

FARMED FISH IN EUROPEAN SEAFOOD CONSUMPTION: PERCEPTION VERSUS NUMBERS

PHILIPPE PAQUOTTE, OFIMER, 76 rue de Reuilly 75012, Paris, France
philippe.paquette@ofimer.fr

ABSTRACT

Although European fish consumption is increasingly dependant on aquaculture products given the decrease of worldwide fisheries landings, the image of farmed fish is more and more controversial. This paper aims at assessing the importance of farmed fish in the European seafood consumption, as well in terms of image and perception as in terms of market share and consumer profile. Different tools have been used in this study in order to combine quantitative and qualitative surveys. First, the share of farmed fish in the net supply of fish has been assessed, not only on the basis of statistical data but also on the basis of expert opinion, since foreign trade data do not mention the farmed or wild origin of fish. Second, a review of image studies about farmed fish has been scanned in order to make comparisons between species and between countries. Third, in the case of the French market, the consumer profile for farmed fish has been characterized on the basis of consumer panels, and a regular survey of consumer attitude toward farmed fish according to the media events has been conducted during four years. The main conclusions of the study are the following. First, despite very different seafood consumption structures and despite an heterogeneous image, the per capita consumption of farmed fish is quiet similar in different European countries. In particular, France is the biggest European market for farmed fish although it is one of the countries where its image is the worst. Second, the consumer profile for farmed fish is not homogeneous and depends on the species, according to the case study in France. Third, farmed fish is very sensitive to food scares, but the analysis of the market impact due to the wild versus farmed salmon media crisis in France in January 2004 has shown that consumer reaction is very different according to the processing level and to the distribution channel.

Keywords: aquaculture, consumption, image, media crisis

SEAFOOD CONSUMPTION IN EUROPE AND SHARE OF FARMED PRODUCTS IN FINFISH CONSUMPTION

Methodology

The methodology used in this paper is the supply balance sheet methodology as developed in the European concerted action MASMANAP (MASMANAP, 2001), in the report by Oceanic Developpement for Eurostat (2004) and in the report by Failler and al. for the FAO (2003). The food use supply is calculated for each country according to the following equation “consumption = production + imports – imports”. The production data come from the FAO (Fishsat +, 2005) and the import/export data come from Eurostat (Comext Eurostat, 2005). All data are food use only data.

The FAO production data are in live weight, and make it possible to differentiate the mode of production, fisheries or aquaculture. The Eurostat data are available in net weight. So, all Eurostat data have been converted into live weight thanks to a set of conversion ratios. The Eurostat data do not indicate the wild or farmed origin of the products. So, it has been assessed for each item and for each country thanks to expert knowledge.

The calculation has been done for eight European countries, which cover 90% of the total seafood consumption in Europe (EU 15): Denmark, France, Germany, Greece, Italy, Portugal, Spain and UK. All data are 2002 data.

Results

The main results are presented in tables I, II and III. Finfish consumption is very variable among these European countries, ranging from 15,3 kg (Germany) per capita and per year to 58 kg (Portugal). As far as farmed finfish is concerned, the production in these 8 countries amounts to 725 000 tonnes per year, i.e. 11% of their total finfish production. France is the first European market for farmed fish with almost 180 000 tonnes per year (live weight), above Germany, UK, Italy and Spain. While the seafood consumption is still very different between European countries, the consumption of farmed fish per capita is quite homogeneous in Europe, around 2 kg/capita/year.

Table I: Supply balance sheet in eight European countries (tonnes)

	France	Spain	Italy	UK	Germany	Portugal	Greece	Denmark
Aquaculture	473 285	301 892	323 723	157 713	162 714	20 481	46 507	17 568
farmed finfish	172 926	112 316	119 153	122 311	145 828	8 958	33 721	10 376
farmed shellfish	300 359	189 576	204 570	35 402	16 886	11 522	12 786	7 192
Fisheries	1 641 066	1 626 431	1 058 114	1 140 765	1 100 461	576 468	186 579	188 447
wild finfish	1 325 059	1 170 405	669 352	1 031 209	1 019 252	505 165	130 906	174 110
wild shellfish	316 008	456 026	388 762	109 555	81 208	71 303	55 673	14 338
Total	2 114 351	1 928 323	1 381 837	1 298 478	1 263 175	596 948	233 086	206 015
finfish	1 497 985	1 282 722	788 505	1 153 521	1 165 081	514 123	164 627	184 485
shellfish	616 366	645 601	593 332	144 958	98 094	82 826	68 459	21 530

Table II: Share of aquaculture in seafood consumption in eight European countries

	France	Spain	Italy	UK	Germany	Portugal	Greece	Denmark
Total	22%	16%	23%	12%	13%	3%	20%	9%
fish	12%	9%	15%	11%	13%	2%	20%	6%
shellfish	49%	29%	34%	24%	17%	14%	19%	33%

Table III: Per capita consumption of seafood in eight European countries (kg/year)

	France	Spain	Italy	UK	Germany	Portugal	Greece	Denmark
Total	34,4	48,1	23,9	21,6	15,4	58,0	22,0	38,4
Aquaculture	7,7	7,5	5,6	2,6	2,0	2,0	4,4	3,3
farmed finfish	2,8	2,8	2,1	2,0	1,8	0,9	3,2	1,9
farmed shellfish	4,9	4,7	3,5	0,6	0,2	1,1	1,2	1,3

WHAT ABOUT THE IMAGE OF FARMED FISH ?

Methodology

A comparative analysis of different qualitative studies carried out in Europe and in France between 1996 and 2005 has been done in order to highlight the mainstream factors concerning the image of farmed fish and the new trends. Although the objectives of these studies are diverse, all of them contribute to identify the pros and cons of farmed fish in consumer's mind. The objectives of these studies are : building promotion and communication campaigns (COPA-COGEAC1996, G3-FIOM 1997, IOD-OFIMER 1999, GIRA 2001), helping the traditional fishmongers to differentiate from the multiples (PROTEIS-OFIMER 2001), introducing a new farmed product in the market (GEM-OFIMER 2001, GEM-OFIMER 2002), providing information for seafood marketing (EUROSALMON 2003) or setting up an on-going survey of consumer confidence towards seafood in relation with sanitary and environmental events (image

barometer IOD-OFIMER 2001-2005). These ad hoc studies use both qualitative and quantitative methods.

Results

Seafood consumption is increasing in all European countries. Meat consumption is stable (poultry up, pork stable, red meat down). Price is certainly not the key factor, but seafood image is definitely good. It is a paradoxical image with two opposite points: on the one hand, the positive notions of open sea, nature and good for health, and on the other hand, the negative items which are bones, odours, difficulty to store and to cook. That is the reason of the overwhelming success of these new processed products sold at the fresh corner, like smoked salmon, surimi, cooked shrimps, terrines, rillettes and other seafood delicatessen. These products have got rid of the major constraints related to seafood thanks to processing and the use of preservation technologies, but keep an image of health and freshness thanks to the fact they are sold "as fresh".

This review of image studies available since 1998 shows that the implementation of the E.U. regulation about fish labelling in 2002 has increased the awareness of the farming origin. Nevertheless, when consumers are aware of the farmed origin of a fish, they are less confident toward that fish according to the image barometer conducted by IOD for OFIMER since 2001.

The positive items of farmed fish are the following: year round availability, more affordable, more democratic, steady price, avoid over-fishing and natural populations depletion. Indeed, aquaculture is thought by consumers as a way to reduce over-fishing in both COGECA (1996) and IOD/OFIMER studies (1999 - 2005): 35% would eat more farmed fish and 74% less wild fish in case of confirmed risk of stock depletion (IOD/OFIMER 2005). As for freshness and control of quality standards, these are key advantages for distributors only, not for consumers who think that the fish they buy is fresh and do not feel the need of reassurance on this point (Girard and Paquette, 2003).

The negative items are the following: less tasty, less safe (which is all the more negative as health is proved to be one of the major reason for what people eat fish), less symbolic value. Indeed, naturality, wildness, open sea are values related to fish, and fresh fish in particular, but which are not connected to farmed fish.

Different states of mind exist throughout Europe: in France, the image is very bad, in Italy, farming does not exist in the awareness of the consumers, but in UK and Germany, fish farming is well perceived by consumers (everything under control, no image of the natural violence in the nature). This last observation, i.e. the diversity of image about farmed fish, is very interesting to analyse with regard to the fact that farmed fish consumption per capita is quite homogeneous in the different European countries, as it has been assessed in the first part of this paper. In this case, figures turn out to be in contradiction with perception.

THE CONSUMER PROFILE FOR FARMED FISH

Methodology

This study is based on the TNS consumer panel in France, which makes it possible to gather the weekly purchase declarations from 7 500 households for fresh fish and 12 000 households for processed fish. There is no differentiation between wild and farmed origin because consumer declarations are not reliable enough to make it possible such a differentiation. Nevertheless, farming is the main origin for several

species in France: trout (100%), salmon (92%), seabass/seabream (65%). The consumer profile for these species has been compared with the consumer profile for fresh fish in general.

Results

The first result is the difference in consumer profile between fresh whole fish and fresh fillets, as shown in table IV. The households who purchase whole fresh fillets are older, with higher income, have no kids and live in the west part of France, while the households who buy fillets are present in all the country and include families with average income.

Table IV: Consumer profile for fresh fish (source TNS panel)

	whole fish	fresh fillets
region	west, south east	everywhere
age	over 65	from 35 to 64
revenu	upper	upper middle
size of household	2 persons	couples, but also families

As for farmed fish, the consumer profile is very different according to the species, as shown in table V. Although trout is sold mainly as whole fish, it has a consumer profile closer to fresh fillets than to whole fresh fish. As salmon is the best seller in the fish fillets segment, it has a consumer profile quite similar to fish fillets in general. Consumers of seabass and seabream are typical consumers of whole fresh fish, despite the fact that these two species are mainly farmed and sold at a lower price than most whole captured fish like sole, monk, red-mullet or john-dory. Nevertheless, these farmed species reach also young consumers in the high income segment, especially in big cities, which is a market segment with high potential.

Table V: Consumer profile for farmed fresh fish (source TNS panel)

	seabass	seabream	salmon	trout
region	south	south east, paris	everywhere	everywhere
age	senior and more	younger than for other fresh fish	average	senior
revenu	upper	upper upper	upper, just a little less than for other fresh fish	average
size of household	like whole fish, especially couples	couples, but also singles and families	all sizes	all sizes

THE IMPACT OF MEDIA CRISES ON THE CONSUMPTION OF FARMED FISH: THE CASE OF SALMON ON THE FRENCH MARKET IN JANUARY 2004

The image of farmed fish turns out to be less resistant than the image of wild fish in case of media crisis. In France, there has been little impact on wild fish consumption after the two last black tides (Erika 2000, Prestige 2003), except locally, for people who were living on the spoiled coast. Also, there has been only a short term impact following the presence of toxins in scallops in the Channel area (2004/2005). On the contrary, there has been a heavy impact on salmon consumption, first after the ESB crisis in 2000 and then after the « Science » media crisis (January 2004). That is this event which will be studied in particular.

Methodology

The analysis of the impact of the media crisis following the paper about PCB in salmon in Science in January 2004 has been done by the combination of different methods. First, a special wave of enquiries has been launched in the framework of the IOD/OFIMER image barometer. In this case, a sample of 550 consumers representative of the French population have been interviewed by phone between 25 and 30 of January 2004. These people have been asked the same questions as usual about their confidence level towards seafood and their purchase intentions, plus special questions about salmon and farmed fish in relation with the media titles of the moment. Second, the purchase data from the TNS consumer panel have been surveyed on a weekly basis. Third, 15 interviews by phone have been done with representatives of the main catering and restaurant chains between January 22 and February 5, 2004.

Results

Before mention of the media crisis, the consumers interviewed through the image barometer have declared a spontaneous decrease in their confidence rating for salmon (6,88 versus 7,58, out of 11), but no significant change for other farmed fish or for wild fish. After mention of the media crisis, 22% of the consumers declared having reduced their purchases of salmon due to this information, and 12% of the consumers declared having reduced their purchases of other farmed fish. These results are quite similar to what has been recorded for beef in 2000 and for poultry in 2005/2006. A more detailed analysis of the results shows that the impact has been the lowest in Paris area and among newspapers readers. Indeed, this media crisis has taken place mainly on the TV channels, and has been moderately relayed in the newspapers.

The decrease in salmon purchases by households has been assessed to 35% by the TNS panel data for the months of January and February (Fig. 1).

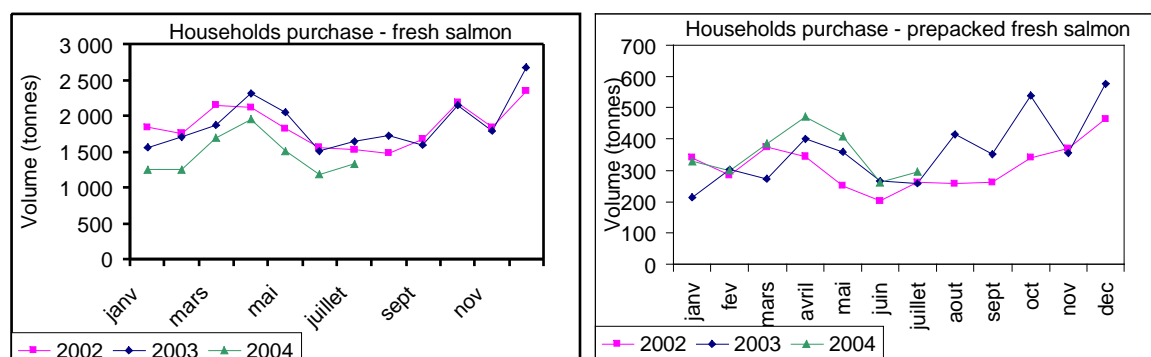


Figure 1. Households purchase of fresh salmon in France (source TNS)

Nevertheless, according to the TNS panel, the impact of the media crisis has been much less negative on salmon fillets than on whole salmon, and inconsistent on pre-packed salmon fillets. Indeed, sales of pre-packed salmon fillets have been increasing during the media crisis, following the same trend as usual.

The return to the normal level of consumption has been progressive but not totally completed before the end of the year. In the meantime, no change has been recorded in the global consumption of fresh fish by households, which means that the decrease in salmon consumption was due to the media crisis and that a transfer has been done from salmon to other fish. No change either has been recorded in the purchase trends of other farmed fish like trout or seabass/seabream.

The special interviews with restaurants have shown that the sector of catering for the enterprises has been impacted more than all other sectors. Very often, the withdrawal of salmon from the menu has not been done on the initiative of the caterer, but following a request given by the human resources manager of the enterprise to the chartered caterer. Very little impact has been noticed in the sector of commercial restaurants, as well for individual commercial restaurants as for restaurant chains. In that case, the restaurant managers have maintained salmon at the menu thanks to the trustful relationship which exists between them and the consumers. For the restaurants as a whole, less than 5% decrease in purchases has been recorded and no impact on other farmed fish.

CONCLUSION

Despite very different seafood consumption structures and an heterogeneous image, per-capita consumption of farmed fish is quiet similar in European countries. France is the biggest market for farmed fish, in spite of a very bad image. The consumer profile for farmed fish depends on the species, and is not the same for all farmed species. Farmed fish is very sensitive to food scares, but it depends on the level of processing and on the distribution channel.

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