



# International Journal of Fisheries and Aquatic Studies

E-ISSN: 2347-5129

P-ISSN: 2394-0506

(ICV-Poland) Impact Value: 5.62

(GIF) Impact Factor: 0.549

IJFAS 2018; 6(4): 414-418

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www.fisheriesjournal.com

Received: 20-05-2018

Accepted: 21-06-2018

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## Domestic fish marketing and socio-economic status of market functionaries of the selected districts of Chhattisgarh (India)

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### Abstract

The study was carried out in three important fish markets located in three different districts Viz. Kabirdham, Bemetara and Rajnandgaon of the Chhattisgarh state to understand the domestic fish marketing system and socio-economic status of the key market functionaries. Total 60 numbers of market functionaries were randomly interviewed using a pre-structured questionnaire. Study revealed that all three major fish markets were male dominated with more than 80 percent of their involvement in different activities. Despite of low income level with 65 percent of the respondents of Kabirdham district were under BPL and 50 percent APL in other two district fish markets, their source of fund is by self. Consequently the lack of awareness and inadequate institutional financial sources in the study area is well prominent. Furthermore, three types of marketing channel were recognized in all the districts fish market. The types, size, and quality of fish species greatly affected the fish price along with seasonal variation with highest price in summer (March to May) and lowest in pre-winter (September to November) which is main fish harvesting season. The major constraints of the domestic fish markets of the study area were unhygienic handling of fish, inadequate icing and storage facilities, and lack of transportation services. It has been concluded that an organized institutional arrangements and better financial assistance through the intervention of the state government can improve the development of domestic fish markets.

**Keywords:** Domestic fish market, socio-economic, marketing channels and constraints

### 1. Introduction

Fish market is a place where people gather for selling and buying of fishes. According to Upadhyay *et al.* (2016) <sup>[1]</sup> markets are important platform both for physical marketing functions and the communication of signals to producers and consumers about the costs of buying something or the benefits of selling it. An ideal domestic fish market situation is crucial for achieving the target efficient production system as well as satisfaction of all groups of players involved in flow of the goods and services from the producers to consumer. Nonetheless, unlike marketing systems of agricultural products, fish marketing system is characterized by heterogeneous nature of the products with respect to species, size, weight, nutritional quality, storage quality and price (Upadhyay and Pandey, 2009) <sup>[2]</sup>. The State domestic fish market is exclusively of private owned sector where numerous market functionaries are associated with for their livelihood. The fish marketing system can play a vital role to bring stability in fish price and in linking the fishermen to the different stakeholders including input suppliers and consumers. Though there has been advancement both in market infrastructure and technology such as the development of e-commerce, hi-tech market in different parts of the country, the development of domestic fish market of Chhattisgarh is still in an infant stage and very less study has been carried out till now. The present study will help to know the socio economic status of the market functionaries and existing fish marketing conditions and its constraint of the selected three district major fish markets of Chhattisgarh.

### 2. Methodology

Data were collected from 60 numbers of fish markets functionaries of three district major fish market, viz. Naveen fish Market (Kabirdham), Ganj Para fish market (Bemetara) and GolBazar fish market (Rajnandgaon) in the year of 2017. Both primary and secondary data

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were used for the study. Secondary data were collected from different sources of published material such as journals, textbooks, newspaper, annual reports, Department of fisheries. The marketing margins were calculated using Flowra *et al.*, (2012) [3].

$$MM = P_r - P_f$$

Where, MM= Marketing margin,

$P_r$  = Retail price,

$P_f$  = Farm price

For constraints study, a constraints scheduled were prepared and respondents ranked the constraints faced by them in fish marketing and thereafter the responses were recorded (Pandey *et al.*, 2014) [4]. Accordingly, the ranks given by the respondents were then converted into percentage position with the help of formula (Das *et al.*, 2013) [5]:

$$\text{Percent position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

where,

$R_{ij}$  = Rank given to  $i^{\text{th}}$  constraint by  $j^{\text{th}}$  individual

$N_j$  = Number of constraint ranked by  $j^{\text{th}}$  individual

### 3. Result and Discussion

The results of socio-economic status of the respondents are given in table 1. It is found that fish marketing activities were mainly undertaken by the male (more than 80 percent) in all the selected markets which shows the insignificant role of women in fish marketing in the state. Nuclear family is prevalent with 60 to 85 percent of the respondents belongs in this group in three fish markets. It is evident that adult age group of market functionaries had the highest proportions in all the markets with more than 70 percent of respondents and 90 percent of them are found to be married. The level of educational status greatly affect the development of the people and it has been made known that more than 50 percent of the respondents attained primary level of education and few numbers high school. Most of them have access to primary health centre and governmental hospital. More experienced people (>15 years) are observed in fish marketers of Rajnandgaon followed by Bemetara (11-15 years) and Kawardha (6-10 years). Very few respondents who belongs to Muslim religion are involved in fish market functions with 5 and 10 percent of respondents in Bemetara and Rajnandgaon districts, respectively.

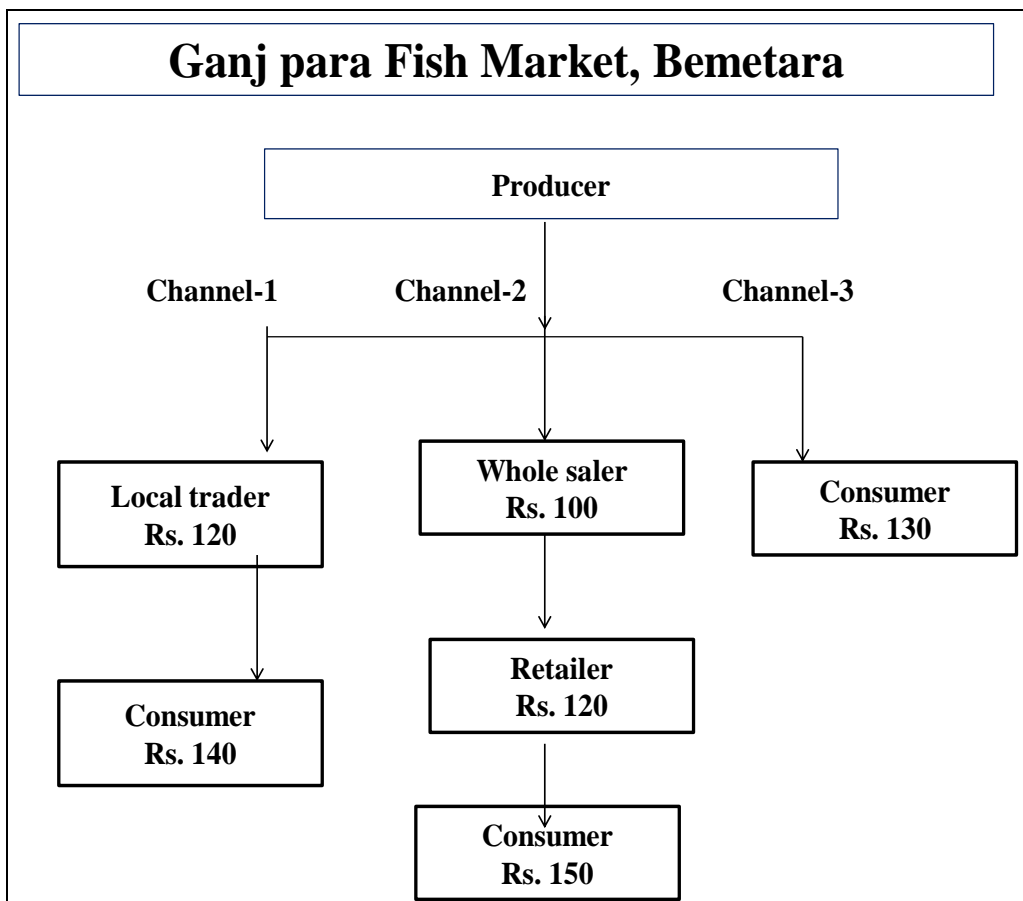
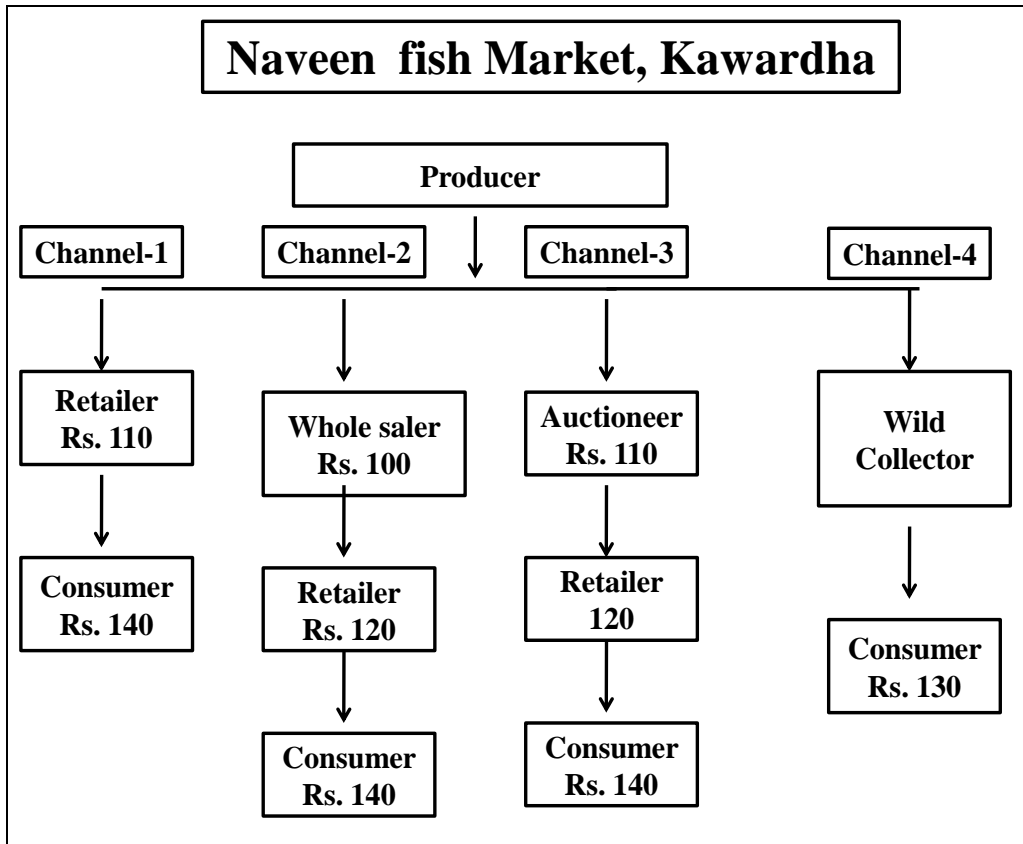
**Table 1:** Socio-economic profile of the respondents of the selected fish markets of three districts

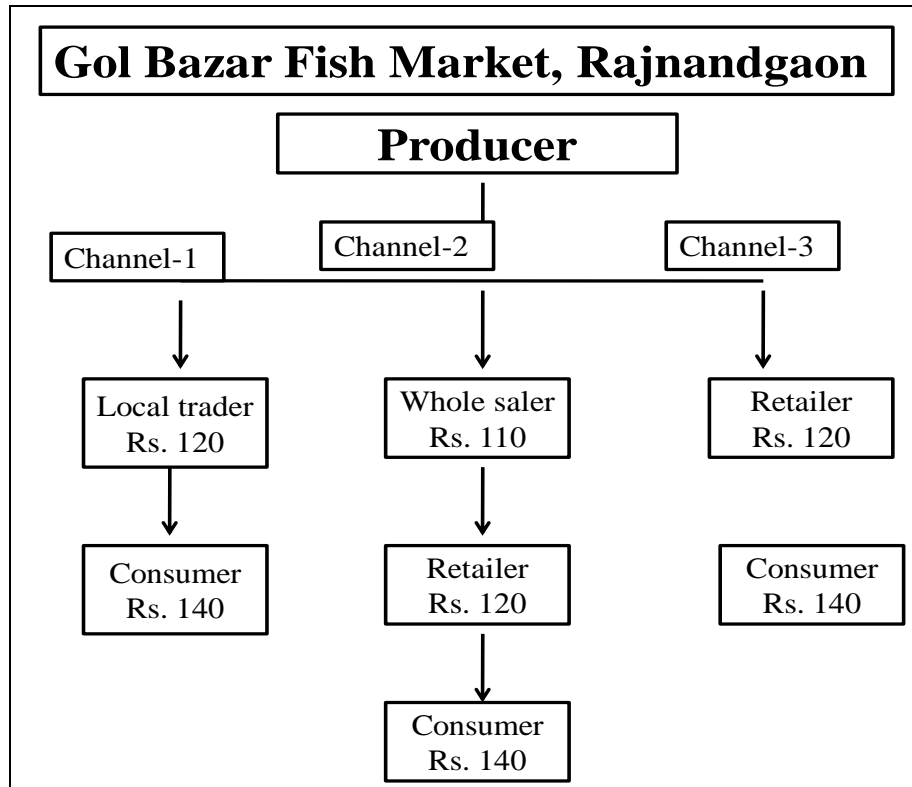
Items	Different markets of the state (N=60)					
	Kabirdham N=20		Bemetara N=20		Rajnandgaon N=20	
	Frequency	(%)	Frequency	(%)	Frequency	(%)
<b>Family size (No.)</b>						
4-7 (Nuclear)	17	85.00	17	85.00	12	60.00
>7 (Joint)	3	15.00	3	15.00	8	40.00
<b>Gender</b>						
Male	18	90.00	18	90.00	17	85.00
Female	2	10.00	2	10.00	3	15.00
<b>Age group ( year )</b>						
<25 (Young age group)	3	15.00	2	10.00	5	25.00
26-40 (Adult)	15	75.00	15	75.00	14	70.00
41-50 (Middle age)	1	5.00	2	10.00	1	5.00
>50 (Old)	1	5.00	1	5.00	-	-
<b>Marital status</b>						
Married	18	90.00	18	90.00	15	75
Unmarried	2	10.00	2	10.00	5	25
<b>Educational status</b>						
Illiterate	-	-	-	-	-	-
Primary	11	55.00	15	75.00	12	60.00
High school	9	45.00	5	25.00	8	40.00
Higher secondary	-	-	-	-	-	-
Hindu	20	100	19	95.00	18	90.00
Muslim	-	-	1	5.00	2	10.00
<b>Health service</b>						
Primary health centre	12	60.00	5	45.45	7	35.00
Public hospital	08	40.00	6	54.54	11	55.00
Private hospital	-	-	-	-	2	10
<b>Experience (year)</b>						
<5	3	15.00	1	5.00	5	25.00
6-10	7	35.00	5	25.00	1	5.00
11-15	6	30.00	9	45.00	6	30.00
>15	4	20.00	5	25.00	8	40.00
<b>Income (Rs./year)</b>						
<27000 (EPL)	1	5.00	3	15.00	4	20.00
27000 (BPL)	13	65.00	7	35.00	6	30.00
>27000 (APL)	6	30.00	10	50.00	10	50.00

### 3.1 Marketing channels

The fish marketing channels indicates the fish flows from producer to the end point i.e. consumer through different intermediaries. Major intermediaries in the fish marketing

channels were fish traders, wholesalers and retailers. Direct marketing of fish from producer to consumer were observed in Kawardha and Bemetara fish markets. The different fish marketing channels were presented in flowchart no 1.





**Flowchart 1:** Showing the different marketing channels prevailing in the selected fish markets of Chhattisgarh.

### 3.2 Fish marketing system and fish distribution

A marketing system includes all activities involved in the flow of fish from the points of initial production to the ultimate consumer. There are 25 numbers of fish retailers markets involved in Kabirdham and Rajnandgaon districts fish market and 23 numbers of retailers in Bemetara fish market. The daily supply of fish were 800-1000 kg in Kabirdham fish market, 700-900 kg in Bemetara fish market and 1000-1200 kg in Rajnandgaon fish market, respectively. On an average, all the fish traders engaged 6 to 8 hours in a

day in fish selling activities. Total 90 percent of the respondent use tube well water in fish market. The respondents (83 percent) engaged in fish selling benefitted from electricity facilities.

### 3.3 Arrivals of species in markets

Table 2 represents the various fish species and its price in all the three markets. The dominant species are IMC (*Labeo rohita*, *Catla catla* and *Cirrhinus mrigala*). Among all fish species, the highest price is 150 Rupees of Catla (*Catla catla*).

**Table 2:** List of freshwater species observed in three selected fish markets of Chhattisgarh

Family	Local name	Scientific name	Kawardha Rs./kg	Bemetara Rs./kg	Rajnandgaon Rs./kg
Cyprinidae	Catla	<i>Catla catla</i>	140	150	130
	Rohu	<i>Labeo rohita</i>	130	140	130
	Mrigal	<i>Cirrhinus mrigala</i>	120	130	120
	Silver carp	<i>Hypophthalmichthys molitrix</i>	110	120	100
	Grass carp	<i>Ctenopharyngodon idella</i>	120	130	120
	Common carp	<i>Cyprinus carpio</i>	120	130	130
	Kotri	<i>Puntius spp.</i>	60	80	60
	Sarangi	<i>Salmostroma bacaila</i>	80	90	90
	Mola	<i>Amblypharyngodon mola</i>	100	-	-
Channidae	Bhunda	<i>Channa spp.</i>	120	110	110
Bagridae	Tengna	<i>Mystus vittatus</i>	180	200	230
Siluridae	Padhina	<i>Wallago attu</i>	250	-	200
Claridae	Deshi magur	<i>Clarius batrachus</i>	200	220	250
	Thai magur	<i>C.gariepinus</i>	200	-	220
Notopteridae	Pathri	<i>Notopterus spp.</i>	200	150	150
Cichlidae	Tilapia	<i>Oreochromis spp.</i>	90	100	100
Pangasidae	Sawal	<i>Pangasiodon spp.</i>	100	120	110
Anguillidae	Bam	<i>Anguilla bengalensis</i>	200	250	210
Heteropneustidae	Kewai	<i>Heteropneustes fossilis</i>	250	-	230
Cobitidae	Loach	<i>Lepidocephalus guntea</i>	120	-	130
Palaemonidae	Chinghri	<i>Macrobrachium choprai</i>	100	120	130
Gobiidae	Dhesra	<i>Glossogobius spp.</i>	80	-	-
Anabantidae	-	<i>Anabas testudineus</i>	130	-	-

### 3.4 Major constraints in district fish market of Chhattisgarh

Table 3 shows the different marketing constraints faced by the market functionaries of the selected district fish markets. In present study, 10 different marketing constraints were considered for study in three fish markets. The major marketing constraints observed were lack of government support (71.68%), followed by poor market infrastructure (69.33%) and lack of good quality and variety of species (63.66%).

**Table 3:** Marketing constraint / problems faced by fish farmer (N=60)

S. No.	Marketing Constraints	(%)	Rank
1	Lack of government support	71.68	I
2	Poor market infrastructural facilities	69.33	II
3	Lack of good quality and variety of fish species	63.66	III
4	Inadequate storage facilities	60.65	IV
5	Lack of marketing skills	55.25	V
6	Competition	50	VI
7	High number of middlemen	43.33	VII
8	Lack of market information	35.33	VIII
9	High packaging costs	31	IX
10	Lack of advertisements	12.33	X

### 4. Conclusion

The study was conducted in selected three major domestic fish markets of three districts (Kabirdham, Bemetara and Rajnandgaon) of Chhattisgarh during 2017. The objective of the study were to analyze the existing system of fish marketing with particular emphasis on socio-economic condition of market functionaries and too identify the constraints associated with fish marketing and to suggest the remedial measures for marketing problems. Fish traders have very limited knowledge of hygiene and sanitation that hinder the development of domestic markets in the state. The major financial source is from their owned as lengthy official formalities and procedure for funds avoid them to approach for financial help from financial institutions, Based on the study, the following recommendations can be made for the overall improvement of domestic fish markets in the state:

- A facility of cold storage should be constructed so that the producers and intermediaries can store and preserve for better quality and price.
- Modern communication system like app based mobile system, one stop aqua-shop, aqua-choupal to have better assess to market information and to remove unreliable price information.
- Ergonomically designed basic infrastructure of modern fish market should be provided with amenities like water, electricity and proper drainage system to make fish trading healthy.
- A special Fishers' Corner should be established in each market where the fisher can sell their fish directly to the consumers.

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