

Retail trade of fishes in natura in Paraná Coast – Brazil

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Abstract

It is presented a study that try to support a better understanding of the current scenario of the fish trade in Paraná Coast, Brazil, which aimed to update data on how the fish trade processes were established in Paraná Coast, what were the commercial strategies adopted by traders and discuss the implications of the reality observed in the context of trade in relation to this region. For that, it was carried out from June to November of 2016, an exploratory descriptive research with face-to-face interviews with 40 fishermen with recognized experience in fish commercial processes. It was observed that the main obstacles to the commercial development of the fishery in Paraná Coast, in the perception of the interviewees were the high costs of production, the decrease of fishes stocks and the lack of clients out of the summer time. The main commercial strategy adopted by traders of fish in the region was the discount in the price per quantity sold, and in general, other commercial strategies adopted that could result in a competitive advantage were not observed. It is considered that the sector organization for joint purchasing as a form of cost reduction and strengthening of the social situation in the bargain with the public power, apparently it could give advances in the commercial activity. The adoption of new commercial strategies that are simple and easy to adopt, based on the marketing mix, and that aimed at customer loyalty and expansion of consumption, could positively change the current situation. It is recommended to carry out new and more in-depth studies on the fish trade, in order to diagnose the most efficient commercial strategies in this sector.

Key words: Environmental management, Environment, mills, Fish, Fishermen, Littoral of Paraná.



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INTRODUCTION

Fishing activity is considered one of the oldest in the history of mankind, and began even before agriculture, with cave paintings of 25,000 years indicating the capture of fishes in the African continent and in Europe (Santos et al., 2014).

Nowadays fishing is a primary activity, since its production depends on other means for its existence, such as water and animal resources, but fishing around the world is a relevant source of food and income (Moreno and Carvalhal, 2014). The world GDP (Gross Domestic Product) of fishing activity is around US\$ 600 billion, equivalent to 2% of the world economy, representing 11% of the global agribusiness market, being economically the most important of all categories (Andriguetto Filho, 2003; Anacleto et al., 2010).

Fishing activity in Brazil has been present since the colonization time, growing during the 18th century, when dry fish was one of the main products exported by Paranaguá Port (Paraná Coast) and, until the mid-nineteenth century, fishing was one of the most important activities in the country (Andriguetto Filho, 2003).

Nowadays fishing is still one of the main economic activities and it is divided into artisanal fishing and industrial fishing. According to Anacleto et al., (2007), artisanal fishing is practiced throughout the coastal area of Brazil, and it is characterized for the most part by its lack of infrastructure, rudimentary

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equipments and low cost of production, which requires diversified knowledge of the fishermen on the environment, such as: tidal conditions, seasons of the year, period of fishing by species, reproductive cycle, among others. Knowledge acquired through experience and knowledge passed generation to generation.

Brazilian fishing is important in two spheres, both economically and socially. The activity is found in coastal regions of the country in communities where low levels of specialization and high poverty rates place fishing as its main source of income (Rodrigues and Giudice, 2011).

According to Santos (2004), artisanal fishing can be subdivided into small-scale subsistence fishing, which it is for consumption of the fishermen and their families and commercial or small-scale artisanal fishing.

Industrial fishing uses larger and more powerful boats. More modern catch and conservation technologies are used in this type of fishing. However, according to Anacleto et al. (2007) it may be harmful for some species of fishes, since this modality is not selective because of the forms in which the siene or trawling occurs.

The region of Paraná Coast is constituted by seven cities, namely: Antonina, Guaraqueçaba, Guaratuba, Matinhos, Morretes, Paranaguá and Pontal do Paraná.

In addition to the forms of income generation such as tourism, ports of Paranaguá and Antonina, agriculture, industry and commerce, fishing also has great importance in the economic activities of this region.

Paraná Coast has always had strong ties to fishing, which according to Santos (2004), since the 1930s around 10,000 fishermen and their families survived directly or indirectly from the activity. During the 1970s, after a government package, new technologies and practices, which were also used in the State of Santa Catarina and São Paulo, were implemented in Paraná Coast. The introduction of engines in boats, the use of synthetic fibers and the replacement of canoes by motorized boats were the main innovation installed (Andriguetto Filho, 2003).

Despite the contribution available to Paraná fishermen, the State does not have the same fishing effort as those found in neighboring states (Fuzetti and Corrêa, 2009), and it continues to have little expression in the national scenario (Andriguetto Filho, 2003).

Specifically in Paraná State, it is referred to as one of the main economic activities of the coast along with tourism. However, from the 1970s with the development of new fishing technologies, such as larger boats and location of schools via GPS with the development of the fishing fleet of neighboring states, there was an overwhelming gap between the natural capacity of regeneration of the species caught with the commercial value and the stock of fish removed from the oceans. This fact led to a decline in the amount of fish caught and increased the cost of products due to a greater fishing effort in fishing capture, which made the activity more difficult and caused the exodus (Anacleto et al., 2007).

Currently, Paraná State has the ninth production in Brazil, equivalent to 961.8 tons per year, being the States of Rio Grande do Norte (28,649.7 tons), Ceará (21,219.8 tons) and Santa Catarina (15,636.2 tons) the largest producers. According to data from the Ministério da Pesca e Aquicultura (2016).

The consequent decrease in natural stocks of fishes is due to the use of these extractive fishing technologies which also reflects alarmingly on Paraná Coast, a place that has shown a high reduction in fishing capacity and consequently has reduced the final profit of the families with the sales of their fishes (ANACLETO et al., 2007).

Thus, in the context of the reduction of fishing capacity and the fact that the difficulties encountered in fish trade may be associated to the lack of commercial strategies more appropriate to the sector, especially in Paraná where sea fishing has been developed in an uncoordinated manner, it still has little support from the public or private initiative (Anacleto et al., 2010).

According to Anacleto et al. (2007), understanding the commercial scenario is more easily obtained from the characterization of the forms of action of those involved in this process, and from this knowledge it is possible to establish the bottleneck points that impede the development of the activity.

In this way, investigating and understanding the commercial relations of the fish and the relation with their enterprises becomes essential in proposing models of favoring business opportunities especially for

fishing communities that are recognized by small and often impoverished fishermen (Fuzetti and Corrêa , 2009; Andreghetto Filho et al., 2006; Anacleto et al., 2010).

Thus, in order to subsidize a better understanding of the current scenario of the fish trade in Paraná Coast, a research was conducted with the answers for the following questions:

- a) Identify how the fishing trade processes were established Paraná Coast.
- b) Identify the commercial strategies adopted by traders.
- c) Promote an analysis of the sector based the organization of a SWOT matrix.
- d) Discuss the implications of the reality observed in the context of commerce in relation to Paraná Coast.

MATERIAL AND METHODS

An exploratory and descriptive research was carried out with qualitative approach and according to Lakatos and Marconi (2003) and Freitas et al. (2012) it is presented a diagnosis of the situation of the fish traders in the region involving their commercial configuration, and the data collection, with the purpose of characterizing the profile of the trade was made using semi-structured interviews directed to fishermen who had recognized experience in the studied region.

In order to identify the existence of fishermen who were also the most experienced traders, visits were made to the fish markets, and as some elements of the study population were identified, they indicated others and so on, in a process known as "snow- ball "or self-generated sampling as proposed by Negrelle and Anacleto (2013).

The research with face-to-face interviews for accessibility was directed to 40 people from June to November 2016, in the cities of Paraná Coast where there were fish trades: Paranaguá (n = 8), Pontal do Paraná (n = 10), Antonina (N = 3), Guaraqueçaba (n = 3), Matinhos (n = 8) and Guaratuba (n = 8).

The use of the qualitative approach was adopted in order to obtain the perception of the fishermen/traders on the researched subject, and according to Freitas et al. (2012) after the collection of the primary data, the interpretative and descriptive analysis of the contents obtained during the interviews was adopted, using the data triangulation technique, which involved the multiple perceptions of the interviewees, the researchers' observations during the visits to the commercial places, as well as the interpretations and analysis of the data collected in the interviews, and also in analyzed documents.

In order to investigate which were the main commercial strategies used, as well as the strategies that resulted in the competitive advantage in the perception of the fishermen, they described the 5 most important strategies, categorizing them hierarchically (1 to 5), and then performing the interpretative and descriptive analysis of the content obtained during the interviews.

The sectorial analysis according to Negrelle and Anacleto (2013) was carried out on the basis of the SWOT matrix: Strengths, Weaknesses, Opportunities and Threats related to the fish trade, grouping the strengths and weaknesses in the internal context and the threats and opportunities in the local context of fish marketing.

The opinions expressed in the SWOT matrix were evaluated in terms of the influence exerted and the influence suffered in comparison to the other opinions, and a cross impact matrix was organized, which resulted generated the relevance index obtained by the equation.

After the previous phase, an impact matrix was organized according to Anacleto, Coelho and Curvelo (2016), this matrix, according to the authors, assigns percentage values from 0 to 100 to each opinion expressed by the interviewees, first individually, and subsequently information were crossed in a collective way, comparing as to the respective influence exerted and influence suffered in the commercial capacity, the greater the index the greater the relevance and the attention to be dedicated in the improvement of the enterprise.

The impact matrix generates an index of relevance (importance to the enterprise) that can be obtained by the equation:

$$IR = \frac{InRn * InPn * 100}{\sum Slsp}$$

IR = Relevance Index of the evaluated situation;

InRn = Indexes of received influence;

Inpn = Indexes of induced influence;

Slsp = Sum of indexes (InRn * InPn) of all questions analyzed by participants.

RESULTS AND DISCUSSION

The fishing retail trade in Paraná Coast was carried out by fishermen who also commercialized their own productions, with age of 47.54 years old (range from 24 to 72 years), being predominantly male (n = 80%), higher than the Brazilian average (n = 66%) (Ministério da Pesca e Aquicultura, 2017), the probable explanation for this situation may lie in the services offered in the port activity, a similar situation is described by Fuzetti and Corrêa (2009, p.616), which reveals that among the factors that may interfere in the practice of fishing with low participation of the female gender is the fact that they have found alternatives for maintaining their income in less salubrious and better paid work areas, what increases the family income.

The main boats used by the fishermen were “baleeira”, dinghy, boat and canoe, always with low power engine rarely exceeding 32 Hp.

The fish commercialization places were similar in the cities visited, the municipal fish markets, the fishmonger and the home sales were described, and only in Guaratuba was recorded the sales directly to the industry.

Paraná Coast consists in a region where the greatest flow occurs during the summer time, when thousands of people move to the region due to the tourist attractions, it is emphasized that in this season there are no problems with the fish trade since the demand is greater than the supply. On the other hand, out of this season the demand for fish decreases and the relation offer and demand are reversed and the obstacles to the survival of the families of fishermen and fish traders arise.

The Strengths contingent (Table 1) observed in the fish trade Paraná Coast, also presented similarity to what has already been reported in other studies on Brazilian fishing (Fuzetti and Corrêa, 2009; Andriguetto Filho, 2003; Anacleto et al., 2010), that is, the similarity of the price practiced in the regional context, as well as the income obtained through the sale of the fish were the most relevant factors.

	Strengths	Impact factor
1 st	Similar selling price among fishermen	22,0689
2 nd	Family income	16,5517
3 rd	Associativism in the municipal markets	13,7931
4 th	Sector union	11,3448
5 th	Product demanded by the population	10,3448
6 th	Use of family labor	8,2758
7 th	Sales point near points of expenditure	8,2758
8 th	Simple selling strategies	4,5172
9 th	Several commercialization channels	4,1379
10 th	Diversity of products	1.0000

Table 1. Strengths related to fish trade activity in Paraná Coast in the perception of the interviewees (n = 40).

The set of weaknesses reported by fishermen (Table 2) may explain the poor performance of the regional fish trade, since the productivity is low, and the issues most strongly highlighted are associated to the unsatisfactory sales prices.

Weaknesses		Impact Factor
1 st	Low consumer demand	33,3258
2 nd	Disadvantaged negotiations for the fisherman out of the summer time	15,7303
3 rd	Unprofessional service in precarious sales	13,4831
4 th	Lack of hygiene in the municipal fish markets	8,3887
5 th	Dirty place of sale in family fishmongers	6,7415
6 th	Few promotions	6,7415
7 th	Few options of payment form	6,7415
8 th	Poor product divulgation	1,1235
9 th	High cost with fishing equipment	1, 0000
10 th	Non-specialized labor force	0, 1235

Table 2. The weaknesses related to fish trade activity in Paraná Coast in the perception of the interviewees (n = 40).

The first issue to be considered in the fish trade is the hygiene of the local (Table 2), especially when dealing with fish it should be a priority, in addition to the requirement of Brazilian legislation. A dirty and odorous selling location can amplify the difficulties faced by sellers to attract new customers. In order to ensure hygiene it is necessary to follow the recommendations of health agencies that establish criteria for establishments that sell and store fish. The certifications of these bodies increase the trust of the customers in the establishment and also contribute to the differential towards the competitors. Therefore, it becomes necessary for these people to be aware of the importance of cleaning and organizing their trading environment.

It was observed during the study that most fish traders (n = 90%) because they are small traders they do not offer options of payment, working only with money. Nowadays, there are several means of payment in order to make a sale, and they facilitate those who have opted for other ways than only money.

Thus, retailers should consider other forms of payment, not only cash, since the convenience offered by non-physical money payment is beneficial to both involved, because it guarantees agility and also security.

Nowadays, money in cash has been losing more and more space for credit cards, debit cards and payments made through electronic devices (Wang and Ikeda, 2005). The traders who do not adapt to this reality may have a reduction in their sales capacity, and consequently their profits.

The fish traders in the general context have reported that the major bottlenecks to the activity are the lack of customers, high catch costs and high competition.

The main issues that make the fishing activity expensive are diesel oil and ice for the product preservation, but other factors should also be considered as the purchase of material used both at the time of fishing and in the conservation of the fish, the maintenance of the sales points, in addition to the nets used to catch fish that need to be repaired frequently due to wear and tear from the activities.

Thus, the fishermen from Paraná Coast live the dilemma, if the production costs are high, the increase of the final product price must be passed on to the consumer, if the demand is lower than the supply, the price is limiting factor to the consumption, especially in the case reported by the interviewees that many

fishermen who bring frozen fish from the State of Santa Catarina which are caught with large boats and therefore have a lower cost of production and are more competitive than the production from Paraná.

Apparently part of the causes of the worsening of this obstacle may be tied to the behavior of fish traders. The reversal of the low number of clients according to Cobra (1992), can be reversed with the adoption of commercial strategies that consider the desire and the need of the consumers of a certain segment.

Regarding commercial strategies, it was observed that 37% of respondents do not make any type of sales with discounts or promotional actions, this fact is called a competitive pricing strategy, according to Kotler (2000) the company keep the prices related to the competitors and continue using similar prices, so that there is no rigid relationship with cost, price and demand.

The commercial strategies adopted by fish traders were not intended to increase customer loyalty, or obtain higher profitability rates, it was observed during the study that all respondents only adopted commercial practices that aim to facilitate the disposal of production, since the fish is a perishable product, therefore the useful life can be easily compromised, so in this aspect the discount by quantity sold is the main commercial action adopted.

It is important to say that without the pressure of fish perishability, commercial strategies are adopted by the minority of traders, and only two commercial strategies have been observed.

The first one was related to the promotions and was adopted by only 10% of the interviewees. The adoption of promotions, in other commercial areas already efficient and it is proved that can increase the flow of sales, according to Certo and Peter (1993, p.39), the promotion is a short-term attraction with the objective of selling the product, besides which results in increased sales, reduced stocks and attracting new customers.

The second strategy showed even lower penetration among traders, being practiced by only 2.5% of the respondents that are those who opt for the commercial strategy of offering a greater variety of fish to attract customers and, consequently, increase the commercialization. According to Cobra (1992), products must have, among other things, good quality and variety, thus meeting the customer's needs.

It is urgent that the fishermen from Paraná Coast review the commercial strategies adopted by them, and consider new forms of commercialization, already tested and approved for other segments. According to Kotler (2000), the study for the expansion of marketing should first identify possible clients, income, purchasing habits of similar products and levels of knowledge about the offered product and what factors can serve as guiding factors for the planning of strategic actions, but it is relevant that the customer must have alternatives of consumption, and if he does not get access to the object of his desire, the possibility of the customer making the choice for a substitute product rises.

In this context, consumers, almost generally, have with them a level of determination in the search for the desired product, and if the difficulty found in this acquisition is high, the tendency is in fact for the substitution, since the clients are extremely sensitive to the difficulty of purchasing and whether or not the satisfaction of the consumer in relation to finding the desired product it may interfere in future decisions and the frequency of new purchases of fish.

The situation of the sale price is linked to the increase in the costs of catching fishes, due to the decrease in the natural stocks of fish in Paraná Coast according to the totality of the interviewees this problem is due to the use of extractive fishing technologies, which generates the overexploitation of the vast majority of available fishing resources and obliges fishermen to go further the coast in order to find of the same quantity of fish.

Fishing activity practiced especially by fishermen from the States of Santa Catarina and São Paulo use more modern production technologies than those adopted by small fishermen from Paraná, and these larger boats used by them are equipped with intelligent search systems of large schools, navigate in

waters more distant and deeper, according to respondents it is noticeable that in the last two decades these new technologies have imposed an extractivism effort superior to the capacity of natural regeneration of the species, which reduced the amount of fish and the cost of capture has increased.

This fishing model very close to Paraná Coast has imposed the traditional fishing communities a new reality, where the economy no longer supplants the condition of survival of the activity causing the families' exodus to other regions or the massive abandonment of the fishing activity, that occurs in particular because of the decrease in the final profit of the families with the sales of their fish.

The sustainability of fishing depends exclusively on proposing strategic actions planned in all segments related to the sector, and then investing in projects that are related to the concept of sustainable development and environment preservation what is the greatest challenge for entrepreneurs, especially micro and small fishermen from Paraná Coast without access to commercial formation (n = 100%).

The preservation of environmental fishing resources depends firstly on the way in which the catch is carried out, then on the conservation of the fish and finally on the way in which it is commercialized.

The commercialization of fishes, even if in natura, but performed with added value can increase the profit of the families involved with the fishing in Paraná Coast, since, if the profit in theory increases, the fishing effort can be reduced, which would help the maintenance and recovery of current levels of fish, and could increase the profitability of the families.

Some central issues should be considered in reversing the current situation of fish traders, the first question is the organization of the sector, apparently the fisher colony which is the entity that represents the sector have more played the role of organizing documentation, and does not offer assistance in terms of associative organization for catching fish.

The organization of fishermen in smaller groups could strengthen the social reality, and grant greater bargaining power (Fuzetti and Corrêa, 2009; Anacleto et al., 2010; Santos et al., 2014) in relation to public power in negotiating for improvements in fish markets that favor better hygiene conditions, greater divulgation and signaling the places of commercialization, as well as the negotiation by community structures like the necessary winches for repairs the boats, collective mechanics workshops and a community ice factory.

Another positive factor in the organization of the groups may be the collective purchase, which has proved to be a common practice in other commercial areas, thus the union of the fishermen increases the quantities of nets, diesel oil and ice purchasing, and on the other hand broad the bargain power with suppliers getting good discount margins, which reduces production costs and increases the profitability of retailers.

Finally, the organization and group can also facilitate the negotiation processes with the sector entity (fishers' colony) in the realization and technical courses that may favor the growth of the activity and commercialization of fish in Paraná Coast.

FINAL CONSIDERATIONS

The main obstacles to the commercial development of fishing in Paraná Coast, in the perception of the fish traders in Paraná Coast, were the high costs of production, the decrease of fish natural stocks and the lack of clients out of summer time.

The main commercial strategy adopted by fish traders in Paraná Coast was the discount in the price per quantity sold. In general context, other commercial strategies adopted that could result in competitive advantage were not observed.

The organization of the sector for joint purchasing as a form of cost reduction and strengthening of the social context in the bargain with the public power, apparently can give advances in the commercial activity.

The adoption of new commercial strategies that are simple and easy to adopt, based on the marketing mix, aiming at customer loyalty and increasing consumption, can positively change the current situation. It is recommended to carry out new and more in-depth studies on fish trade in order to diagnose the most efficient commercial strategies in this sector.

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