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## Survey of fish consumption pattern in households of Shivamogga, Karnataka

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### Abstract

The study was conducted to gather information on the fish consumption pattern among randomly selected households using a distinct questionnaire. The study revealed that much of the fish consuming communities prefer to consume fish regularly in their diet. Consumers commonly choice to consume fishes like Catla, Common carp, Rohu among the freshwater fish and Sardine, Mackeral and Prawns among sea food. The observation indicated that most of the respondents consume fish found to be once in a week compare to daily user. Survey showed that the range of fish species preferred (cost/ price of fish) mainly focused on the house hold income.

**Keywords:** Fish consumption, sea food, fisheries sector

### Introduction

Dietary habits of population in different regions of the world have been determined mainly by the availability of the local food and practices. Since, all foods are not of the same quality from a nutritional point of view, man's ability to meet his nutritional needs and maintain good health depends upon the type and quality of food stuffs available. Fish is a kind of food of excellent nutritional value and it makes a very significant contribution to the diet of many fish consuming communities in both developed and developing world. Flesh of fish is generally called as white meat and has agreeable taste and flavor. As far as food value is concerned, fish is more superior, having less amount of fat and more or equal protein as compared to other animal flesh consumed by human beings <sup>[1]</sup>. Fish meat and oil contains Vitamins, Omega 3 polyunsaturated fatty acids (PUFA) and are helpful in controlling the eye and cardiovascular diseases <sup>[2]</sup>. Recent research has pointed out that the fish meat has anti-cancerous effects, minimized risk of heart diseases and as a result enhanced life expectancy.

Edible tissue of fish is appreciably greater than that of mutton, beef or poultry in nutritional aspects. The lean meat percentage in fish (80.9%) is greater than chicken, broiler (64.7%) and beef (choice grade, 51%) <sup>[3]</sup>. The per capita fish consumption of 25.9 kg/year and 9.3 kg/year has been recorded in developed and developing countries respectively. It has been recorded that, the world average per capita fish consumption is 19 kg/year (Japan 86 kg/year, Myanmar 13 kg/year, Srilanka 11 kg/year and Bangladesh 10 kg/year). The consumption of fish in India is increasing from 8.8 kg (1988) to 9 kg (2000) <sup>[4]</sup>. India position in per capita fish consumption is lowest position i.e., about 136<sup>th</sup>, it may be due to the fact that fish is eaten mostly by people residing rather in coastal areas. Among the states in India, highest in Lakshadweep, Andaman Island, Goa and Kerala (32 kg/year). States like Gujarat and Rajasthan fish is rarely consumed. It is necessary to develop data bases on different aspects of fisheries regarding production-consumption patterns for formulating strategies for investment and development in the fisheries sector. According to Atin *et al.*, <sup>[5]</sup> the obtained findings, both the UK and Singapore are potential targets for fishery export countries. However, the promotion strategies need to differ because food consumption is driven by different factors in each country. Hence, an attempt was made to collect information and data regarding the consumption pattern and frequency of fish consumption after making a random sampling survey among the households in the Shivamogga city of Karnataka state.

### Materials and Methods

The study was carried out in certain areas of Shivamogga city by random sampling technique.

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The study area is located on the bank of river Tunga of Western Ghats. About one hundred and two numbers of households consuming fish were interviewed. The survey was conducted by means of sample census using a pretested semi-structure questionnaire, which is designed to collect sufficient reliable data includes different variables regarding frequency and consumption pattern of fish. The food frequency questionnaire has been dominant method for assessing food consumption in population studies [6].

## Results

The present survey reveals that fish was an appreciated food by the local people. It was observed that 29.42% of people prefer fish as their first choice, 47.05% of people prefer fish as their second choice and 23.53% of people prefer fish as their third choice as per as consumption preference over poultry meat, mutton and beef. It was observed that majority of the respondents consume fresh water fishes (60.78%) followed by marine fishes and prawns (39.22%) (Table.1). The varieties of fresh water fishes commonly consumed by the respondents of the study area includes Catla, Common carp, Rohu and Mrighal (28.43%), Cat fishes (15.69%) and other fresh water fishes (11.76%), and with respect to marine fishes such as Sardine, Mackerel, Hilsa and Bass (21.56%), Pomfret (2.95%), Prawns (8.83%) and other Sea fishes (10.78%) as order of choice respectively (Table.1). Survey showed that the range of fish species preferred (cost/ price of fish) mainly focused on the house hold income and similar opinion was expressed by other workers [7] and [8].

The frequency of consumption of fish food by the consumers, revealed that once in a week (30.39%), once a fortnight, (29.42%), once a month (18.62%), occasional (14.70%) and only (6.87%) consumed fish on daily basis. Another important factor regarding freshness of the fish considered by the consumers showed that about 61.76% prefer fresh fish, 20.59% prefer frozen fish and about 17.65% prefer dry fish in their diet (Table.1)

## Discussion

Analysis and interpretation of consumer perception further

revealed that there is considerable demand for fish and there was immense scope for supply of fresh, dry as well as frozen fish. Demand for fish is likely to increase in the future, given the positive perception of fish as a food item in this part of the region and the recovery of previous consumption levels. The main future possibilities for increasing food fish supplies in the region include productivity enhancement programs in small water bodies, aquaculture development, and better utilization of small pelagic fish. Customers felt that they need authoritative source of information regarding the importance of fish food and consumption preference of fish species in their diet. So steps are needed by the fishery, food, health and other related departments to popularize the fish food in this area in particular and rest of the world in general. Table no. 2 depicts the purchase power of the assessed population. There is negative correlation between the purchase capacity and cost of the fish. Lower income group having much purchase power towards to low cost fish. Similar studies are carried out by Pradip et al., [9]. Majority of respondents (72.1%) had shown their first preference for Rohu, second preference for Catla (67.3%), and third preference for Mrigal (35.5%). Similar findings were also reported by Dey et al., [10] where consumers of India and Bangladesh ranked Rohu, Catla and Mrigal as first, second and third preferred species respectively. Bhatt [11] study conducted in Karnataka also found that Rohu and Catla was the most preferred species and Mrigal was the least preferred species in both rural and urban areas.

Consumers commonly choice to consume fishes like Catla, Common carp, Rohu among the freshwater fish and Sardine, Mackerel and Prawns among sea food. The observation indicated that most of the respondents consume fish found to be once in a week compared to daily user. Survey showed that the range of fish species preferred (cost/ price of fish) mainly focused on the house hold income. Analysis and interpretation of consumer perception further revealed that there is considerable demand for fish and there was immense scope for supply of fresh, dry as well as frozen fish.

**Table 1:** Frequency and preference of choice of consumption of fish and sea food

Time log	Percentage	Food particulars	Percentage
Daily	6.87%	Catla, Common carp, Rohu and Mrighal	28.43%
Once a week	30.39%	Freshwater cat fishes	15.69%
Once a fortnight	29.42%	Other Freshwater fishes	11.76%
Once a month	18.62%	Sardine, Mackerel, Hilsa and Bass	21.56%
Occasional	14.70%	Pomfret	2.95%
		Prawns	8.83%
		Other Sea foods	10.78%

**Table 2:** Preference of choice of consumption of fish in relation to Purchase power/Income of the

Fish Species	Common name	Percentage of Consumption	Population Income in Rs./-	Purchasing power %
<i>Catla, catla</i>	Catla	8.1%	5000-10000	80
<i>Cyprinus carpio</i>	Common carp,	7.1%	5000-10000	
<i>Labeo rohita</i>	Rohu	6.8%	5000-10000	
<i>Cirrhinus mrigala</i>	Mrighal	4.2%	5000-10000	
Freshwater cat fishes		15.69%	>5000	65
Other Freshwater fishes		11.76%	>5000	
<i>Sardinella longiceps</i>	Sardine,	9.1%	5000-10000	42
<i>Rastrelliger kanagurta</i>	Mackerel	5.2%	5000-10000	
<i>Tenualosa ilisha</i>	Hilsa	3.4%	5000-10000	
<i>Lates calcarifer</i>	Bass	3.86%	>10,000	
<i>Pampus argenteus</i>	Pomfret	2.95%	>10,000	
<i>Fennerotaeus indicus</i> and <i>Penaeus</i> sps.	Prawns	8.83%	>5000	

			>10,000	23
Other Sea foods		10.78%	>10000	

### Conflict of Interest

There is no conflict of interest of authors

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