KADALEKUM KANIVUKAL

(Bounties of the Sea)

Farm School Series on marine fisheries
broadcast by All India Radio, Thrissur

Edited by

K. RAVINDRAN
KRISHNA SRINATH
K.K. KUNJIPALU
V. SASIKUMAR

Published by

CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY
Matsyapuri P.O., Cochin - 682 029

&

ALL INDIA RADIO
Ramavarmapuram, Thrissur - 680 631

THE UNEXPLOITED MARINE RESOURCES OF INDIA

P.A. Thomas
Vizhinjam Research Centre of C.M.F.R.I
Vizhinjam - 695 521

From time immemorial the oceans are considered a 'treasure house' for mankind.

Resources which are conventionally exploited from our seas may be classified under two groups, the living and the non-living. Fishes, prawns, crabs, lobsters, mussels, oysters, clams, cuttle fishes, squids and a few seaweeds fall under the former category whereas items such as petrol, cooking gas and salt come under the latter. Only the living resources which have food value are enlisted in all global fishery assessment.

In the present context, a discussion on the conventionally exploited resources of our seas has no relevance. Many resources that are unconventional as per present concepts and standards have drawn attention of researchers. Those items with no food value, but have gained medicinal importance are dealt with here. There was not much knowledge on the properties of some of these resources and they were being indiscriminately exploited and exported.

The gorgonids

This group known as seafans are sedentary marine organisms related to corals and grow extensively in the Gulf of Mannar, Palk Bay and the southwest coast. The Central Marine Fisheries Research Institute, Cochin had taken up a project in 1980 to study the distribution, exploitation, export and depletory trends of gorgonids. The study revealed that a total of 36.4 tonnes (dry weight) of gorgonids valued at Rs. 9.9 lakhs was removed from our coastal waters during 1975-1984 and this included a record harvest of 14.7 tonnes during 1978-1979. When export oriented exploitation of gorgonids started in 1975 large specimens comprising 10-15 per kg were fished from virgin grounds, but from 1982 very small ones comprising 40-50 per kg were heavily exploited. During 1975-1992 a total of 106 tonnes of gorgonids valued at Rs. 35.6 lakhs

were exported from India. The above figure does not reflect the total quantity of gorgonids obtained from the Indian beds because undersized specimens, which had no export value, were discarded at the collection centres. The price per kilogram during the above period fluctuated from Rs. 1.8 in 1976 to Rs. 204 in 1991. If large specimens which are capable of producing more larvae per spawning are removed in bulk the replenishing capacity of the bed will be affected.

The seahorse

The seahorse is a small fish which attaches itself with its prehensile tail to the seaweeds found at the bottom of the sea. The average dry weight of a specimen is about 5g. These animals are commonly found in some areas of the Gulf of Mannar and during 1988-1992 a total of 22 tonnes consisting of 44 lakh specimens was exploited and exported from the Gulf of Mannar alone. The export price per kilogram of this fish was Rs. 4,700/- which is very high compared to the export price of quality prawn. This gives an idea about the damage caused to the seahorse population within a short span of about five years. Importing countries, mainly Philippines and China, utilise seahorse for making some drugs of very high value.

The 'Nakhla'

Another non-conventional group which has appeared in the export market recently is the 'opercula' of gasrtopod carrying the trade name 'Nakhla'. These are circular, oval, or card shaped structures for closing the opening of any gasrtopod shell, when the animal retreats. Compared to the whole shell the weight of the operculum of a shell is very negligible. The demand for these opercula in foreign countries accelerated the fishery of gastropods in many parts of the Indian coast.

During 1988-1992 a total of 8.5 tonnes of 'Nakhla' valued at Rs. 14.6 lakhs was exported from India.

The shark fin

Shark fin is being exported from India since the last several years. The Central Institute of Fisheries Technology has developed a technique for extraction of rays from shark fins. Shark fin rays are used mainly for the preparation of soup which is a delicious food.

It is clear from the above case studies that many of our non-conventional marine resources have become quite dear in foreign markets in the recent past. Shark fin and seahorse were exported under the pretext of making 'soup' and gorgonids as 'curios'. But their actual use or end products made thereof are not yet disclosed by the importing countries.

Bio-prospecting is high on the agenda of the western and transnational corporate biotechnology sector. Apart from generating awareness about such issues and creating a local system to deal with these situations it is also necessary to arm ourselves with strong national laws to protect our bio-resource base and stop such looting and plunder.

Marine sponges assumed importance in 1950 with the discovery of Arabinose nucleosides, a chemical compound which is quite useful in the treatment of blood cancer and malignant tumours in man. This discovery triggered a world wide interest in the biochemistry of sponges. Investigations carried out recently have shown that sponges contain many effective compounds which can fight HSV-1, HSV-2, VZV and Herpes encephalites.

There is no record of large scale export of sponges from India. But there are evidences to show that Indian Ocean islands such as Seychelles, Male, Madagascar and Mauritius are being thoroughly investigated by universities and the pharmaceutical industry for some selected species of sponges. The lack of information on the availability and distribution of various sought-after species is the main hurdle with regard to the utilisation of sponges found in appreciably good numbers throughout the coast of India.

The discovery of Prostaglandins such as PGE, PGF, PGE-2, PGE-2 alpha, etc. from the Caribbean gorgonid *Plexaura homomalla* (Esper) in 1969, trigged off a world wide hunt for the species or its congeners. Prostaglandins or the derivatives thereof now serve as wonder drug for many a disease in man. Their clinical possibilities including pharmaceutical uses have led to the stepping up of their production on a commercial scale. Hence, the present exploitation of gorgonids of Indian origin may be said to be a part of the world wide hunt for raw material at a cheaper rate.

Seahorse is used in Chinese medicine as an aphrodisiac. The trade is huge in both volume and value, and is causing

considerable concern in many parts of the world. Hong Kong, Korea and Japan are the major countries now controlling the world seahorse trade. Now, considering the depletory trend, many countries have even taken steps to fish them sustainably and to resort to their cultivation and sea-ranching in the affected areas.

Considering the potential of extracting bioactive substances from marine animals, research is being undertaken by the universities and government research institutions. So far many bioactive compounds with pharmaceutical potential have been isolated from an array of marine animals and plants.

The animal wealth of India is dwindling at an alarming rate due to various man-made and other reasons. It is estimated that 15-20 % of our animal wealth may get destroyed by the turn of the present century. Hence there is every possibility that some of our animal resources may get fully depleted before they are properly studied or documented.