

A preliminary survey of Fish market in Tirora Tehsil, District Gondia (Maharashtra)

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Abstract

The present study was based on preliminary survey of fish marketing in Tirora tehsil, district Gondia. A survey was carried out by visiting fish market by taking interviews and group discussion with fishermen and fish sellers for a period of six months. i.e., July 2020 to December 2020. Data were collected from different village markets. The study revealed that in Tirora fish market total 14 species of fishes belonging to 10 family and 6 orders and only one species of Prawn, *Macrobrachium rosenbergii* was recorded in this market. The maximum number of fish species reported belonging to order Siluriformes (6 species) followed by Cypriniformes (3 species), Osteoglossiformes (2 species) while only one fish species was recorded each from order Perciformes, Anabantiformes and Anguilliformes. Total 59 fisherman were recorded to involved in fishing activity and 300 family members were found to be dependent on this fisherman from 10 different villages. Average more than 250 days was recorded as an active fishing day and the favorable fishing seasons was from late rainy to summer season. Maximum number of fisherman educational qualification was under matriculate. The average annual income of the farmers was more than Rs. 1,75,000/- . Fish price survey shows that *Notopterus* sp., *Opheochphalus channa* *Mystus seenghala*, *Pangasius pangasius*, and *Anguilla bengalensis* was sold at higher price (Rs. 500 /kg) followed by *Oreochromis mossambicus*, *Wallago attu* (Rs. 400 /kg) while *Catla catla* and *Labeo rohita* fish species was sold at a least price (Rs. 300 /kg). Among all Prawn sp. with large size sold at higher price (Rs. 800-900 / kg). Fish market of Tirora generates direct and indirect employment to number of people for the betterment of rural economic welfare of people of Tirora tahsil, district Gondia.

Key words : Tirora, fishes, farmers, market.

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Fishes are well known for their nutrients and taste. Fishes are good source of proteins and minerals. The nutrient values of fish however vary from one species to another and one individual to another depending upon the age, sex, environment and season^{2, 9}. Fish market is a place where people gather for selling and buying of fishes. Fish marketing system is the system where fishes reach to consumers from producers (fish farmers). Fish consumers have to depend on an effective fish marketing system. In India, fishes are always preferred as fresh rather than preserved or processed. Fish markets significantly contribute to food security and also in generating employments. It supports livelihood of lakhs of people. It generates direct or indirect employment to them, thus improving economic status of the people. The fisheries sector has been recognized as a powerful income generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food¹. The fishes however are very perishable and can spoil quickly if not stored or preserved properly after the harvest. Because of inadequate infrastructure facilities and lack of technology knowledge and expertise in the field, post-harvest fish management in the country is not up to the level and is perhaps the main reason of fish degradation or loss. The fish fauna of Pethwad dam, Kandahar taluka in Nanded district in Maharashtra have been studied⁵. The ichthyofaunal diversity of Itiadh dam in Gondia district of Maharashtra have been reported⁴. The reservoir fishery potential of Parbhani district in Maharashtra was studied⁷. Some strategies for domestic fish marketing development in India was developed⁶.

Tirora tahsil is located in Gondia district in Nagpur Division of Vidarbha region of eastern of Maharashtra. Tirora tehsil is naturally endowed with good potential of water resources. The fish in the market comes from dams, ponds, lakes, and river. Wainganga is the main river for capture fishery point of view in the district.

The fish market survey has been done at different fisherman villages located in Tirora Tehsil. Villages *i.e* Wadegaon, Bhajepar, Kawlewada, Lakhegaon, Sukadi, Mandvi, Satona, Kindangipar, Pipriya including Tirora were randomly selected for the study.

Study area :

Gondia district is located at latitudes 20.39 and 21.38 North and longitudes 79.27 to 80.42 east in the eastern edge in Nagpur division of Vidarbha region of Maharashtra.

Fish market survey :

The study of fish market was done through face to face surveys and interviews with fishermen and fish sellers. The fish sellers (both male and female) were included in survey. About 59 number of fisherman and fish sellers were interview in the evening hours for a period of 6 month during July 2020 to December 2020. A questionnaire containing total number of 15 questions was constructed for the purpose (Table-1). The questions incorporated into questionnaire covered all aspects that were necessary to fulfill the aims and objectives of the study. Questions were asked in such a way that fish sellers can easily respond even if they do not have specific or scientific knowledge of the field. Fish traders were expected to answer only in 'YES' or 'NO'. A survey was carried out by visiting

Table-1. Questionnaire constructed for study of fish markets located in Tirora and its surrounding villages

Sr. no.	Questions
1	What is your educational qualification-Illiterate/Under matriculate/Under graduate/Graduate
2	How many family members dependent?
3	Which is the specific reason to join fishing?
4	How many active fishing days have been observed in a year?
5	Which season is more favorable for fishing?
6	What is your annual income from fishery?
7	Are you processing fish in raw or processed?
8	Do you know that spoiled fish are unhealthy and not suitable for human consumption?
9	Do you know that fish spoiled easily if they are not stored properly?
10	Can the fish spoilage be minimized by adopting good fish handling and hygienic practices?
11	If a programme on 'Post Harvest Fish Management' that includes all the activities such as handling, hygiene (fish and personal), transportation, storage, quality assessment etc. is launched, will it be helpful for you?
12	Do you think that the fish market is good and having enough physical infrastructures?
13	In your opinion, are the efforts taken by the local governing bodies in order to create ideal fish markets and to maintain existing fish markets adequate?
14	Excess watering on fishes may further degrade the fish quality due to spoilage. Do you know this fact?
15	Do you know there are several fish preservation methods other than icing and chilling?



Photo: Fish marketing activities and market view from different village of Tirora Tashil

Table-2. Fish fauna recorded in Tirora Tehsil fish market area.

Sr. no.	Order	Family	Zoological Name	Local/ Common name	Price/ Kg
Fishes					
1	Osteoglossiformes	Notopteridae	1. <i>Notopterus chitala</i>	Chital	500/-
			2. <i>Notopterus notopterus</i>	Patre	500/-
2	Perciformes	Cichlidae	1. <i>Oreochromis mossambicus</i>	Tilapia	400/-
3	Cypriniformes	Cyprinidae	1. <i>Catla catla</i>	Catla	300/-
			2. <i>Labeo rohita</i>	Rohu	300/-
			3. <i>Cirrhinus mrigala</i>	Mrigal	300/-
4	Anabantiformes	Channidae	1. <i>Ophicephalus channa</i>	Murrel	500/-
5	Siluriformes	Bagridae	1. <i>Mystus seenghala</i>	Shingta	500/-
		Siluridae	2. <i>Wallago attu</i>	Shivada	400/-
		Clariidae	3. <i>Clarias batrachus</i>	Magur	350/-
			4. <i>Clarias garipinus</i>	Magur	350/-
		Heteropneustidae	5. <i>Heteropneustes fossilis</i>	Singhi	350/-
		Pangasiidae	6. <i>Pangasius pangasius</i>	Panga	600/-
6	Anguilliformes	Anguillidae	1. <i>Anguilla bengalensis</i>	Vaamb	500/-
Prawn					
7	Decapoda	Palaemonidae	1. <i>Macrobrachium rosenbergii</i>	Jhinga	800- 900/-

fish market by taking interviews and group discussion. The collected data was analyzed.

The freshwater fisheries resources of Tirora Tehsil consisted exclusively of culture fishery from seasonal, perennial and culture ponds and capture fishery from rivers and lakes. In the present study, total 14 species of fishes belonging to 10 family and 6 orders were identified, whereas one species of Prawn, *Macrobrachium rosenbergii* was also recorded in this market. Analysis of data showed that maximum number of fish species reported belonging to order Siluriformes (6 species)

followed by Cypriniformes (3 species), Osteoglossiformes (2 species) while only one fish species was recorded each from order Perciformes, Anabantiformes and Anguilliformes. (Table-2). In the culture ponds fish species, *Labeo rohita*, *Catla catla*, and *Cirrhinus mrigala*, were very common species. The survey of fish market reported that Total 59 fisherman were recorded to involved in fishing activity and 300 family members were found to be dependent on this fisherman from 10 different villages. Average more than 250 days was recorded as an active fishing day and the favorable fishing seasons was late rainy to

Table-3 Collected Data showing number of fish farmers involved in fishing Market in
Tirora, District Gondia

Sr. no	Name of site	Number of farmers	Educational qualification	No. of family members dependent	Active fishing days	Reason to join fishing			Favourable Season	Annual income (Rs)
						Job opportunity with low investment	Traditional	Unemployment		
1.	Wadegaon	02	Under Matriculate	14	< 250	--	--	Yes	Late Rainy to Summer season	<1,75,000
2.	Bhajepr	06	Under Matriculate	13	< 250	--	--	Yes	Late Rainy to Summer season	<1,75,000
3.	Kawlewada	03	Under Matriculate	20	< 250	--	Yes	--	Late Rainy to Summer season	<1,75,000
4.	Lakhegaon	02	Under Matriculate	14	< 250	--	Yes	--	Late Rainy to Summer season	<1,75,000
5.	Sukadi	01	Under Matriculate	05	< 250	--	--	Yes	Late Rainy to Summer season	<1,75,000
6.	Mandvi	31	Under Matriculate	158	< 250	--	Yes	--	Late Rainy to Summer season	<1,75,000
7.	Tirora	08	Illiterate	48	< 250	--	Yes	--	Late Rainy to Summer season	<1,75,000
8.	Satona	02	Under Matriculate	07	< 250	--	Yes	--	Late Rainy to Summer season	<1,75,000
9.	Kidangipar	03	Under Graduate	15	> 150	--	--	Yes	Winter and Summer season	Approx. < 70,000
10.	Pipriya	01	Under Matriculate	06	< 250	--	--	Yes	Late Rainy to Summer season	<1,75,000
	Total	59	Under Matriculate	300	< 250	---	---	---	Late Rainy to Summer season	<1,75,000

summer season. Maximum number of fisherman educational qualification was under matriculate. The average annual income of the farmers was found to be more than Rs. 1, 75000/- (Table-3). Fish price survey shows that *Notopterus* sp., *Opheochphalus channa*, *Mystus seenghala*, *Pangasius pangasius*, and *Anguilla bengalensis* was sold at higher price (Rs. 500/kg) followed by *Oreochromis mossambicus*, *Wallago attu* (Rs. 400 /kg) while *Catla catla* and *Labeo rohita* fish species was sold at a least price (Rs. 300 /kg). Among all Prawn sp. with large size has higher price (Rs 800-900/kg). Rohu was recorded as the most preferable species followed by Catla and Mural. Cyprinidae family fishes are the major demand of fish-eating population. The major availability of fish in the Tirora fish market comes from the Wainganga, Waugh, Kawlewada, Chorkhamara, Bodalkasa rivers followed by various culture fish ponds. The most remarkable observation noticed during interaction was that most of the fish sellers (80- 100 %) of all fish markets were much aware and were having common approach on fish spoilage, causes of fish spoilage and effects of chilling and icing, role of good handling and hygienic practices necessary to minimizing the chances of fish spoilage, need of short-term training and awareness program on post-harvest fish management and fish trade. The post-harvest fisheries loss in the country is only due to inappropriate handling practices, delay in packaging and transportation and lack of proper cold storage facilities was reported³. In a recent report by parliamentary standing committee on agriculture, it has been said that our country is facing an annual post-harvest fisheries loss of Rs. 61, 000 crores and due to this there is huge loss in income of the fishermen community³. Fish traders were agreed that

post-harvest fish loss can be minimized if appropriate post-harvest fish management measures are taken into consideration. The people prefer to consume the fresh fish rather than stored-iced one. There is a need of regulation at this stage by the co-operative federations so as to ensure that fishermen get better price in the auctioning process.

The fish market of Tirora generates direct and indirect employment to large number of people, thus, improving the economic status of the people.

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