

DOMESTIC FISH MARKETING OPPORTUNITIES FOR MARINE FISHERIES SECTOR IN INDIA*

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Introduction

Fisheries have emerged as the fastest growing food production sector in the Indian economy. The market performance has transformed fisheries from subsistence sector to the status of a multi-crore industry during the last six decades. Besides, serving as sources of income, employment, livelihood, food security, the sector also provides a comparatively cheaper source of animal protein to the population. Fish accounts for 15-54 per cent of the animal protein intake in Asian countries, which contributed 63.17 per cent (2003) of global fish production (Modayil, 2005)

The fish production (both marine and inland) of the country has also increased from 0.75 million tonnes during 1950-51 to 6.4 million tonnes in 2003-04. This increase in production has been possible due to the improvements in harvesting technologies, post-harvest fishery infrastructure, product diversification, and consistent demand in the internal and export market and developments in the processing sector. The marine fish landings alone has been valued at Rs.13,019 crores at the landing centre level during 2004, while the value at the final consumer point is estimated at Rs.22,653 crores (Sathiadhas *et al*, 2005). In the export side, the share of Indian seafood in the global fish trade is about 2.42 per cent

(2003-04). The current earnings (2004-05) from Indian sea food export is estimated at Rs.6646 crores through an export of 4.62 lakh tonnes of seafood. The contribution of this sector to the Indian GDP also registered an increase from about 0.46 per cent in 1950-51 to 1.16 percent in 1999-2000, which now stands at around one per cent forming about 4.12 per cent of the agricultural GDP. Besides, the sector provides employment to about 12 lakh fishers in (primary sector), 15 lakh people in (secondary sector) and another one lakh in the tertiary sector. (Sathiadhas, 2005).

Despite the improvements in the sector, the development of the fishing industry has not been uniform and the benefits of the development are also not well distributed among their different components. The export market has received the maximum attention whereas the domestic fish marketing has not received the due attention, it deserves. This is in spite of the fact that only 15 per cent of the fish production is exported and the remaining is channellised in the domestic fish markets only. Hence, it will be appropriate to analyze the opportunities that exist for the domestic fish marketing vis-à-vis export marketing and the ways of improving the earnings from the sector to achieve a comprehensive development of

this vital sector of the Indian economy. With this theme in focus, this paper focuses on the following issues, which will be helpful to evaluate the opportunities that lie ahead of us and prepare ourselves to avail them at the right time.

Growth of fish production in India

The growth of fish production in India (both marine and inland) is given in Table 1. It is seen that the share of marine fish production has declined from 71.8 per cent in 1950-51 to 48.20 percent in 2003-04. The decline has been gradual over the years and the loss is offset by the increasing share of the inland fish production, which increased from 28.99 per cent to 51.20 per cent in the same period. The average annual compound growth rate ranged from 3.35 per cent to 4.62 per cent during the last five decades. The reason for the stagnation in marine fish production can be attributed to the large scale mechanization, more number of fleets deployed to catch the limited resources leading to indiscriminate harvest of certain fishery resources, consistent export demand for certain fishery resources like shrimps and lack of any proper regulatory measures for conservation/management. On the other hand, the production from inland resources increased mainly because of the growth of carp culture, scampi culture and catch from other inland resources.

Domestic marketing

Marketing of fishery resources, unlike agricultural or other products faces complex problems mainly due to high perishability. The fishery resources need a lot of effort in assembling, storing, grading and other

marketing functions. Marketing of fish or market is so important that around which all the other economic activities have to be based. Any amount of research on processing or production or technology has no meaning, if the market for fish product is not well developed. That is why market is called the *Manthra* for bringing remarkable changes in the consumption pattern of fish. (Rao, 2003)

In fish marketing the general hypothesis is that the conditions of **monopsony** and **oligopsony** characterize the fish marketing structure in India at various stages and hence the fishermen do not get advantage of high price prevalent in consumer market (Sathiadhas and Narayanakumar, 1994). The value of marine fish landings in 2004 is estimated at Rs.13,019 crores at landing centre level and Rs.22,653 crores (Sathiadhas, 2005) at consumer level, which clearly indicates the magnitude of marketing margins consumed by the intermediaries or middlemen.

The growth of fish production and overall development of fisheries sector depend largely on an efficient marketing system. In India, about 85 per cent of the catch is channelised to the internal marketing system and the rest for exports. Hardly five per cent of fish in the internal marketing system is marketed by cooperatives and the rest is through private marketing agencies and traders. In addition to this, the difference between the price of the fish paid by the consumer and that received by the fishers is considered to be large (Sathiadhas, *et.al*, 2003). The efficiency of a marketing system is

measured mainly by the producer's share in the consumer's rupee, which indicates the actual amount realized by the producer for his produce and how much is gone in terms of marketing costs and margins. Presently the marine fish marketing in India is supply driven and the fishermen do not have any say in fixing the price of their catch and are left at the mercy of auctioneers or traders. In addition, the intrinsic characteristics of marine fish marketing like perishability of the produce, seasonality and low marketable surplus forces fishermen to make distress sales. (Sathiadhas and Narayanakumar, 1994)

Efficiency of the Marketing System

The efficiency of marketing system is indicated by the proportion of the consumer rupee that reaches the producer. The higher the share the more efficient is the system and *vice versa*. The cost of marketing and the number of intermediaries decide the share of marketing margin in the consumer rupee.

In a case study conducted in the East Godavari district of Andhra Pradesh, (1) the price spread (gross marketing margin), (2) percentage share of the producer in the consumer rupee and (3) the percentage share of marketing margin in the consumer rupee, which are considered as the indicators of the marketing efficiency were calculated.

The results indicated that the price spread (which is the difference between the price paid by the consumer and the price received by the producer) ranged from Rs.10 per kg for oil sardines to Rs.33 /kg for penaeid prawns during the year. Quality

fishes like mackerel and seer fish recorded the price spreads of Rs.18 and Rs.32 respectively.

The percentage share of fishermen in the consumer rupee (PSFCR) was maximum for varieties like penaeid prawns annually at 76.87 per cent followed by sharks (69.57%), pomfrets (68.89%), rock cods (68.57%), thread fin breams (67.21%) and seer fish (68.53%). These varieties earned the fishermen a consistent share of the consumer rupee. This is due to the consistent demand in the distant internal market as well as the external market. Across the quarters also, these varieties earned a consistent share of the consumer rupee.

The percentage share of marketing margin in the consumer rupee (PMMCR) was maximum for oil sardines (50.89%), followed by goatfish (43.12%) and barracudas (46.36%). The results indicated that the proportion of intermediaries involved in this marketing channel and the cost of marketing are high. In case of oil sardines, the local preference is less and it is mostly marketed in Kerala and Tamilnadu.

At all India level, judging from the trend of fishermen's share on consumers' rupee during 1989-90, 1996-97 and 2003, the fish marketing efficiency has increased over the years (Table 2) for most of the varieties. During 2003, fishermen's share in consumers' rupee ranged from 45 per cent for silver bellies to 75 per cent for seer fish. Although the share of producers increased over the years for quality fishes like seer fish and Pomfrets, there is enormous scope to enhance the marketing efficiency of low quality fishes such as silver bellies and

lizardfishes in the internal markets. Marketing costs including transportation range from 6 per cent to 13 per cent of the consumer's rupee.

Export marketing

The seafood export from India has earned substantial foreign exchange over the years. The growth of seafood export between 1980-81 and 2004-05 is given in **Table 3**. It is seen that the quantity of export has increased from 75,591 tonnes to 4,61,329 tonnes during this period, with an annual average compound growth rate of 7.50 per cent. The value earned from seafood export also has increased from Rs.234.84 crores to Rs.6,646.69 crores in the same period with an average compound growth rate of 14.31 per cent. The unit value realized per kg of fish also increased from R.31.07/kg to Rs.144.08/kg with the average growth rate of 6.33 per cent. Our share in the global seafood trade of US \$58.2billion is about 2.5 per cent.

The important component of our seafood export basket is frozen shrimps, which account for about 60-65 per cent in volume and 80-85 per cent in value. United States, European Union and Japan are the three major importers of Indian seafood. However, during 204-05, the export to US declined from 53,153 tonnes (valued at US\$365.84millions) in 2003-04 to 50,045 tonnes (valued at US\$345.52millions) in 2004-05 due to the imposing of anti-dumping charge against India. This gives a message that we have to get prepared against such rules of the global trade in the days to come to remain in the global market scenario.

In our seafood export, we have been mostly exporting raw materials only in the form of frozen shrimp, fish, crab and other products. The share of value added fish products in our export is around 17 per cent (**Table 4**). This Table emphasis the fact that we have good scope to increase value added products in our export basket and the need to explore all possibilities of including them.

Fishery infrastructure

For the development of any industry, infrastructure is an essential component. In fishery also, the post-harvest infrastructure plays a vital role in the development of the industry in both the domestic and external markets because of the highly perishable nature of fish, bulk production, diversity of production and consumption of fish. The existing infrastructure for fish marketing can be grouped as two categories

1. Physical infrastructural facilities in primary markets
2. Infrastructural facilities in the distribution system

The physical infrastructural facilities include the landing centres, harbours, landing jettys and related structures. The infrastructural facilities in the distribution system include the freezing plants, cold storage units, ice plants and fishmeal plants. The growth of this infrastructure during 1992-2005 is given in the **Table 5**

It is seen that the freezing plants, ice plants have increased in number and their capacity in the last 13 years. This is an indication of higher frozen seafood components in our export and the

importance given for frozen seafood. The increased uses of ice both in the domestic and export market is the reason for the growth in ice plants. The use of ice and its importance in preserving the fish has been realized by the fishers as well as the consumer, which has resulted in their increased usage. These developments should be used effectively in the internal marketing of fish, wherein the fish is being transported to more than 200-500km from the landing centres with the help of refrigerated containers and ice packed grades. This is a positive step for the development of distant internal markets in our country, which should be made use of effectively.

Conclusion and policy implication

The above discussions highlighted the growth of fish production in India, the internal fish marketing system and its efficiency, the export market and the role of fishery infrastructure in the development of the marketing systems. Based on the above discussion and different studies conducted in the Price Behaviour and Marketing systems of marine fisheries at different maritime states in India, the following guidelines are indicated, which will be helpful in developing fish marketing system in India

- ❖ **Balanced importance should be given for both domestic and export market** due to the observation that 85 per cent of catch is channelled to the internal marketing system.

- ❖ **Cooperative fish marketing should be strengthened** since hardly 5 per cent of the fish in the internal

marketing system is marketed by cooperatives and the rest is through private marketing agencies and traders. This practice can be extended to perform common marketing functions like assembling, grading and storing, which will help to improve the quality of the product and also enhance its value, besides minimizing the share of the middlemen

- ❖ The price behaviour of certain fish varieties face wide fluctuations both across and within the seasons and hence **there is a need for regulation of fish marketing on lines of the agricultural commodities.** Though this is a difficult task considering the intrinsic characteristics of the marine fish produce, to a considerable extent, this regulation can be achieved by establishing suitable fishery infrastructure like cold storage and freezing plants at least for a cluster of landing centres and located at an optimum distance from the selected landing centres/markets.

- ❖ Thrust for value added products in domestic market also taking advantage of the present day life style of fast food culture by marketing ready to eat or ready to cook fish products. **Links with retail outlet like Food World, Nilgris and other reputed Super Markets can be established to improve the retail fish marketing.**

- ❖ Exploring the possibilities of providing support price for commercially important varieties to safeguard the interests of both fishermen and the consumer.

- ❖ Identifying and cataloguing of pharmaceutically important marine products

❖ Utilisation of idle capacity of processing plants for internal marketing

❖ **The use of ice in fish preservation should be given more importance** and it should be prepared from good quality water and used in appropriate proportion.

❖ **The hygienic fish handling at the landing centres**, whole sale and retail markets should be ensured by providing adequate fresh water supply, drainage and protecting the fish from flies, rodents, birds and animals in the marketing yards. It is more important that the value of fish can be improved by following these practices, since the spoilage is reduced to a greater extent.

❖ **Sun drying of fish in sandy beach should be strictly stopped** and moreover good quality salt should be used

❖ **Species-wise sorting should be practiced immediately after the catch.** Shrimps should be graded, beheaded, peeled and de-veined as soon as possible

❖ **The quality standards like fixing limits for heavy metals and microbial limits etc** should be imposed. The bivalves as far as possible should be depurated before shucking

❖ **Proper and cost-effective preservation facilities should be provided at all retail outlets.** Preservation or cold storage units can be established on

cooperative basis or by the local bodies extending the facilities by nominal charges. The fish retail vending stand developed by the NATP funded Studies on Fisherwomen in the Coastal Ecosystems of Andhra Pradesh, Tamilnadu, Karnataka and Kerala may be popularized by providing institutional support for buying them.

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Table 1 Growth of fish production in India 1950-2004

Year	Marine fish production (Tonnes)	Percentage of total fish production	Inland fish production (Tonnes)	Percentage of total fish production	Total fish production (Tonnes)
1950-51	5.34	71.01	2.18	28.99	7.52
1960-61	8.80	75.86	2.80	24.14	11.60
1970-71	10.86	61.85	6.70	38.15	17.56
1980-81	15.55	63.68	8.87	36.32	24.42
1990-91	23.00	59.96	15.36	40.04	38.36
1991-92	23.47	57.85	17.10	42.15	40.57
1992-93	25.76	59.01	17.89	40.99	43.65
1993-94	26.49	57.04	19.95	42.96	46.44
1994-95	26.92	56.21	20.97	43.79	47.89
1995-96	27.07	54.70	22.42	45.30	49.49
1996-97	29.67	55.48	23.81	44.52	53.48
1997-98	29.25	54.54	24.38	45.46	53.63
1998-99	26.96	51.24	25.66	48.76	52.62
1999-00	28.34	50.10	28.23	49.90	56.57
2000-01	28.10	49.12	29.11	50.88	57.21
2001-02	28.30	47.52	31.26	52.48	59.56
2002-03	29.90	48.23	32.10	51.77	62.00
2003-04	29.40	48.20	31.60	51.80	61.00

Table 2- Percentage share of fishermen in consumers' rupee for different varieties of fish (1989-90 to 2003)

Name of Fish	1989-90 (%)	1996-97 (%)	2003 (%)
Seer Fishes	63	68	75
Pomfrets	62	60	65
Mackerel	54	50	72
Ribbon fishes	41	48	53
Tunnies	55	45	63
Catfishes	49	56	59
Barracudas	53	40	66
Silverbellies	41	30	45
Lizard fishes	42	35	56
Goat fishes	37	57	59
Rays	39	47	58
Whitebait	41	40	61
Threadfins	46	42	57

Source: Socio Economic Evaluation and Technology Transfer Division, CMFRI

Table 3 Growth of sea food export in India 1980-81 to 2004-05

Sl.No.	Year	Seafood export		Average unit value (Rs./kg)
		Quantity (in tonnes)	Value (Rs. corres)	
1	1980-81	75591	234.84	31.07
2	1981-82	70105	286.01	40.80
3	1982-83	78175	361.36	46.22
4	1983-84	92187	373.02	40.24
5	1984-85	86187	384.29	44.59
6	1985-86	83651	398.00	47.58
7	1986-87	85843	460.67	53.66
8	1987-88	97179	531.20	54.66
9	1988-89	99777	597.85	59.92
10	1989-90	110843	634.99	57.29
11	1990-91	139419	893.37	64.08
12	1991-92	171820	1373.85	80.08
13	1992-93	209025	1768.56	84.61
14	1993-94	243960	2503.62	102.62
15	1994-95	307337	3575.27	116.23
16	1995-96	296277	3501.11	118.17
17	1996-97	378199	4121.36	108.97
18	1997-98	385818	4697.48	121.75
19	1998-99	302934	4627.00	152.74
20	1999-00	340000	5096.00	149.88
21	2000-01	440473	6443.80	146.29
22	2001-02	424470	5957.05	140.34
23	2002-03	467297	6881.1	147.26
24	2003-04	412017	6091.95	147.86
25	2004-05	461329	6646.69	144.08
Average annual compound growth rate		7.50	14.31	6.33