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88. INDIAN BIVALVES AND GASTROPODS: STRATEGIES FOR PRODUCTION AND MARKET DEVELOPMENT

P. K. Swamy[1], K. Jayaraman[2] and P. Selvaraj[2]
[1] *The Marine Products Export Development Authority, Tuticorin*
[2] *Department of Fisheries Economics, Fisheries College, Tamil Nadu Agricultural University, Tuticorin.*

ABSTRACT

Techno-economically viable bivalve culture systems have been evolved and are under use in several countries. The tremendous potential of cultured shellfish resources to food supply and rural employment is widely claimed. In India, rapid strides have been made on culturing clams, mussels, edible oysters, windowpane oysters and pearl oysters. However, these aquaculture technologies have not been undertaken on commercial lines due to constraints like shortage of seed, lack of demand, lack of awareness about the potential of these resources in alleviating poverty and malnutrition, and in providing employment and increasing income. More importantly, the role and efficiency of various fish marketing systems in India need to be studied before encouraging production on a massive scale. Therefore, identification of constraints to marketing of these cultured shellfish, and evolving and implementing suitable strategies to market them successfully merit the attention of policy makers.

The potential of the cultured shellfish resources in providing cheap animal protein and additional employment, in improving the socio-economic status of the users, in exploiting the fisheries optimally and, in increasing the foreign exchange earnings are discussed in the backdrop of the fish marketing systems in India. The constraints to production and to domestic and export marketing of the cultured shellfish resources are identified and needed strategies are presented. The need to improve the efficiency of the fish marketing systems is emphasised.

INTRODUCTION

Harvesting of unexploited and underexploited fishery resources largely depends on the scope for marketing fish species and fishery products. The potential for domestic as well as export marketing of them has to be explored. Some of the strategies that may be relevant to bivalves and gastropods are presented below.

SCOPE FOR DOMESTIC MARKET DEVELOPMENT

The development of domestic market should be preceded by an assessment of the regularity of or the certainty in the supply of bivalves and gastropods. If the supply cannot be assured marketing development efforts will be a waste of funds and time. Stock assessment surveys to be carried out by fishery biologists, are a must. Publicity and propaganda can be used to prepare the consumers psychologically to buy and consume bivalves and gastropods.

SCOPE FOR EXPORT MARKET DEVELOPMENT

Aquaculture of shell fishes like mussels, clams and pearl oysters offer vast scope for entering into international trade arena. Techno-economically viable mariculture methods have been developed in India. It is interesting to note that efforts have already been taken to culture pearl oysters in Tamil Nadu jointly by the Tamil Nadu Fisheries Development Corporation and the Southern Petro-Chemicals Industries Corporation (SPIC).

a) *Export trade in clams*

Among the molluscan resources of India clams top the list. They are distributed along both the coasts of the country. *Meretrix casta*, *Katelysia opima* and *Villorita cyprinoides* are the three species that mainly support the clam fishery. The clams are fished by hand picking or with slop nets. Clams are exported in three forms : frozen clam meat, canned clam meat and clam meat pickles.

i) *Frozen clam*

The export of frozen clams started during 1981 and since then the export trade has been showing an increasing trend. Japan is the major importing country. The quantity and value of frozen clam meats exported to the foreign markets from the year 1981 to 1984 are given in Table 1.

The export of frozen clam meat, which was 15.6 t rose to 1085.8 t and from a Rs. 0.11 million to 15.3 million in terms of value in just four years. It is expected that the trade will flourish in the coming year also.

ii) *Canned clams*

During the decade, 1975 to 1984, canned clams were exported only to two countries. Oman imported 154 kg worth Rs. 4423 in 1975 aed then, the UAE imported about 10,070 kg worth Rs. 1,85,794 in 1981. Since then this item has not been exported.

iii) *Clam meat pickles*

Clam meat pickles were exported to UAE in 1981 and to Japan in 1982. The UAE imported 1600 kg worth Rs 28,212 and Japan imported 9192 kg worth Rs 61,416. This item has not been exported after 1982.

b) *Export trade in mussels*

The export of canned mussels started in 1975. The exports of canned mussels are given in Table 2.

TABLE 1.

Importing country	1981	1982	1983	1984
		(in kg)		
Japan	15,600 (1,11,340)	3,95,696 (84,42,325)	5,93,754 (73,60,026)	1,07,2383 (1,50,99,902)
Kuwait	—	—	—	13,372 (1,50,930)
Federal Republic of Germany	—	—	12,422 (1,30,228)	—
U. S. A.	—	91 (3,500)	2,446 (117,517)	—
U. A. E.	—	1,643 (32,743)	—	—
Total	15,600 (1,11,340)	3,97,430 (84,78,568)	6,08,622 (76,07,771)	10,85,755 (1,52,50,832)

(Source : MPEDA, Cochin, 1984)
(Figures in parantheses indicate value in Rupees)

TABLE 2

Importing country	1981	1982	1983	1984
Saudi Arabia	—	407 (12,944)	1,526 (48,928)	—
U. A. E.	—	—	—	77 (4,287)
Oman	123 (3165)	—	—	—
Total	123 (3,165)	407 (12,944)	1526 (48,928)	77 (4,287)

(Source : MPEDA, Cochin, Year 1984)
(Figures in parantheses indicate value in rupees)

TABLE 3

Importing country	1981	1982	1983	1984
		(in kg)		
Kuwait	—	10,000 (81,000)	2,00,000 (1,28,376)	3,00,000 (2,30,179)
S. Arabia	200 (12,000)	—	—	3,24,200 (2,09,361)
S. Yeman	—	—	15000 (1,25,949)	—
U. A E.	—	—	2,00,000 (1,13,691)	30,000 21,587
Total	200 (12,000)	10,000 (81,000)	5,50,000 (3,68,016)	6,54,200 (4,61,134)

(Source : MPEDA, Cochin, year 1984)
(Figures in parantheses indicate value in rupees)

c) (i) *Export of oyster*

There has been no effort to culture edible oyster commercially, and/or to export edible oyster. The MPEDA has received enquiries from foreign buyers for importing frozen oyster meat. Concerted efforts to culture edible oysters and to export them would help india earn more foreign exchange.

c) (ii) *Export trade in oyster shell powder*

Oyster shells from oysters fished from wild waters are exported in powder form. The export of this product started in 1981 and since then, the trade has been growing encouragingly. The exports of this item are given in Table 3.

d) *Export trade in ocean pearl*

Pearls from pearl oysters fished from wild habitats were exported for the first time in 1975 About 2080 kg of ocean pearls valued at Rs 5086 were exported to Taiwan in 1975. This item has not been exported after 1975. It is expected that this trade will revive soon since efforts to produce artificial pearls through culture methods are being done in Tamil Nadu and Gujarat.

e) *Export trade in chank meat*

The chank fishery has been well documented and has been in existence in Tamil Nadu, Kerala and Gujarat coasts. The chank shells are used to make bangles which are quite popular in West Bengal, and the chank meat is consumed domestically. The traditional chank divers of Tuticorin, the "parawas", started consuming chank meat since the famine of 1877. The production of full size chank shells was about 14,29,940 shells during 1982-83r Each chank is estimated to yield 20-100 g flesh depending upon the size. Assuming an average yield of 60 g per chank the total chank meat production can be estimated to be 85,796 kg. The meat is sold in measures, each measure weighing 2 kg. One measure of meat is sold from Rs 15/- to 20/- depending upon demand and supply. However, the export price for chank meat is 2-3 US $ per kg (FOB). This means that the export of the estimated 85796.4 kg could earn a foreign exchange between Rs 23,16,520 and 34,74,780. The foreign exchange earning could well increase since the reported production may be inaccurate owing to the fact that the fishery being a monopoly of the State Government in Tamil Nadu, the divers do not bring all the shells collected to the shore. The MPEDA has received enquiries for import of frozen chank meat upto 300 t per annum by Japanese buyers. The chank meat meant for export should be boiled for 4 mts, the shells and guts be removed and and sorted into 20/30 and 30/60 pieces per kg and frozen and packed as 1 kg units in polythene bags. Twelve such bags are packed in one master carton.

The major constraint in developing export trade in chank meat is the monopoly nature of the fishery, as is the case in Tamil Nadu.

Because of this, the divers sell chanks illegally to private parties since they offer higher price than the State Department of Fisheries. Hence, the production figure for chanks are believed to be under estimated.

f) *Export of molluscan shells*

Molluscan shells and corals possess fascinating ornamentation and eye catching designs and colours unparallelled in the living world. The molluscs are popular among the common man as ornaments, currency and as panacea to ward of evil spirits and had tremendous impact on Indian tradition and economy. Besides being used as raw material for many calcium carbonate based industries as well as domestic appliances, they are used in exquisite handicrafts like rings, bangles VIP garlands, eve chains, necklaces, ear rings and studs. They are also used to make household articles like table lamps, bathi stands, and ash-trays. The shells are used as a base for mounting flower pendent for key chains, lockets of jewellery, milk feeder for babies etc and fair sized shells are carried with sceneries and greetings which serve as valuable presents. Further more, the various items of curios made out of these shells include models of antelope, deer, dancing peacocks packing and sea gulls, wading ducks, dancing beauties, replica of big mansions and other dolls and models.

The demand for polished shells and handicrafts thereof, at home and abroad encouraged an entrepreneur to start cottage industry producing beautiful curios and serveral utilitarian objects in Tamil Nadu, chiefly in the Ramanathapuram district. There were about 25 small establishments dealing with these objects in that district in 1976. The export demand for these items are reported to be high, especially from the E.E.C. (Federal Republic of Germany). Efforts should be made to develop this small scale business into an export trade and the MPEDA can take steps in this regard as this would increase our exports and foreign exchange earnings.

CONCLUSION

The constraints to the production and marketing of shell fishes like mussels, oysters, clams etc need to be looked into immediately to provide cheap animal protein and additional employment, to increase production and improve the socio-economic status of the producers, to exploit the fishery optimally and, last but not the least, to increase the foreign exchange earnings.