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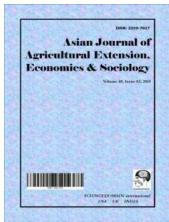
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Challenges in Inland Fish Marketing among Stakeholders in Anand District, Gujarat

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Authors' contributions

This work was carried out in collaboration between the authors. Author SRP designed the study, performed the statistical analysis, wrote the manuscript and supervised the work. Authors SRP and DV had done data collection jointly in identified taluka of Anand district, Gujarat. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2016/27739

Editor(s):

(1) Zhao Chen, Department of Biological Sciences, College of Agriculture, Forestry and Life Sciences, Clemson University, USA.

Reviewers:

(1) Semra Kuçuk, Adnan Menderes University, Aydin, Turkey.

(2) Serguei Aily Franco de Camargo, Universidade Estácio de Sá (Centro Universitário Estácio da Amazônia, Boa Vista, RR), Brazil.

(3) Vecdi Demircan, Suleyman Demirel University, Turkey.

Complete Peer review History: <http://www.sciedomain.org/review-history/15777>

Received 16th June 2016

Accepted 6th August 2016

Published 13th August 2016

Original Research Article

ABSTRACT

Anand district in Gujarat stands first in Inland fish production through ponds and tanks. Here one major objective was put forth by the researcher; that is, to understand different challenges faced by different stakeholders during marketing of inland fish. Fifteen female and fifteen male retailers were selected along with three wholesaler that was a census one and fifteen producers were selected purposively looking into their prevalence in the study area. Data that had been collected were analysed through Garretts ranking technique, weighted average mean. At the end it was found that perishability of the product and theft of the product was marked as a problem in wholesale and producer level respectively. Bargaining by the customer at the end of the sale was found to be a significant problem among all the stakeholders. Competition was found to be least significant among the stakeholders due to implicit cartel among friends and relatives in each stages of marketing.

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Keywords: Challenges in fish marketing; cartel among stake holders; bargaining by the customer; labour problem.

1. INTRODUCTION

Anand district is a major hub for Inland fish production in Gujarat. Its contribution in the state is around 35.39% (2308 metric tonnes) through ponds and tanks [1]. In this particular district, Presence of Indian Council of Agricultural research (ICAR) and Central Institute of Fresh Water Aquaculture (CIFA) regional station and KVK (Krishi Vigyan Kendra) Devataj under Anand Agricultural University get a momentum in fishery production. Still in Anand district, only two cooperatives are existing in Inland fish production and rest of it are in the chunk of informal sector [2]. In comparison to the production of fish, India is very poor and inefficient in fish marketing in India [3] and high perishability of the product and huge competition was perceived as major constraints among market intermediaries [4]. In another study it has been highlighted that market price of fish is determined by freshness, species and availability of fish in the market [5] and major problems in marketing include high perishability and bulkiness of the fish, high cost of storage and transportation, no guarantee of quality and quantity of commodity and high price spread [6]. Hopefully stakeholders will be integrated for channelizing the produce from production center to consumption area.

Taking all above instances into consideration one major objective was put forth by the researcher; that is, to understand various challenges faced by different stakeholders like producer, wholesaler, retailer during marketing of inland fish.

2. RESEARCH METHODOLOGY

Pre-structured schedules were used to collect data from the respondents like pond owners, wholesalers, retailers from eight taluka of the district through purposive sampling. Fifteen ponds were selected purposively and three wholesalers were identified which was a census study and fifteen male and fifteen female retailers were selected equally for fulfilling different data collection purposes. The data were collected in the month of April and May, 2015. Five ponds were taken from Tarapur taluka, seven ponds from Anand taluka, one each from Khambhat Taluka, Borsad Taluka and Sojitra Taluka of the district. Selection of ponds had been undertaken

by considering their effective numbers in Anand district. Fifteen male and fifteen female retailers had been selected from different areas of Anand district by considering their prevalence in market yard through purposive sampling. Data had been collected through a pre-structured schedule and observation method of data collection had also been taken into consideration when it was very difficult to handle the responses from the respondents. All the data have been analysed through weighted average mean for understanding any constraints faced by the female retailer and for other stakeholders Garrett ranking technique has been used by the researcher. Five varieties of inland fish like Rohu, Catla, Nagri, Surimai and Bighead were identified through judgmental sampling and all the stakeholders were selected during the handling of the particular varieties. During this study, the female retailers were asked seventy six affirmative statements and problems were identified after the analysis through weighted average mean whereas male retailers were asked seven structured questions, wholesalers and producers were asked five questions each of their problems identified in pilot study and major problem have been ranked through Garrett's ranking technique.



2.1 Garrett Ranking Technique

Here ranks assigned by the individual respondents are converted into their percent position value by using the formula,

$$\text{Percent Position} = 100 (R_{ij} - 0.5)/N_j$$

Where

- R_{ij} stands for ranks given for the i^{th} factor by the j^{th} individual.

- N_j stands for number of items ranked by j^{th} individual.

3. RESULTS AND DISCUSSION

3.1 Constraints Faced by Producer

In the study area, producers were going for lease of pond for production of fish. That's why they were getting ponds few distances from their home premises. Though they had kept night watchman for keeping their produces intact but could not manage the same from theft. That had been found a major bottleneck among producer for fish production and marketing. Again travelling with the product to the market yard in the time of surplus production, mainly before monsoon or at the time of high demand was again behaved as a challenge among producers. It may be due to added cost in icing of the product, road jam during transportation or may be due to time overrun for selling the product after the advent of high demand. Quality feed with higher price was one of the constraints identified because increased feed price was not produced any premium for the producer due to presence of large number of sellers in the market. Producers were depending on labour from other state like Bihar, Odisha may be due to high wage rate in the concerned state. In some instances he himself was entering in to the pond to mitigate any labour shortage problem. Although selling of the product was appearing as a constraint yet it was managed very comfortably due to informal cartel in the system. Here fish catching activity was done after telephoning conversation among the producer before a day that materialized any competition among sellers for selling the produce.

Table 1. Various problems faced by producers

Problems identified	Garrett score	Rank assigned
Selling of the product	38.2	5
Travelling with the product	58.8	2
Theft of the product	60.4	1
Quality feed with higher price	56.4	3
Lack of labour and capital	42.4	4

3.2 Constraints Faced by Wholesaler

Perishability of the fish was observed as an ongoing problem at the wholesale level. It

may due to improper icing for the product or may be due to infrastructural bottleneck at the wholesale. Here in the study area, wholesaler keep more marine fish than inland one; hopefully focus was also diverted more for marine fish preservation than inland one. Labour problem was also found in wholesale level due to high wage rate. High price fluctuation was there in the study area due to mismatch demand and supply of fishes and its impact was more chronic in presence of only three wholesalers in a single district. Customers were also at upper hand in the study area due to specific consumption pattern. That's why customer was always asking for bargain either on value or on volume. Competition was least ranked as only three wholesalers in the study area.

Table 2. Various problems faced by wholesalers

Problems identified	Garrett score	Rank assigned
High perishability	76	1
Huge competition	25	5
High bargaining	40	4
Labour problem	61	2
High price fluctuation	50	3

3.3 Constraints Faced by Fishermen as Retailer

In the study area, fishermen as retailers were facing many problems at the customer interface at the instances like bargaining or price fluctuation for their products. Here customers were bargaining either on value or on volume. Price fluctuations were occurred either on day basis or customers' demand. It may be due to particular way of preference to vegetarian diets in the study area. Unsuitable market yard was not conducive either retailer or consumer and its indirect effect was observed in fish marketing and its corresponding profit. Here competition among the retailers were ranked least; may be due to cartel based marketing among the retailers with their friends and relatives. Perishability and low profit margin were related with fish as a product itself; may be due to insufficient infrastructure at the grass root level.

3.4 Constraints Faced by Fisherwomen as Retailer

In the study area, fish collection and fish catching were the sole activities of fishermen and fisherwoman was depending on them for fulfilling

demand of the customer. Again from collection of fish to its marketing; a large number of activities were undertaken and each activity added costs for further movement of the produce. At the same time; when female due to her submissive attitudes could not sell them to picky customer at right price. Customers were doing bargain and female retailer lost some percentage over the final price instead of any premium for the good products. Rather its impact was also observed for other fishes in the bulk and their prices was also went down automatically in presence of some fresh fishes in the lot. That's why fresh fish costs more for the female retailers not only in costs that had been incurred for buying and selling process but also due to increase of some real costs had be arisen in the marketing process.

Table 3. Various problems faced by fishermen as retailer

Problems identified	Garrett score	Rank assigned
Perishability of the product	48	5
Competition in the market	25	7
Bargaining by customer	73	1
Price fluctuation	69	2
Dependency of other district for supply	32	6
Unsuitable market yard	57	3
Low profit margin	49	4

As the collection of fish was the activity of male counterpart; at the time of high demand female retailers have gone to other taluka/district for fish collection. It is mainly observed in between mid-May to first half of August; when internal demand goes high due to government ban for catching of marine fish in this particular state. Again inland fishes are captured more before monsoon for mitigating any loss due to water over flows from the ponds and tanks. In this time female retailers may go to collection of fish for handling spike in demand and rationing of supply in the district.

Female retailers were very less retaining power and handed maximum up to 25 kg of fishes within one to two days that was only observed when the fish retailing was the family business. Otherwise female retailers could manage only up to 5 kg of fish at a time in a day. In the particular district demand of the fish was fluctuating working day to holiday. When demand of the

product was going high in holiday, female retailer could not satisfy the customer. That's why, no doubt profit was more in holidays; its pie was not going to the female retailers' pocket.

Table 4. Various problems faced by fisherwomen as retailer

First five constraints identified	Weighted mean score	Rank assigned
Fresh fish costs	4.87	1
More for them	4.80	2
You travel other taluka/district for fish collection	4.60	3
More retailer in winter than summer season	4.47	4
Customer do argument for discount	4.40	5

During winter more retailers were coming to the market assuming more internal demand due to advent of cold. But this was not so apparent; as culture of this particular state prefer vegetarian diet to non-vegetarian one. No doubt demand was increased at some parts of Anand district, where cosmopolitan cultural set up was observing particular in station bazar market in Anand taluka but other areas of the district increased in retailers were reducing dividend from the profit.

Customers of the particular district were doing bargain at the end of the selling of the product; its impact was more precarious among female retailers than male one. Basically at many chunk of the market yard where marketing of fish was the family activities, male fishermen were doing counter bargaining with the customer instead of female one. In Anand district, submissive and over dependence culture particularly in fishery business and poor retaining power due to lack of infrastructure may be created an extra edge among customers over female retailers and its impact may have observed during bargaining of the product.

4. CONCLUSION

No doubt perishability of the product and theft of the product was marked as a problem in

wholesale and producer level respectively, still bargaining by the customer at the end of the sale was found to be a significant problem among all the stakeholders. Competition was found to be least significant among the stakeholders due to implicit cartel among friends and relatives in each stages of marketing.

SUGGESTION

Cooperatives like structure may be promoted among the stakeholders. It curbs any bottleneck for fish marketing. Again cooperatives help them to convert their informal cartel to a formal one.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:

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