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Study of Malwa mill fish market at Indore (M.P.)

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Abstract
The fisheries sector is recognized as a powerful income sector. In the February 2020 budget of Indian Central Govt. gave more emphasis on the fish production domestic and international sale. It stimulates growth of subsidiary industries and provides cheap and nutritious food. The present study was conducted in summer season (Feb - May 2019) to assess the fish marketing system and economic feature of fish market at Malwa Mill fish market, Indore (M.P). In the present study authors observed that studied fish market included fresh, preserved, live and dry fresh & marine water fishes. There were 80-85 shops on the footpath for fish marketing. Three market chains were noted in this market i.e. Fishermen to consumers, fishermen-retailers-consumers and fishermen-wholesalers-retailers-consumers. Weekly this market purchased and sold 1800-2000 kg fishes. Most of the fresh water fishes were brought from local water resources like Bilawali talab, Yashwant Sagar Dam, Kshipra River, and some parts of Narmada River belt (from Punasa Dam to Barwani distt.) while some marine fishes were brought from Bombay and Gujarat etc. Descending order of the contribution of fishes available in the fish market were as *Pangasius* (30%) > *Catla catla* (15%) > *Labeo rohita* (15%) > *Cyprinus carpio* (10%) > *Cirrhinus mrigala* (05%) > Murrels (05%) > Clarius (05%) and miscellaneous fishes (15%). The result of the survey also revealed that in general the price of fish varies from shop to shop depending upon market structure, species, quality, quantity, weight, festival, season and fish demand. Authors also observed and concluded that hygienic condition and proper permanent shop may increase the income of seller on one side by increasing rate of fish and on other side may attract more buyers.

Keywords: Malwa mill fish market, fishermen, fish species, Yashwant Sagar, Bilwali Talab, Narmada River and Gujarat

Introduction
Fish market is a place where selling purchasing of fish and fishery products. Marketing plays a very important role in economic development. The domestic fish marketing system in India is neither efficient nor modern and is mainly carried out by private traders with a large number of intermediaries between producer and consumer, thereby reducing the fisherman's share in consumer's rupee.

Fisheries marketing comprise all the activities and agencies conducting them, involved in the movement of fish or fish products from the farm or industries to the final consumers or end users. The concept that marketing is the determination of consumer needs and the purpose of the business organization should be the profitable fulfillment of this consumer needs (Beierlein and Woolverton, 1991) [7].

High material perishability and bulkiness, high species variability in size and weight, high storage and transportation costs, lack of assurances regarding the quality and quantity of the product, poor demand elasticity, and wide pricing spreads are a few of the issues with fish marketing. (Ravindranath, 2008) [1].

Apart from shortfall in production, inefficient marketing system both within and outside the state is also impeding the smooth supply and timely availability of fish in market. With likely increase in contribution from inland fisheries sub-sector, especially culture fisheries, the necessity of developing an efficient domestic marketing system assume great importance, since, the producers are concentrated in particular location while the consumers are spread countryside (Kumar *et al.*, 2010) [9]. Marketing systems of agricultural products, fish marketing is characterized by heterogeneous nature of the products with respect to species, size, weight, nutritional quality, storage quality and price (Upadhyay and Pandey, 2009) [8].

Before it reaches the final consumers, fresh fish is sold to numerous market participants and exchange locations. One of the key factors affecting the socioeconomic situation of the population and the production system in each region is the marketing system and structure. (Alam *et al*., 2010) [4].
Fish collectors commonly known as Mahajans or Aratdars procure fish from the catchers with the help of local brokers who get a profit margin or commission from the Mahajans. However, the most serious marketing difficulties seem to occur in the remote communities owing to lack of transport, ice, poor road facilities and where the farmers are in a particularly weak position in relation to intermediaries (Rahman, 1997) [2].

Materials and Methods

Study area and periods

The study was carried out in Malwa Mill fish market at Indore city. It is one of the most important and largest fish markets of Indore. Its latitude and longitudes are 22.733769, 75.870012. it has the highest elevation among major cities of Central India. The duration of fish market survey was 4 months from February to May 2019.

Survey points

Fish producers, Wholesaler, retailers, and customers were all participating in the process of gathering data.

Methodology

The survey was based on market obtaining information through a sample survey among fish farmers/ fisherman, Wholesaler, retailers and consumers. In order to study the variety of fishes of the studied area, basically the survey was based on fish market visit, interview of spot people, sample collection, capture photograph, and secondary data collection. And also used (PRA method), PRA is a group of methods to collect information from rural communities in participatory fashion (Chambers, 1992) [5].

Survey points

Fishermen/ fish producer: Fishermen sell their catch to local traders at the pond site, retailers through wholesaler in the largest fish markets, or directly to retailers present at fish markets once they have been harvested.

Wholesaler: The wholesaler plays a crucial role in the Malwa Mill fish market's fish marketing system. On behalf of the fishermen or producers, they purchase fish from them in the wholesale market and sell it at auction. Wholesaler are entitled to a set commission for performing the task, which typically ranges between 8 to 10 % of the transaction value.

Retailers: The most essential part of the marketing system is the retailer. They buy fish directly from fishermen, producers, and local merchants or through commission agents' auctions.

Consumer: A buyer who does it for nutritional purposes only while buying fish and fisheries products. It is a crucial component of the fish market.

Result and Discussion

In this survey authors observed that following points related to fish market such as.

Time of fish market: 3:00 to 9:00 pm
Location of fish market- between Rajkumar flyover to Visranti square.

Types of market- Wholesale-cum-retail
Shops: There were 80 - 85 shops were available for fish marketing.

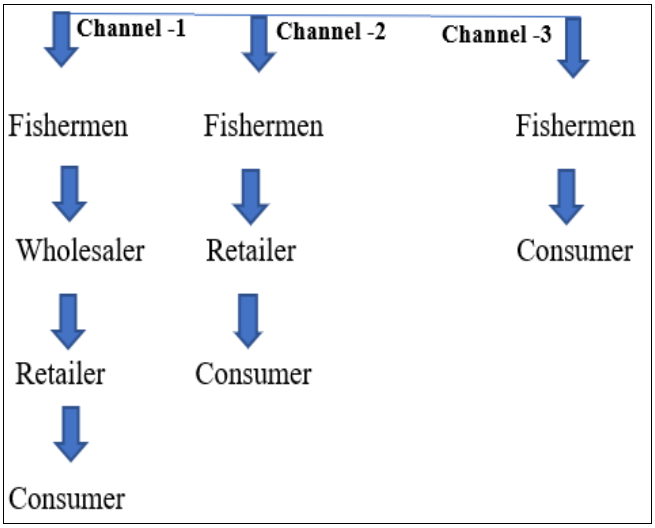
(a). Large hops-05.
(b). Medium shops- 45-50.
(c). Small shops- 30.
Gender of fish seller- 50 males and 30-35 females.
Quantity: Weekly supply of fish in Malwa mill fish market was 2100-2200 kg.
It was estimated that out of total input of fishes 30% were *Pangasius pangasius*, *Catla catla* (15%), *Labeo rohita* (15%), *Cyprinus carpio* (10%), *Cirrhinus mrigala* (05%), Murrels (05%), Clarius (05%) and miscellaneous fishes (15%).

Sources: Most of the fresh water fishes were brought from local water resources like Bilawali talab, Yashwant Sagar Dam, Kshipra River, and some parts of Narmada River belt (From Punasa Dam to Barwani distt.) while some marine fishes were brought from Bombay and Gujarat etc.

Average selling- weekly selling was observed that 1800-2000 kg.
Variety of fish: Both fresh and marine water.
Quality of fish- fresh, preserved, live and dry fishes were found there.
Status of market- seller sit on the road and sold their fishes. There were no permanent shops.

Marketing channels

Mostly three type of market chain were found in this fish market such as.



Percent contribution of different fish species in Malwa Mill fish market: Descending order of the contribution of fishes available in the fish market were as *Pangasius pangasius* (30%) > *Catla catla* (15%) > *Labeo rohita* (15%) > *Cyprinus carpio* (10%) > *Cirrhinus mrigala* (05%) > Murrels (05%) > Clarius (05%) and mis cellaneous fishes (15%).

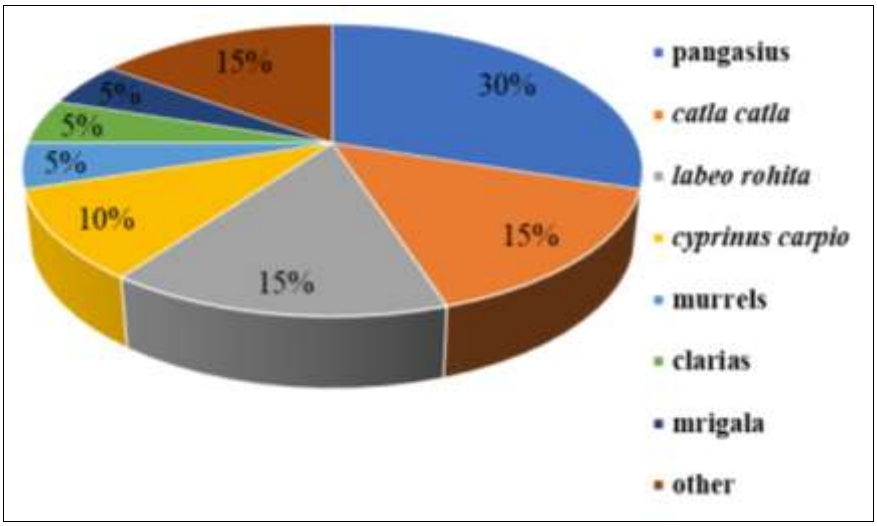


Fig 1: Description of fishes which was reported at Malwa Mill fish market.

Fig 2: Images show Malwa Mill fish market with difference fishes.

Table 1: General characteristics of Malwa Mill fish market.

Market characteristic's	Parameters
Market name	Budhwariya machli bazar
Shops	Not permanent
Platform	Absent
Communication system	Moderate
Roof (shade)	Temporary
Drainage	Not present
Ice facility	Present
Water supply	Not present
Sanitation	Moderate
Parking	Not available

Table 2: Average price of fish species in different season in Malwa Mill fish market

S. No.	Local name of fishes	Scientific name	Price (in rupee/kg) of different fish in different months (2019)			
			February	March	April	May
1	Catla	*Catla catla*	160	150	150	160
2	Rohu	*Labeo rohita*	160	150	140	150
3	Kalot	*Labeo calbasu*	150	140	150	150
4	Goli	*Labeo gonius*	130	120	110	120
5	Dummer	*Labeo fimbriatus*	180	160	150	160
6	Naren	*Cirrhinus mrigala*	140	120	140	130
7	Darai	*Puntius sarana*	100	90	80	80
8	Bherka	*Puntius* Sephora	80	70	60	60
9	Mohiela	*Osteobrama cotio*	80	70	60	60
10	Mola	*Amblypharyngodon mola*	80	80	60	60
11	Chalar	*Chela bacaila*	120	100	100	120
12	Silver	*Hypophthalmichthys molitrix*	120	100	100	120
13	Common carp	*Cyprinus carpio*	200	180	200	200
14	Seenghal	*Sperata seenghala*	180	160	160	180
15	Seenghal	*Sperata aor*	180	160	150	180
16	Katai	*Mystus bleekeri*	160	140	150	140
17	Katiya	*Mystus vittatus*	160	140	150	140
18	Gagra	*Rita gogra*	500	400	400	500
19	Padhin	*Wallago attu*	200	160	180	200
20	Mangur	*Clarias batrachus*	120	130	120	120
21	Singhi	*Heteropneustes fossilis*	400	450	400	400
22	Silan	*Pangasius pangasius*	140	120	120	120
23	Dok	*Channa punctatus*	100	120	120	120
24	Kabra	*Channa striatus*	400	350	450	400
25	Sawal	*Channa marulius*	400	350	450	400
26	Tilapia	*Oreochromis niloticus*	140	120	140	140
27	Tilapia	*Oreochromis mossambicus*	140	120	140	140
28	Baam	*Mastacembelus armatus*	200	240	200	240
29	Samudri bam	*Lepturacanthus savala*	400	350	400	400
30	Pomfret	*Pampus argenteus*	1000	800	1000	1000
31	Halwa	*Parastromateus niger*	1000	800	1000	1000

Table3: Classification of available fish species (during different season) in Malwa Mill fish market.

S. No.	Order	Family	Genus	Species
1	Cypriniformes	Cyprinidae	*Catla*	*Catla*
2			*Labeo*	*Rohita*
3			*Labeo*	*Calbasu*
4			*Labeo*	*Gonius*
5			*Labeo*	*Fimbriatus*
6			*Cirrhinus*	*Mrigala*
7			*Puntius*	*Sarana*
8			*Puntius*	Sephora
9			*Osteobrama*	Cotio
10			*Chela*	*Bacaila*
11			*Amblypharyngodon*	*Mola*
12			*Hypophthalmichthys*	*Molitrix*
13			*Cyprinus*	*Carpio*
14	Siluriformes	Bagridae	*Spereta*	*Seenghala*
15			*Spereta*	*Aor*
16			*Mystus*	*Bleekeri*
17			*Mystus*	*Vittatus*

18			*Rita*	*gogra*
19		Siluridae	*Wallago*	*attu*
20		Clariidae	*Clarias*	*batrachus*
21		Heteropneustidae	*Heteropneustes*	*fossilis*
22		Pangasiidae	*Pangasius*	*pangasius*
23	Ophidiiformes	Ophiocephalidae	*Channa*	*punctatus*
24			*Channa*	*striatus*
25			*Channa*	*marulius*
26	Perciformes	Cichlidae	*Oreochromis*	*niloticus*
27			*Oreochromis*	*mossambicus*
28		Trichiuridae	*Lepturacanthus*	*savala*
29	Scombriformes	Stromateidae	*Pampus*	*argenteus*
30			*Parastromateus*	*niger*
31	Mastacembaliformes	Mastacembelidae	*Mastacembelus*	*armatus*

Fish fauna – 06 orders of fresh and marine water fishes were observed in the investigated fish market during the study period (table 3). They belong to 11 families, 22 genera and 31 species. In whole the studied, orders Cypriniformes was abundant and Scombriformes & Mastacembaliformes were inadequate.

Gaidhane *et al.*, (2020) [6] also reported 4 marketing channels and 23 species of fishes and prawn were found in Bhiwapur fish market in Chandrapur, Maharashtra.

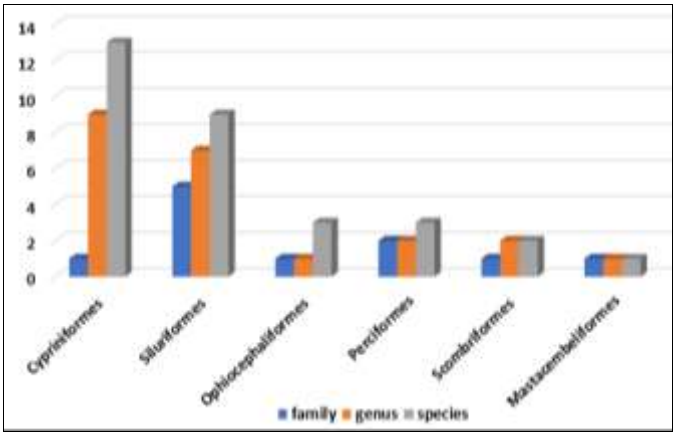


Fig 3: Classification wise distribution of fishes

Table 01 show the infrastructural condition of Malwa Mill fish market. The condition is not well such as plate form, shade, electricity facility and parking too.

Islam *et al.*, (2021) [3] similar studied the conditions of the markets were not satisfactory judging with the point sanitation, shade, water supply, drainage system, ice supply and preservation facilities.

Table 02 display local name and price of different fish species, according to study in the table fish species like *Puntius* Sephora, *Osteobrama* cotio *and Amblypharyngodon mola* were sold on lower price and *Pampus argenteus, Parastromateus niger and Rita gogra* were sold on higher price. The price of different fish species varies in different months on the basis of their size, quality, supply, quantity and demand also. Alam *et al.*, (2010) [4] also investigated that market structure, species quality, size and weight influence the price of fish.

Verma and Prakash (2020) [10] analysed lacking modern facilities in fish market but market provide large number of employments those who engaged direct or indirect in it.

If the potential of the available resources is correctly utilised, this will satisfy our domestic demand for fish as well as offer the unemployed, the destitute, and rural populations gainful employment, money, and nutritional security. In addition to the city, Fish consumption is low for a number of reasons, including a lack of sufficient and hygienic fish, weak marketing infrastructure and cold chain, transportation of fish and fish products, eating habits, and a lack of knowledge about the nutritional value and advantages of fish.

Conclusion

1. Condition of Malwa Mill fish market was medium with few modern facilities.
2. We have observed three market chains and come to concluding that shortest chain in the market, fishermen got more profit and longest chain, fishermen got less profit.
3. We also observed market provides large number of employments to fishermen, fish transporter, wholesaler, retailer etc.
4. Several fish species of fresh and marine water have been sold and purchased there.
5. There were no proper shops in the market so shopkeeper faced several problems like proper space for shops, storage, parking and hygienic conditions etc.

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