitable for fish meal. Whether the deep water lobsters and shrimp can support a commercial fishery is something which needs further investigation. Furthermore, certain resources identified by the "Optimist" survey now lie within the Indian waters.

A Norwegian research vessel ("Dr. Fridtjoff Nansen") which carried out acoustic surveys for fish resources around the coastal waters of Sri Lanka in 1978, 1979 and 1980 estimated the potential yield from the coastal fish resources to be 250,000 tons per year. Out of this potential yield 80,000 tons were estimated to be available from the demersal resources. The present production of demersal fish is around 35,000 tons. On the whole, demersal fisheries do not present a substantial potential for expansion, other than for small scale trawling and bottom long line operations mostly within the continental shelf.

The principal resources within the EEZ are the pelagic species which sustain the present in-shore fishery. Pelagic fish resources can be grouped into three categories: the small pelagics, medium sized pelagics and the large pelagic species. Sardines, Herrings, anchovies etc. comprise the small pelagics, exploited from the in-shore waters, upto a limit of approximately 10 miles from the shore. The mackerel, barracuda, spanish mackerel, frigate mackerel etc. comprise the medium sized pelagics. These have a more wide distribution compared to small pelagics. Some like the spanish mackerel, skipjack and mackerel tuna are to be found in the off-shore range as well. The large pelagics include species like the yellowfin tuna, big-eye tuna, bill fishes and the sharks. These species, during young stages could be found in in-shore waters, but move into deeper waters as they grow bigger and older. The existing fisheries for the pelagic species cover mainly the in-shore range and to a limited extent the fringes of the off-shore range.

The main pelagic varieties in the off-shore and deep sea range are highly migratory and are not restricted to the 200 mile EEZ of Sri Lanka alone. Many of these varieties, tunas, bill fishes etc. fished off Sri Lanka, Maldives and India may be from common stocks. These resources are herefore available at any given time for exploitation by more than one nation. The potential annual yield from the off-shore and deep sea resources from waters around Sri Lanka has been estimated to be 30,000 tons.

STRATEGY FOR FISHERIES DEVELOPMENT IN EEZ

The Five Year Fishery Development Plan (1979 - 1983) launched in 1979 recognises the new resources Sri Lanka has gained as a result of the new law of the Sea. It is a comprehensive plan with the objectives of increasing fish production and thereby raise the per capita consumption of fish; raising the income and living standards of fishermen, and maximising employment opportunities.

The main thrust of the Development Plan is towards improvement and expansion of the existing coastal fishery. The coastal fishery contributes as much as eighty percent of the total fish

landed and is the main source of employment and revenue in the industry. There is scope for the present methods and equipment used in the coastal fishery to be easily up-graded at modest cost, giving a high rate of economic and social return. Maldistribution of effort, with too many boats concentrated in some areas and too few in others; heavy exploitation of pelagics and inadequate exploitation of demersal stocks; inadequate utilization of the existing fleet; lack of protected landing facilities in some areas; and the effect of high cost of fuel on operations, are among the major constraints to full exploitation of coastal fisheries.

In terms of the Five Fishery Development Plan, the Ministry of Fisheries is expected to expand the coastal fishing fleet by addition of a large number of craft which have already proved to be successful. One thousand nine hundred and fifty boats of 28-32 ft. class will be introduced during the period 1979 - 1983.

Thousand of these will be new additions to the existing fleet, while the rest will be replacements for older vessels. In addition, 2400 Fibre glass boats of 17 - 24 ft. will also be introduced during this period. As at present only about one-fourth of coastal fishing fleet is mechanised. An addition of about 3000 out-board engine is envisaged. These measures are expected to yield a catch of over 200,000 tons. of fish from the coastal fishery.

The plan also recognises the need to expand the exploitation of under-exploited fish resources, especially those in off-shore and deep-sea areas. Domestic fish production from the off-shore and deep-sea at present is only about 3000-5000 tons per year. Only a few vessels fish in these regions and most operate below capacity. The ability of the existing fishing industry participating in exploitation of resources in the larger EEZ regime is very limited, the major constraints being lack of knowledge on resources; lack of suitable vessels, gear and equipment; lack of technology and trained manpower; lack of essential infrastructure; and high capital and operating costs.

A major policy change, embodied in the plan is the decision to limit State participation in fishing activities. Unlike in the past, State participation is to be limited to providing infrastructure and institutional support. In future, private sector is expected to play a more important and leading role in the development of off-shore and deep-sea fisheries. Substantial investment incentives have been made available to encourage private sector participation in off-shore and deep-sea fishing activities. These include a subsidy scheme for purchasing boats and engines, lump sum depreciation allowances and development rebates and tax holidays. The involvement of financial institutions in the sphere of fishing in recent times has also helped to promote private sector participation in off-shore and deep-sea fisheries.

In addition to increased private sector involvement, the Plan envisages expansion of off-shore and deep-sea fishing activities through a number of foreign aided development projects, which in addition to introducing new and larger vessels, will provide inputs of skilled technical assistance and equipment which are not yet available in Sri Lanka. Through these projects, the Government expects to introduce two hundred and thirty boats of 34 ft. class, four boats of 50 ft. class and five deep-sea tuna vessels to the off-shore and deep-sea ranges. This will be in addition to those that will be introduced by the private sector. Furthermore, in deep-sea region in particular, resources exploitation will be encouraged by allowing foreign collaboration in the form of joint ventures so that Sri Lanka will benefit not only by getting fish and foreign exchange but also by the provision of training and employment and access to resource data.

Due to large capital costs for vessels and lack of local experience, the Ministry of Fisheries has decided that deep-sea fishing can only be established with foreign assistance. Foreign collabo-

ration could be in various ways, such as joint ventures, licensing, charter of vessels etc. There are reservations about allowing foreign vessels to fish on licence, partly due to past unhappy experiences with foreign fishing companies fishing on licence. Fishing on license is difficult to supervise. It is also not a good arrangement from long term objectives such as transfer of skills and technology, accumulation of resources data and the development of a fishery appropriate to locally available skills and other inputs.

The policy of the Ministry of Fisheries is to regard licencing and joint venture arrangements with caution. This is to ensure that local fishermen and fisheries are not adversely affected. Further, the vessels fishing on such arrangements are expected to provide a proportion on of their catch to the domestic market. Joint venture arrangements will be looked upon more favourably if they include sale of a large proportion of the catch in Sri Lanka; 51 percent or more local equity; meeting of foreign expenses by foreign partners, and provision for training for Sri Lankan in off-shore and deep-sea fishing etc.

With increased participation of the local private sector and through foreign funded development projects, the Government hopes to exploit 32,000 tons of fish per year from off-shore and deep-sea fisheries, by the end of the Plan period.

The seasonal variations in the availability of off-shore and deep sea pelagic species are significant in comparison with other fisheries. Different methods therefore have to be used at different seasons in order to realise good annual catch rates. For instance, in Sri Lanka, the south-west monsoon period is the best fishing season for drift net fishing whilst the inter-monsoon and north-east monsoon period is the best season for pole and line and long-line fishing. It has been identified that the best vessels suited to exploit the pelagic resources in the off-shore range of 25-60 miles are combination type of vessels of 45-60 ft. These vessels are for drift netting and pole and line fishing for skipjack and yellowfin tunas that are available throughout the year in this range. A potential yield of 20,000 tons (mostly skipjack and yellowfin tuna) by a fleet of 95 to 130 vessels of 45 ft. class combination boats providing employment to 900 to 1000 persons at sea has been estimated from the off-shore range.

The major fishery which can be developed in the deep-sea is the deep-sea fishery for tuna. Under the Plan, a feasibility study for deep-sea fishing for tuna together with a detailed project proposal including ten vessels of 350 gross ton class has been prepared. Two alternate schemes for finance and implementation are being considered. One is for a local company to purchase the vessels and hire foreign management and crew for a five year transitional period. This is to be financed by a World Bank loan. The second scheme is for a joint venture between a local company and a foreign company. Five vessels are expected to be introduced during this period.

FOREIGN FUNDED DEVELOPMENT PROJECTS

In recent years the Ministry of Fisheries has been successful in launching a number of foreign funded development projects with the aim of maximizing benefits from the new resources. In these projects, in addition to the provision for more boats provision has also been made to develop the infrastructure. Some of these projects also provide for technical expertise.

The South-West Coast Fisheries Development Project, funded by the Asian Development Bank at a cost of U.S. \$ 3.1 million was completed in 1979. This was Sri Lanka's first major externally funded fisheries development projects in recent times. The project was designed to augment the exploitation of coastal and off-shore resources by the introduction of 200 boats of existing 3½ ton class and 30 boats of a new type (38 ft. class). The inputs were supplemented by facilities for boat repair and maintenance and fish marketing.

The North-west Coast Fishery Development Project is an ongoing activity financed by the Abu Dhabi Fund at a cost of U.S. £ 4.5 million. The main objective of this project is to promote and develop the exploitation of off-shore fisheries resources in the Gulf of Mannar region by introducing ninety boats of 34 ft. class and two boats (combination type vessels) of 50 ft. class. Ten boats of 34 ft. class have already been commissioned and thirty six more are now under construction. The establishment of off-shore facilities in the project locality is also envisaged.

The East Coast Fisheries Development Project is another ongoing activity, financed by the Government of Netherlands, at a cost of U.S. £ 2.5 million. It seeks to develop fisheries in the Batticaloa district by providing shore facilities, marketing facilities as well as the introduction of 100 boats of a new type specially designed for east coast operations.

The West Coast Fisheries Project, which will cost U.S. £ 14.5 million, is funded by the Asian Development Bank. Its main objectives are to increase efficiency of currently operating boats, increase exploitation of off-shore resources and improve fish landing facilities. The project envisages the introduction of 400 boats of 28 ft. class, 50 boats of 34 ft. class, 1,500 modern sails for existing mechanised craft, cold storage facilities a jetty near Kalpitiya (already completed) and technical expertise.

With a 200 mile EEZ, the fishery industry in Sri Lanka has great potential for rapid expansion. The identification of new programmes must be accorded priority.