

18 MARKET FLOW, PRICE STRUCTURE AND FISH MARKETING SYSTEM IN ASSAM - A CASE STUDY

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Abstract

Fish marketing is a flourishing trade in the economy of Assam as it is a preferred food item of 95 % of the state's population. There is a wide gap between the present supply and requirement of fish, which is partially met by the supply from other fish producing States. The distribution process of fresh fish, dried fish and fish seed has been discussed in this paper. There is a high consumer preference for Indian major carps. Large number of intermediaries are involved in the distribution process of fresh fish marketing. Women are also involved in the retail trade in the markets and door to door sales in some selected parts of Kamrup District. A well organised marketing network is essential for distribution of fish in the State at reasonable price. The study reveals that the Jagiroad wholesale dried market acts as the nucleus of dried fish trade for the entire North eastern India. A well organized marketing network is essential for distribution of fish in the State at reasonable price. The present study highlights the prevailing marketing system, market channels, market availability and market-related constraints in the growth of fish marketing in the state.

Introduction

In spite of high potential of inland fishery resources, the State of Assam is yet to achieve self-sufficiency in fish production. About 95 % of the state's populace relish fresh fish. With an estimated per capita fish consumption of 12 kg, the state needs A minimum of 2.96 lakh tonnes, which is insufficient to meet the internal demand. Hence, the deficit is met by the supplies from Andhra Pradesh, West Bengal and Bihar. Fish is marketed in three major forms in the state viz., fresh fish, dried fish and fish seed. In view of the increasing demand for fish in the State, fish marketing has to play a vital role in the State's trade and economy. Some institutional changes are very much needed so as to bring more economic prosperity for fishermen who are often exploited by the middlemen (Rao, 1991). With this background, the present study was carried out to analyse prevailing marketing system, market flow of fish, their market availability and constraints to the growth of fish marketing in Darrang, Kamrup and Nagaon Districts of Assam.

Material and Methods

The study was conducted during January to July 1999 and data was collected from different fish markets in three Districts viz., Kamrup, Darrang and Nagaon. Data on fish seed markets were collected in June, which is the peak season, during prime market

hours (morning) at Rangia of Kamrup. Information on the dried fish markets was gathered in March at Jagiroad of Nagaon Districts. The fresh fish markets were observed through out the study period in the selected fish markets of Kamrup and Darrang Districts. The data, collected by interviewing the sellers and purchasers, were analysed using sample tabular analysis.

Results and Discussion

Fish production and requirement of fish

Animal protein has great demand in Assam, as 95 % of its population is non-vegetarian. Of the various sources of animal protein, fish enjoys high consumer preference, because of its delicious taste and nutritional value. The high demand for fish coupled with its insufficient production and supply, has led to continuous inflow of fish from other States. The requirement of fish, which was 1.05 lakh tonnes during 1986-87, has increased up to 2.30 lakh tonnes in 1995-96 (Table 1).

There was a gradual increase in the demand of fish from 1986 to 1991 but after 1991, there was escalation in demand (Table 1). The internal production of fish is not enough to meet the growing demand of fish in the State. To combat outflow of money and to strengthen the economy of the State, the potential for fisheries resources (Table 2) are to be appropriately utilised. In spite of enormous potential, culture fisheries contribute only 26 % of total fish production offering immense scope for further development.

Fresh fish marketing

High market demand was observed among the consumers for the fresh fish of Indian major carps followed by exotic varieties of carp and catfishes. Locally available fishes were costlier than those brought from other States due to their freshness and taste. The fish coming from outside was preserved in ice. Frequent political disturbances have often led to the collapse of market system and price equilibrium thereby causing manifold

increase in the price of local fish. Guwahati is the main landing-cum- consumption centre of the State. Paltanbazar and Panbazar are also large centres having modern facilities like ice plants, proper drainage, disposal system and permanent sheds. The fish coming from outside is first assembled in Guwahati and then it distributed throughout the State and also to the other North-eastern States. Now due to the improved transportation facilities, outside fish directly arrives at the market places such as Tezpur, Nagaon, Tinsukia, Dibrugarh, Borpetaroad, Shillong and Dimapur. With the ever increasing requirement of fish, the quantity of fish coming from outside is also increasing. The peak marketing seasons observed for locally available fish and outside fish were January to April and May to December respectively.

Harvesting of fish from the rivers is done in a systematic manner by contract system. The rivers are divided into different blocks, which are then auctioned to a contractor or a society for getting the fishing rights for one year. The contractor, in turn, appoints a person for each block called *Mahaldar* on monetary agreement to look after the business. The fishes are disposed in the landing centre itself by auction system. The wholesalers of Kamrup District purchase the local fishes assembled in the landing centre at Uzanbazar and are subsequently bring to main market of Guwahati for wholesale as well as retail sale. The retailers also take the fish to the terminal market of the city and other places from *Mahaldar* and wholesalers. Most of the fishes sold in the terminal markets are brought by the fishermen or his family members. Entire load of the fish brought by the respective sellers is purchased at a time by a negotiator. Mostly the women members of the family bring the fish catch to the market for sales collected by male members. Some of these women are also involved in door to door sales taking the fish in bamboo basket or motor tube.

The disposal of fish from capture fisheries and culture fisheries is undertaken in the following prominent market channels.

- I) Fishermen ► *Mahaldar* ► Commission agent at terminal market ► Wholesalers ► Retailers ► Consumer.
- II) Fish farmers ► Wholesalers ► Retailers ► Consumer.

Two main categories of fish available in the market are local fish and outside iced fish. The study revealed that Indian major carps constitute the major portion of the fish available in the market followed by catfish and other miscellaneous varieties. The local as well as outside fishes available locally in the market is shown in Table 3.

Among the Indian major carps, rohu, catla and mrigal are the important species available in the market. Rohu and catla are coming from outside also, whereas mrigal is available in the market comes from local places only. Similarly other carps like *Labeo gonius*, *L. calbasu*, *Cirrhina reba* and exotic species like silver carp, grass carp and common carp are also sold in the retail market. Although catfishes are mostly locally available in the market, some small percentage of catfishes like *Clarias gariepinus* (Thaimagur) and *Heteropneustes fossilis* (Singhi) are coming in live condition from Bihar and West Bengal. These varieties are brought to the market by the women vendors through train. Major catfishes available in the market during the study period were, *Aorichthys seenghala*, *Clarias batrachus*, *Clarius gariepinus* and *Heteropneustes fossilis*.

Market arrivals of fresh fish from outside

In 1975 fishes from Kanpur, Lucknow and Howrah were reported in Paltanbazar market of Guwahati. Then from 1981 onwards fish started coming from Andhra Pradesh. The peak marketing season for outside fishes is January to April. During January to April, on an average, 15-20 quintals of fish by train and 5 truck loads of refrigerated fish arrive in the State, whereas during the lean season the quantities drop to 10 quintals of fish by train and 2 truck loads of refrigerated fish per day. The annual total flow of fish by train and truck during 1994 to 1998 is given in Table 4. Rohu and catla are mainly coming from Kanpur, Lucknow and Andhra Pradesh while *Notopterus chitala*, *Wallago attu* and *Aorichthys seenghala* are coming from Kanpur and Lucknow. The main sources of hilsa found in the market are Bangladesh and Calcutta. During the study period *Anabas testudinius* (kaoi), singhi and thaimagur were also seen in the market coming from Bihar. Market availability and price of fish were also studied and given in Table 5

Dried fish marketing

Dried fish market is invariably associated with the fresh fish market. Freshwater as well as marine fishes were found in the Jagiroad market. Dried fish market situated at Jagiroad of Nagaon District are the largest dried fish markets in Asia which function as supply centers of dried fish to the entire Northeastern India. The peak market season is January to March and it remains closed during the monsoon season. The wholesale marketing is there only on Fridays and about 40 wholesalers were observed in the market. Normally five trucks used to come here from States like Gujarat, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal. One special kind of dried fish sold in the market was known as "Sindal". This is the costliest item of dried fish and considered as anti-malarial by local population. This is prepared by putting the smaller fishes (fingerling size) in bamboo cylinder and then sun dried. Among the freshwater groups of dried fish, most commonly found were *Channa punctatus*., *Aorichthys seenghala*, *Puntius sophore*, *Amblypharyngodon mola*, *Notopterus chitala*, *Wallago attu*, *Labeo rohita*, etc. The marine species like Bombay duck and shrimps were also found in the market.

Dried fishes are first assembled at Jagiroad wholesale market and after their arrival, they were further dried and sorted out quality wise. The marine group of fishes are coming from Gujarat , Tamil Nadu and Maharashtra. The dried fishes are disposed through the following prominent marketing channels.

I) Outside State ► Jagiroad Dried Fish Market ► Wholesalers of the North-Eastern States ► Retailers ► Consumers

II) Outside state ► Jagiroad Dried Fish market ► Wholesaler ► Wholesaler of the State ► Retailers ► Consumers

Fish seed marketing

Fish seed marketing in Assam is seasonal in nature and is confined mainly from May to September of every year. The fish seed markets are situated in the rural areas. Earlier fish seeds were collected from the river and adjoining areas and sold to farmers by

the local fish seed vendors. These fish seed vendors transport the seed in earthen or aluminum *hundies* and sell to potential fish farmers. The problems of these wild seeds are that they are not only impure on many occasions, but also not available in the appropriate time. The success of induced breeding led to the setting up of large number of hatcheries, which revolutionised fish seed production in the State. Table 6 shows the achievement of fish seed production in the state for the last 10 years.

Though the State is reported to have achieved self-sufficiency in carp seed production (Anon., 1998), the demand for seed appears to be more than the local production especially in the beginning of the season. The fish seed produced in West Bengal reaches the market of Assam by truck or train before the local producers start their production. The local seed farmers are handicapped by their inability to produce seed as early as May due to its seasonal nature and lack of adequate facilities. However, competition is still there to produce seed in advance among the seed producers to realise maximum price.

The process of fish seed marketing is totally different from that of fresh fish sales as the seeds are to be sold in live condition. Locally available carp and other fresh water fish seeds are marketed in the village areas by fish seed vendors by carrying them on their bicycles keeping in aluminum *hundies* filled with water. The hatchery-produced seed is sold by producers by packing them in steel pools and transported through out the State and other Northeastern States by means of minitrucks. The seed of Indian major carps dominates the market followed by the exotic carp varieties such as *Puntius javanicus* (Java puthi), bighead carp and thaimagur. The current market prices of the different varieties of seeds are given in the Table 7. The market price depends upon the size and variety of the seed. The fish seed coming from outside are purchased by the wholesalers and then installed in nursery ponds. In some cases they keep the seed in a section of the river by making small pools by surrounding mosquito net. Then they sell these to the retailers or fish seed vendors and they in turn supply to the farmers in the village area. Some retail sellers stock the seed in the nursery pond and raise them to fingerling size to get high price. The apparent high profitability of fish seed trade in the study area has

reportedly encouraged even some local enterprising persons to initiate steps towards starting fish seed supply centres on the bank of the river by making appropriate enclosures through net.

The flow of fish seed is mainly undertaken through the following three prominent marketing channels

- I) **Fish seed vendors ► Wholesaler ► Fish seed vendors ► Fish farmers**
- II) **Fish seed vendors ► Fish seed vendors ► Fish farmers**
- III) **Fish seed vendors ► Fish farmers**

Conclusion

The study indicates that the fish marketing system in Assam requires modernisation. Lack of adequate transport and communication facilities has confined the sale of fish to limited outlets and prevents the growth of specialised marketing. Insufficient credit and differential pricing policies are emerging as hindrance to the market development. Police atrocities and extremist activities are discouraging the producers as well as fish traders to run their business smoothly. Market regulation and quality control is not properly implemented anywhere in the State. The vast potential for inland fish production has not been tapped fully due to several production and marketing bottlenecks. Marketing system requires sufficient infrastructure development by means of providing ice plants, storage and processing facilities and improvement in transportation system. Fishermen should be motivated to start fish production including seed production and marketing through cooperative system. The government intervention in the form of providing adequate financial support will go a long way in the development of fisheries in the state.

References

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TABLE 1. Production and requirement of fish in the State.

Year	Total Fish production (lakh tonnes)	Requirement (lakh tonnes)
1986-87	0.520	1.050
1987-88	0.540	1.070
1988-89	0.580	1.070
1989-90	0.610	1.073
1990-91	0.760	1.098
1991-92	1.300	2.210
1992-93	1.400	2.210
1993-94	1.516	2.250
1994-95	1.530	2.250
1995-96	1.551	2.300

Source: State Fisheries Report, Assam

TABLE 2. Potential fishery resources of Assam

Resource	Area (lakh ha)
Riverine fisheries	2.05
Beel fisheries	1.01
Ponds and Tanks	0.25
Reservoir fisheries	0.02
Swamps	0.10
Forest fisheries	0.05
Total	3.38 lakh ha

TABLE 3. Major outside supplied and locally available fish in the market

Major imported group	Major locally available group
<i>Labeo rohita</i>	<i>Labeo rohita</i>
<i>Catla catla</i>	<i>L. gonius</i>
<i>Temulisa ilisha</i>	<i>L. calbasu</i>
<i>Clarias gariepinus</i>	<i>Catla catla</i>
<i>Wallago attu</i>	<i>Wallago attu</i>
<i>Notopterus chitala</i>	<i>Notopterus chitala</i>
<i>Aorichthys seenghala</i>	<i>Aorichthys seenghala</i>
	<i>Cirrhina mrigala</i>
	<i>C. reba</i>
	<i>Hypophthalmichthys molitrix</i>
	<i>Ctenopharyngodon idella</i>
	<i>Cyprinus carpio</i>
	<i>C. reba</i>
	<i>Clarias batrachus</i>
	<i>Heteropneutes fossilis</i>
	<i>Channa punctatus</i>
	<i>C. striatus</i>
	<i>Macrobrachium rosenbergii</i>
	<i>M. malcolmsonii</i>
	<i>Tilapia mossambica</i>

TABLE 4. Inflow of fish to the State

Year	Quantity (in quintals)	
	By train	By truck
1994	900	5500
1995	950	7500
1996	1000	8000
1997	1200	8500
1998	1350	9500

TABLE 5. Market availability and price of fish studied in some selected market

Species	Average Market availability (daily)	Average Retail Price /kg (Rs.)	
		Local	Outside
Labeo rohita	250	60-80	40-45
Catla catla	250	55-75	40-45
Wallago attu	20	100	80
Notopterus chitala	25	120	140
Aorichthys seenghala	15	120	90
Cirrhina mrigala	50	60-80	—
Clarias batrachus, Heteropneutes fossilis	10	150	—
Channa punctatus	15	150	100
C. striatus, Macrobrachium	10	35-40	—
rosenbergii,	10	60-80	—
Tilapia mossambica	10	120-150	—
L. calbasu	10	50-60	—
L. gonius	30	50	—
	30	50	—

TABLE 6. Fish Seed Production of Assam from 1986 to 1996

Year	Seed Production (million fry)
1986-87	33
1987-88	56
1988-89	84
1989-90	660
1990-91	1188
1991-92	1616
1992-93	1626
1993-94	21000
1994-95	23000
1995-96	25000

Source: State Fisheries Report, Assam

TABLE 7. Market price of different varieties of Fish seed

Species	Riverine seed(price range / 100)		Hatchery seed	
	1-1.5"	4-6"	1-1.5"	4-6"
<i>Labeo rohita</i>	Rs 60-100	250-300	Rs.20-250	150-200
<i>L. calbasu</i> And <i>L. gonius</i>	Rs. 50-70	150-200		
<i>L. bata</i>	Rs. 10-20	25-30		
<i>Cirrhina mrigala</i>	Rs.60-100	250-300		
<i>Catla catla</i>	Rs.60-100	250-300	Rs.20-25	150-175
<i>Notopterus chitala</i>		Rs. 1000		
<i>Wallago attu</i>		Rs. 1000		