

## RRST-Zoology

# Status of Fish Consumption in Kolhapur City

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Article Info	Abstract
<b>Article History</b> Received : 27-01-2011 Revised : 25-03-2011 Accepted : 25-03-2011	The survey was conducted during the period of 2009-10 at various regions of Kolhapur city through personal interviews (549) to access region specific consumption rates by targeting the residence of the respondent. The relevant questions were asked to know knowledge of the respondents of a particular population [3]. The purpose of the survey was to study consumer attitude towards fish consumption that can be currently determined by parameters such as price, taste, quality, availability or hygiene at point of sale. In order to satisfy increasing demands many marketing strategies could be evolved and, simultaneously, help could be offered for the development and management of fisheries.
<b>*Corresponding Author</b> Tel : +91-9766816678  Email: rahul.aqualab@gmail.com vydzoo@rediffmail.com	<b>Key Words:</b> Respondent, consumption, consumers, productivity, key influence

## Introduction

Historically, the oceans were considered limitless and thought to harbor enough fish to feed an ever-increasing human population. However, the demands of a growing population, particularly in poorer countries, now far outstrip the sustainable yield of the seas. At the same time as fishing has become more mechanized and wild fish stocks increasingly depleted, which is affecting aquaculture production. The FAO Estimates the value of fish traded internationally to be US\$ 51 billion per annum [6].

Consumption of food fish have increasingly risen from 40 million tons in 1970 to 96 million tons in 1998 [6], and is expected to reach 110 million tons by 2010 [5]. While the amount of by-catch killed and discarded annually is estimated to be between 18 and 40 million tons [6], approximately the total amount of fish currently harvested for fishmeal production (30 million tons). More recently, capture fisheries have not been able to keep pace with growing demand, and many marine fisheries have already been over-fished. In India from the period of 1990-1997, fish Consumption is increased by 31% while the supply from marine capture fishery has been increased by only 9% [5].

Though the reports say so, conditions for Aquaculture in India is not satisfactory as it is necessary to know the extent at which fish is being consumed. The survey of fish consumption plays significant role which reveals the nutritional and economic status. Fish is a major potential source for rich protein in India [8]. As being rich in protein, essential amino acids and vitamins, play an important role in human diet. The shell fish like oyster is having good content of lipids and fatty acids [11] but still not accepted in higher strata.

## Materials and Methods

There are various methods described for conducting consumption surveys like telephonic surveys, online surveys, personal interviews, group discussions etc., [3]. Of these four categories, personal interview method was applied. In this method questions were asked to know knowledge of the respondents of a particular population. Pollock [3] suggested creating a data requirement by asking questions for the questionnaire to confirm that each question is relevant to study the objectives. Therefore questions asked to the respondents were in regional language that specifies all information and requirements necessary to adequately describe the consumption patterns for the target population. Interactions between class, income, caste, religion and personal liking were significant and extremely important in a fish consumption evaluation [7].

## Study Area

The survey was conducted in 2009-10 at various regions of Kolhapur city such as Kolhapur Municipal Corporation fish market, Lakshmipuri, Bindu chowk, Ravivar peth. Also the areas far from fish market such as Shivaji Peth, R.K Nagar, Samrat Nagar, Rajarampuri, Central bus stand residence, Bhim Nagar, Kawala naka, Nagla Park, and Shivaji University Kolhapur camp which include most of the employees from varied areas.

## Target Respondent

The target respondents for this study were in two categories:

- Housewife.
- An additional member of the family.

**Sample Size & Selection**

A total of 549 interviews were conducted across the entire city including all categories of respondents. Against this, a total of 500 interviews were received. The starting points were selected in Kolhapur, which were nearer to the fish market (Kolhapur Municipal Corporation). Around each starting point about seven to eight families were selected using the Right Hand Rule, that is, by using random walk method which eliminates interviewer bias in selection of a family. The respondent was then interviewed to determine the incidence of individual's fish consumption, if any, in such households.

**Analysis**

Analysis of fish consumption was done by income,

Table 1: Distribution of families according to their diet:

Family Members	1 – 4	5 – 8	9 – 12	13 – 16	16 - 20
Total Members	255	200	30	8	7
Vegetarian	59	66	9	3	2
Both (Non-veg)	196	134	21	5	5

It was seen that number of non-vegetarians in the families considering 1 to 8 members were highest of about 76.86% than in large families considering more than 12 members of about 71.42%. The moderate families considering 9 to 12 members showed less consumption of non-vegetarian food of 62.5%. The diet preference is based on both, personal choice

location and category of household. Throughout the report an attempt has been made to include data which clearly demonstrates significant trends and differences.

**Results and Discussion**

The research has shown that fish food is moderately regarded by the majority of Kolhapur population across all income groups. The families of Kolhapur city were classified depending upon their consumption strategies. Following results were obtained after compilation and analysis of data collected from personal interviews.

**1) Distribution of families according to their diet:**

as well as number of individuals in a family. The Fish Consumption Survey of the Umatilla, Nez Perce, Yakama and Warm Springs showed traditional fish consumption among the individuals of the family [2].

**2) Occupation of the main earner:**

Table 2: Distribution of families according to occupation of the main earner:

Agriculture	Marketing	Business	Employee	Fishery	Animal Rearing	Retired/ Other
32	63	130	259	4	5	7

The study of population for the occupation of main earner in a family (Table 2) showed that, The diet of family mainly depends on earner work in private or government sector (51 to 81%), business owners (51.8%) or agriculture and marketing was considerable occupation (6.4% and 12.6% respectively) while only 0.8% main earner were engaged in aquaculture and fisheries practices.

their income on food items.

**4) Consumption of high quality protein food by income:**

Incidence of the high quality protein consumption distribution was seen (Fig.2). Among all classes, two classes of income group 50 thousand to 1 lakh and 1 lakh to 2 lakh preferred fish as highest source of food followed by milk, meat and eggs.

**3) Annual income of the family:**

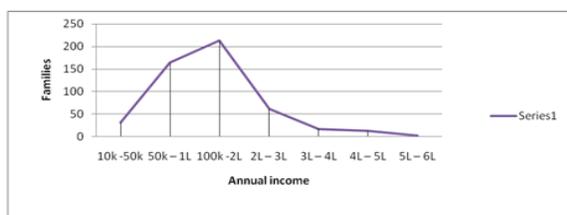


Fig.1. Income range of the families in Kolhapur city affecting the Consumption rate.

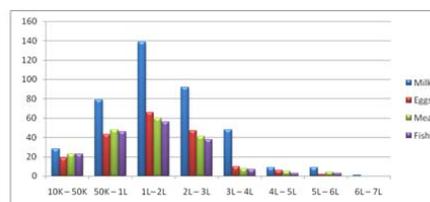


Fig. 2. Incidence of quality protein food consumption by income

The survey reveals that the majority of subpopulation was studied according to their annual income range (Fig. 1). The findings from the figure above indicate that a major role is played by price in the consumption of food items. In the light of this, it would be pertinent to note that households with less monthly incomes spend, on an average, over three-fourths of

Thus this concludes that more expensive products are consumed in the upper income group and less expensive products in the lower income group. The fish plays crucial role in the diet of poor, whereas cat fish though sold cheaply, are rich source of protein for lower strata. This also indicates the availability of a variety of fish products to suit individual household budgets.

5) *Different types of fish food according to their consumption:*

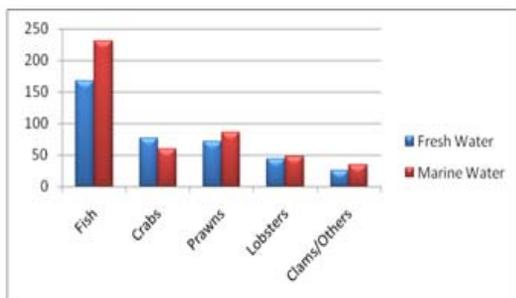


Fig. 3. Types of fish food according to their consumption:

Among the fish consumers interesting data was obtained regarding preference between fresh water and marine water fish (Fig 3). In case of fin fish most of the individuals' preferred marine fish than fresh water fish. Fresh water crabs outnumbered marine. In case of prawns, lobster and calms they were mostly preferred against fresh water.

6) *Methods of fish preparation and knowledge about fish byproducts:*

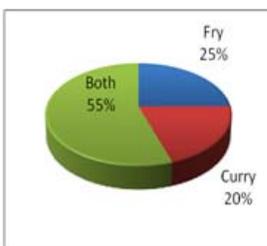
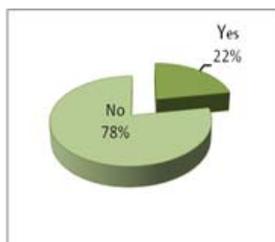


Fig. 4. a) Methods of fish Preparation.



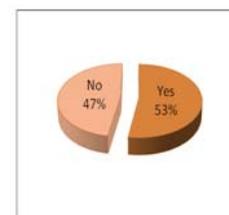
b) Knowledge about fish byproducts.

About fish preparation (Fig. 4a) there was seen a clear demarcation like fried gravy or both. Among fish consumers about 24.92% population prefers fish in as dry dish, 36.31% prefers fish as form of gravy while largest part of population (55.07%) like fish in both fry and gravy form. The alarming condition was observed in total population regarding knowledge regarding Fish Byproducts (Fig. 4b). Data reveals that only 22.18 % of the population is aware about fish byproducts and their nutritional importance.

7) *Distance between the nearest fish market and its Hygienic conditions:*



Fig. 5. a) Distance between residence & fish market.



b) hygienic conditions in the fish market.

Individuals were asked for the distance between their house and nearest fish market (Fig.5a), interestingly 73% population is having a fish market in periphery of less than 5km. While about 27% population has to go more than 5km to purchase fish so they prefer to purchase from vendors nearby. The population living near fish market revealed that consumption pattern is not supporting consumption rate. Consumers are happy with the hygienic conditions in government fish market (Fig 5b). While some of the population is unsatisfied about cleanliness, drainage system.

8) *Awareness about nutrition among the families depending on education of housewives'.*

Table 3. Distribution of families having awareness about nutrition depending on education of housewives'.

Awareness about Nutrition.	Non- Educated	Primary Educated	Well Educated
Yes	5	147	129
No	37	136	80
Total	42	283	209

There were satisfactory observations in all the three categories (Table 3). It was seen highest in well-educated 61.72% followed by primary educated and non-educated with values 51.94% and 11.90% respectively. Data clearly shows direct relationship of education with knowledge about nutrition. In rest of the unaware population fish is consumed first for a change in diet and especially due to delicious taste of fish flesh.

9) *Consumption in consumers among the religion and caste.*

Fish consumption pattern (Table 4) is heavily dependent on the religion and cast of the consumer in the population. The consumption frequency in Hindus was more than Muslims, this clearly indicates that the largest population in Hindus (52.50%) prefers monthly consumption of fish from study area, while about (32%) from Muslim community and (12.96%) from Hindu Brahmin community prefers monthly fish consumption patterns.

Table 4: Incidence of fish consumption in consumers among the religion and castes on regular to yearly basis.

Religion	Castes	Regularly	Weekly	Monthly	Yearly	Total Consumption
Hindu	All casts included	6	113	178	17	314
	Brahmin	-	1	7	2	10
	Lingayat	-	-	-	-	0
Muslim	--	8	15	16	5	44
Jain	--	-	-	-	-	0

However daily fish consumption was highest (16%) noted in Muslim community then in Hindus (1.76%). While there were no records of fish consumption in Hindu Lingayat and Jain communities.

The survey carried out in Indiana on Indiana recreational Anglers with African American anglers (2000) showed that minority active consuming anglers consuming more fish food that was significantly higher than the white [4].

**10) Distribution of vegetarians among religions and castes:**

About 11.4% population was noted pure vegetarian (Fig.6), the prime reason was religious ethics and some cases personal dislikes due to odor and taste. Trend of vegetarians was as Jain, Lingayat, Brahmin, Muslims, and Hindus with figures 100%, 100%, 81.48%, 12% and 7.3% respectively.

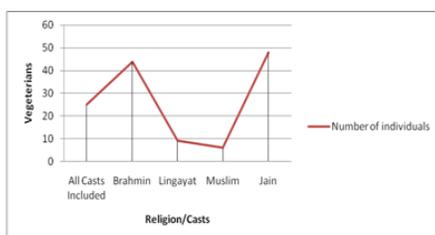


Fig.6. Distribution of vegetarians among religions and castes

The finding of research indicates the problem of how to augment supplies of fish to an ever-growing population in the face of dwindling coastal stocks or from inland source? Some potential solutions suggested by the study may be:

- a. Great care would need to be taken to ensure that any improvements were cost-effective to the beneficiary while, at the same time, maintaining the affordability of the product. This is especially important with the lower income groups.
- b. To take a closer look at new or non-traditional varieties of fish which are currently in low demand, wasted or under-exploited. Perhaps in the not too distant future, and with a strong promotional effort, less popular but fish varieties could become as important in the diet of the Maharashtrians as they are in Sri Lanka and as they are in Kerala [1].
- c. To assess the potential of fresh and brackish water aquaculture to provide greater quantities of fish for local markets.
- d. To promote awareness of the positive health aspects of fish consumption amongst the poorest socio-economic groups and dispel some of the myths and taboos about fish consumption.

The question arises as to who should implement these improvements and promotional strategies based on ongoing market research. Chicken, eggs, milk and several other protein

food not only have more centralized and organized production and distribution systems, but also have their own promotional organizations such as the Egg Produce Association of India, the Poultry Producers' Association, the Milk Marketing Board etc. However, no such centralized body exists to support the domestic fish marketing sector, which comprises a large number of unorganized small-scale operators. Such a body could indeed play a major future role in improving fish marketing in India, just as similar organizations have already done so, and are now doing, in other countries. Its strategy, however, would need to be highly sensitive to the diverse consumer needs. Some of the technical interventions aimed at quality improvement, which are commonplace in other countries, simply may not be financially viable options in India.

**Acknowledgement**

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