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The French market for seafood

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The French market for seafood

by

Marie Christine Monfort

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This report provides an updated overview of the French market for fish and fishery products. It addresses the major drivers of change in supply and demand, distribution, labelling and certification, as well as current consumer trends. The report also includes practical advice for foreign producers interested in the French market, both in terms of product development, market entry and distribution.

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1. KEYS TO THE FRENCH MARKET

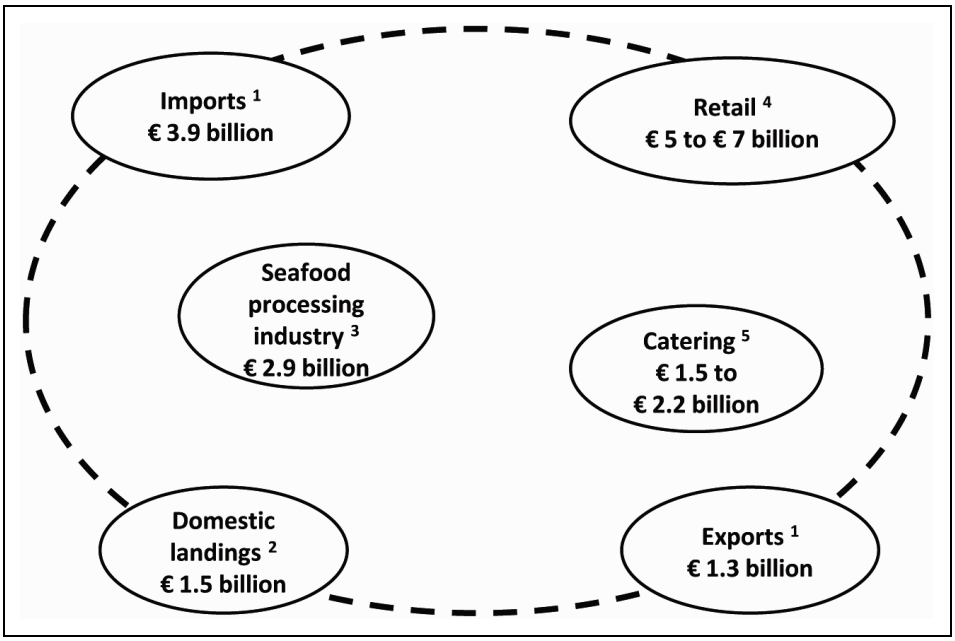
A large market	Sixty-five million inhabitants well disposed towards seafood, with 35 kg per capita consumption. A total of 2.2 million tonnes in equivalent live weight, of which nearly 2 million tonnes are imported.
Small production of wild seafood	No growth expectations: all stocks are fully- or over-exploited. The fishing industry is facing the problem of rising production costs, including soaring oil prices, damaging the profitability of the dominant trawl fleet.
Limited domestic aquaculture	Mainly oysters, mussels and trout. The first one is severely hit by a virus and production is expected to be limited in years to come. Very little development is expected in this industry.
Slow growth	This mature market grows in line with the population, i.e. 1 percent per annum.
Very diversified	The market is open to many different species from the North Atlantic, the Mediterranean and from all continents' waters.
Very open to freshwater and farmed seafood	The French were thought to prefer marine fish; however, they show high acceptance for pangasius from Viet Nam and Nile perch from eastern Africa. In the same way, they were thought to dislike farmed seafood; instead, they are the largest market in Europe for aquaculture products such as salmon, shrimp, oysters and mussels. This could point to price as a key purchasing factor.
More sophisticated	The market moves towards sophisticated convenient products. Sales of whole fresh fish will continue to decline to the advantage of fillets, portions, graded pieces packed in most cases, and shelled crustaceans and shellfish. Precooked or fully cooked items will be increasingly demanded.
More information	Professional buyers and final consumers are seeking further information on several aspects of the food they sell or eat, such as traceability, indication of origin, guarantee of sustainability, etc.
Prices increase	How to remain competitive in a price increase context? The seafood industry will have to find the way. Several options are already being used.

2. DEMAND BY PRODUCT CATEGORIES AND SPECIES

It is difficult to know exactly how much fish the French consume. Statistics vary greatly, depending on the information sources, aggregate considered or calculation method.

According to FAO, annual per capita supply (2007 reference) was estimated at 35 kg equivalent live weight (compared with 21 kg for the Europe average). The seafood end market is estimated at EUR 6.5 to 9 billion[1] before VAT for 900 000 tonnes of output that is ready to be eaten or prepared (retail and food industry). In equivalent live weight, the market absorbs some 2.2 million tonnes every year, placing France as Europe's largest or second largest market together with Spain. In terms of value it represents a fifth of the European Union (EU) market[2].

Figure 1. The French seafood sector



[1] Trade data, 2008.
[2] FranceAgriMer, rapport production, 2008 data.
[3] Ministry of Agriculture 2008 estimates.
[4] FranceAgriMer - Secodip, Insee rapport consommation.
[5] FranceAgriMer - Gira.

[1] In several EU studies the market is said to reach EUR 10 billion. The difference with our computation reflects the VAT.
[2] EU, 2009.

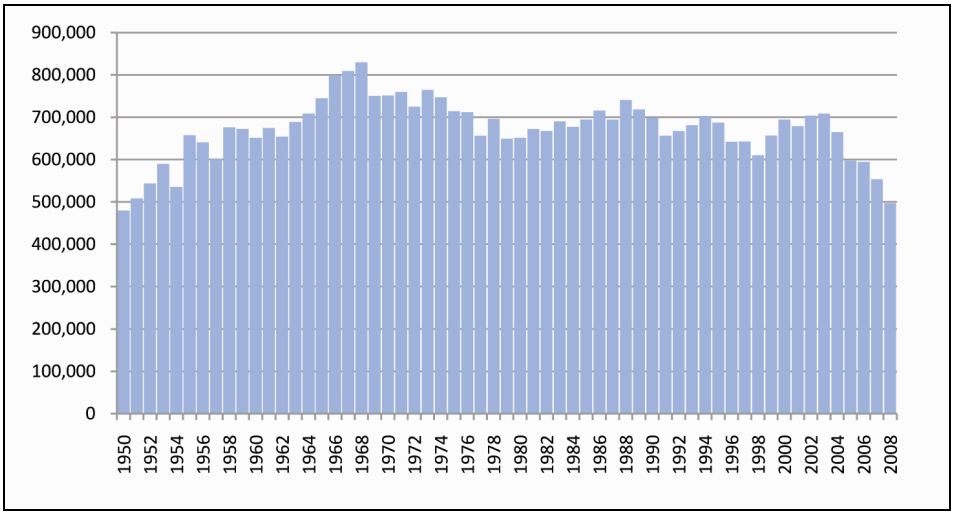
2.1. SOURCES OF SUPPLIES

2.1.1. Domestic production

Wild fish

France is a modest seafood producer. According to FAO, fisheries production fell to 500 000 tonnes in 2008, after a decade of decline. Figures from the national administration indicate wild capture to reach 700 000 tonnes. Both sources of data confirm the sharp drop recorded in the past years, estimated at 200 000 tonnes in the last five years. The degradation of the fish stocks tapped by French fishermen largely explains these bleak volume performances.

Figure 2. French production in tonnes



Source: FAO FishStat.

Most fishing activity takes place in the North East Atlantic, which is thought to be widely overexploited. Some stocks can hardly regenerate (low recruitment) and most suffer from economic and biological overexploitation.

Fishing fleet

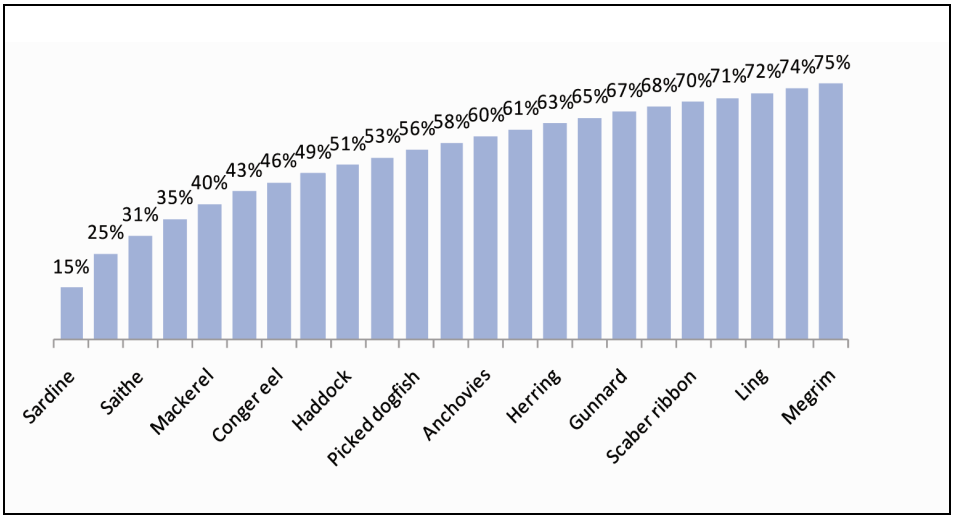
Despite all attempts to restrain the fishing fleet, regardless of the decline in the number of fishing vessels, the fishing capacity has gradually increased. When considering engine horse power to measure the capture capacity, it has increased by 35 percent from 1989 to 2008. Thanks to individual boat productivity improvements, volumes produced by one gross registered tonnage increased from 1.9 tonnes in 1989 to 2.7 tonnes in 2002[3].

French aquatic production is dominated by a wide diversity of finfish and shellfish landed and marketed fresh. No fewer than 23 species make up 75 percent of the total landings in volume terms. The most abundant species is sardine, with some 28 000 tonnes out of a total of 205 000 tonnes, responsible for 15 percent of all wild landings,

3 Ifremer, 2009.

followed by anglerfish, saithe and whiting. The five major species make 40 percent of all landings, volume wise.

Figure 3. Cumulative landings, 2008 data (based on landed volumes)



Source: DPMA, FranceAgriMer, 2010.

In 2008, the French fishing fleet consisted of 7 400 vessels, including 2 400 vessels in overseas territories, operating in the Indian, the Pacific and the Atlantic Oceans. When measured in number of units, the French European fishing fleet is dominated by coastal small-sized vessels, yet the bulk of volumes come from high sea trawlers and purse seiners (400 vessels).

The coming challenges for the fishing industry include production cost and profitability; maintenance of fishing capacity considering an ageing fleet and low attraction to young fishermen, resource availability and its management. The image of the fisherman may or may not impact the image and thus performance of the industry.

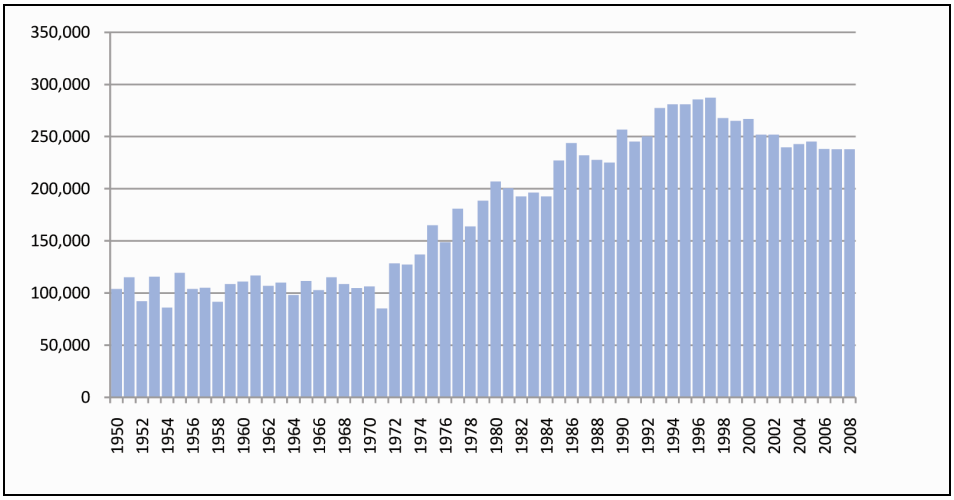
Aquaculture

The production of shellfish is rather stable at almost 200 000 tonnes per annum. With 100 000 tonnes of cupped oysters (*Crassostrea gigas)* and a few thousand tonnes of flat *Ostrea edulis* produced annually, France is Europe's number one oyster producer. With 70 000 tonnes of mussels (*Mytilus edulis),* the country ranks as the number two mussel producer in Europe.

The situation for oyster farming is, at the moment, critical, since a viral epidemic threatens the entire production. This plague started in 2008, ruining large parts of stocks of first-year spats. The source of the epidemic is a herpes virus, the OsHV-1. It is not the first oyster crisis the country is going through, but this one is exceptional by its degree and by its origin being a man-made disaster initiated by mass production in farms and the increased presence of oysters grown in hatcheries, rather than in the wild.

Production of farmed finfish in France is small, with total production reaching at most 50 000 tonnes, worth EUR 164 million[4] ex-farm, of which 30 000 tonnes are farmed trout, mainly *Oncorhynchus mykiss*. Other freshwater finfish include carp (4 000 tonnes), sturgeon (*Acipenser baerii)* (400 tonnes). Less than 8 000 tonnes of farmed seawater finfish are produced annually, of which 4 000 tonnes are of seabass (*Dicentrarchus labrax)*, 1 800 tonnes are of gilthead seabream (*Sparus aurata)* and 800 tonnes are of turbot (*Psetta maxima)*. There is a small production of sturgeon roes (caviar) estimated at 20 tonnes worth EUR 12 million ex-farm (EUR 560/kg).

Figure 4. French aquaculture production in tonnes



Source: FAO FishStat, 2010.

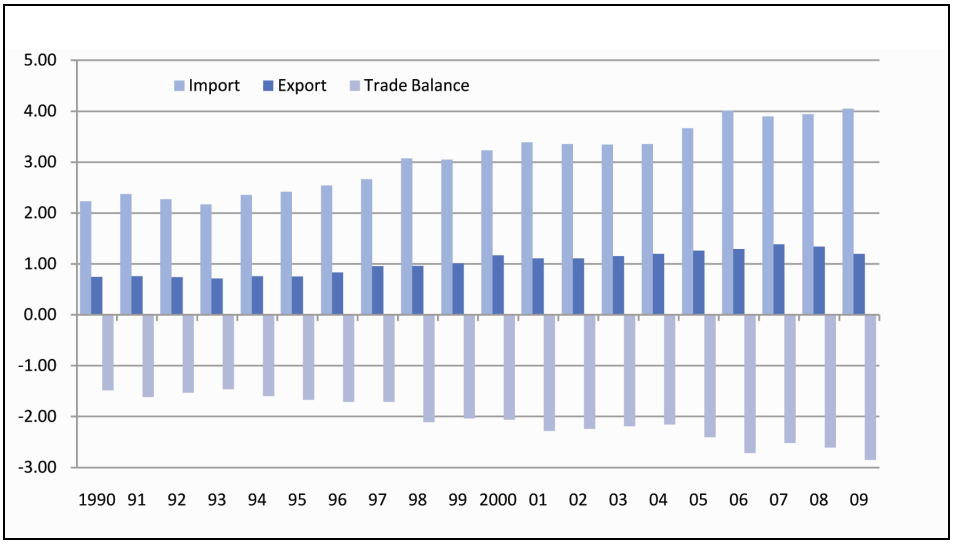
With the existing techniques, this industry is unlikely to grow significantly, due to the moderate support and disinterest from public authorities who are more in favour of supporting other sectors, such as the tourist industry. A better chance of development may come in the medium-term from offshore technologies.

2.1.2. Imports

France's trade balance is characterized by a large deficit in aquatic products. Constantly growing imports reached their maximum of EUR 4.0 billion in 2009, compared with EUR 1.2 billion exports that same year. In 2009 the trade deficit reached EUR 2.8 billion.

[4] DPMA, 2009.

Figure 5. Structural trade deficit



Source: Eurostat.

In 2009, frozen items were the dominant category (EUR 430 million), followed by fresh with EUR 361 million. The number one imported species is salmon, with imports worth EUR 690 million, followed by shrimp (EUR 526 million), tuna (EUR 452 million) and cod (EUR 256 million).

France relies on numerous supplying countries from all over the world. The main ones in 2009 were Norway (EUR 454 million), the United Kingdom (EUR 365 million) and Spain (EUR 277 million). However, Norway is the number one supplier from extra communitarian countries. United States is the second non-EU supplier, followed by China.

The main challenges the market is facing are: how to access safe and good quality, as well as price competitive supplies. This issue is especially delicate for the well-developed processing industry, which relies on imported raw material.

2.1.3. Exports

In 2009, France exported seafood worth EUR 1.2 billion, of which EUR 529 million fresh, EUR 315 frozen and EUR 198 million preserved and prepared. The main countries importing seafood from France are Italy (EUR 310 million), Spain (EUR 270 million), Belgium, Germany and the United Kingdom. Eighty percent of all exports are destined to EU countries.

2.1.4. Processing industry

The seafood processing industry can be divided into primary processing and secondary processing industry. The first includes all fish merchants who process fresh seafood they buy at fish auctions. This involves gutting, taking the heads off and making fillets, slices and loins.

The second category includes all companies, regardless of their size, which process seafood that they transform into sophisticated products (ready meals, breaded fillets, salads, etc.).

Primary processing

In 2009, the 370 coastal fish processors of France generated a EUR 2.2 billion turnover. This industry is predominantly made up of small-scale companies. The number of companies in primary processing and their total turnover has been steadily declining during the last 20 years due to several factors: domestic landings are decreasing; business consolidation and numerous takeovers. Primary processing is also threatened by low labour-cost countries, such as Poland, where increasing filleting operations take place in very modern premises.

Secondary processing industry

In 2005, the secondary processing industry included 295 companies that generated a EUR 3.3 billion turnover. Sixty-seven percent of all companies generated a low turnover, below EUR 5 million. It is worth mentioning that, in addition to the above described category, some 46 companies are involved in both industries. When it comes to secondary processing, 27 percent of the total (EUR 3.3 billion) turnover comes from the canning industry; 21 percent from the freezing industry and 19 percent from curing/smoking. Shrimp cooking is important with some 11 percent and surimi with 8 percent.

The country's 19 canneries production reaches 70 000 tonnes, of which 32 000 tonnes are of tuna, 15 000 tonnes mackerel and 8 000 tonnes sardines. Other species include herring, anchovies, shellfish and soups. Significant volumes of canned seafood are imported to supplement the domestic production. Especially, the country imports 120 000 tonnes of canned tuna and 26 000 tonnes of canned sardines.

Morocco is a key partner on the market for sardine, being an important supplier of fresh and frozen sardine and the number one supplier of canned sardine, with 72 percent of the 19 000 tonnes imported.

The smoked salmon industry and its 3 000 employees is of primary importance, with no less than 68 000 tonnes of raw fish (salmon and trout) processed to produce 33 000 tonnes of finished products. Imports of smoked salmon have increased in recent years to reach 5 700 tonnes in 2009, of which 3 400 tonnes were bought from Poland. Several cost-efficient industrialists have made Poland an important smoked salmon producing country. Joint ventures have been signed recently between French and Polish operators.
For secondary processing companies, especially for those making fresh/chilled products with a short shelf-life, the proximity to markets constitutes a real competitive advantage. As the demand for convenience products expands, this industry is flourishing and has limited threats from foreign competitors.

How to remain competitive in a context of soaring raw material prices is the main concern of both segments, coastal fish merchants and secondary processors, of this labour intensive industry[5].

2.1.5. Key indicators

This section is based on the quantitative data provided by FAO and those from FranceAgriMer, a public body in charge of providing marketing intelligence for all food, including seafood.

Table 1. Total apparent consumption FAO

In tonnes	**2000**	**2003**	**2007**
Production	901	878	833
Non-food use	20	20	47
Imports	1 513	1 679	2 051
Exports	557	542	689
Total food supply	1 837	1 996	2 147
Population inhabitants	55 429	60 144	61 714
Per capita supply, kg	**33**	**33**	**35**

Production + Imports – Exports, except non-food uses, based on FAO Fisheries circular N° 821.

Table 2. Total apparent consumption FranceAgriMer

In tonnes	**2003**	**2007**	**2009**
Production	885	780	673
Import	1 741	1 925	1 953
Export	516	513	405
Total apparent consumption	2 110	2 191	2 222
Population	60 144	63 623	64 351
Per capita supply, kg	**35**	**34**	**34**

Production + Imports – Exports, except non-food uses, based on FranceAgriMer data.

The per capita consumption in equivalent live weight is estimated at 35 kg by both FAO (2008) and FranceAgriMer (2009). We consider that if not accurate, these data are nevertheless representative and offer a reliable basis for further investigation.

Table 3. Degree of national auto-provisioning = production/total apparent consumption

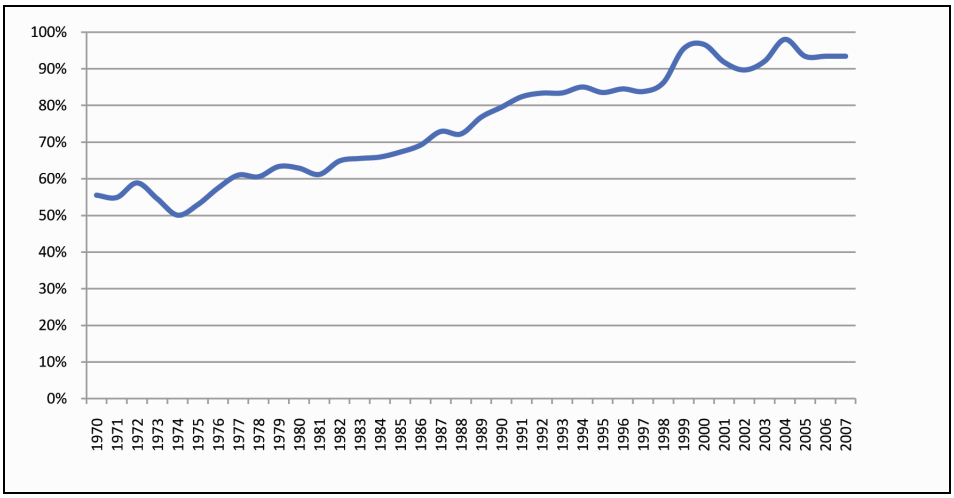
2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
47%	42%	42%	42%	39%	36%	35%	36%	30%	30%

Source: FranceAgriMer.

[5] Both industry processing seafood industries offer jobs to 18 500 employees.

The degree of auto-provisioning has dramatically declined in the past years due to the combined effect of the decrease in domestic supplies and the increased demand for seafood.

Figure 6. Propensity to import = imports/total apparent consumption



Source: FAO FishStat, 2010.

France is heavily dependent upon external supplies of raw, pre-processed and end-prepared seafood products. The domestic production does not satisfy the internal demand; the country needs to import as much as it consumes (>90 percent).

2.2. TODAY'S DEMAND

Although predominantly meat-eaters, with a meat intake four times greater than their seafood intake, French consumers are quite partial to seafood, with some 35 kg consumed each year compared with 20 kg on average for Europe. This market is outstanding not only for its size, but also for its variety. A wide range of species and a large variety of preparations are available on the market.

2.2.1. Main food consumption characteristics

In France's well developed economy, food needs are fully satisfied. Population growth is low (1 percent per annum) and demand for food is stable in terms of volume. In recent years, the demand for food and drink barely increased by 1 percent per annum.

Table 4. Household expenses, fluctuations in percentage

	2005	2006	2009
Food and drink	1.2%	0.9%	0.5%
Health	2.3%	1.6%	4.4%
Communication	6.6%	10.2%	0.4%
Hotel and restaurant	0.6%	1.5%	2.6%

Source: INSEE, 2010.

The market's moderate growth leads to competition between operators involved in the food chain. Major protein producers compete to gain access to the limited space on supermarket shelves and to grow the demand for their products by end users. How to attract consumers' attention who spend less than 40 minutes in supermarkets, compared with the 90 minutes spent 20 years ago[6], with no more than 12 seconds to choose and place selected items in their shopping trolleys[7]? In this context, food manufacturers develop aggressive marketing and commercial tactics to attract buyers and encourage their loyalty.

All food producers, through individual or collective initiatives, spend significant sums on trying to understand consumers' motivation, through advertising, promoting and ultimately publicly arguing about the benefits of their products. Yet the number one factor that makes consumers change their purchasing decisions is the price. When clearly advertised, including in free catalogues distributed to thousands of families, price discounts boost sales by as much as two to three times compared to normal. According to fresh fish supermarkets managers, over 30 percent of all fresh finfish in volumes are sold at promotional prices. This rate goes up to 50 percent in certain chains[8].

Today, what goes into shopping trolleys and what the catering industry buys is different compared to 20 years ago. Both sociological movements and economic conditions are responsible for this change.

The population is ageing. In 2005, France had 12.6 million people aged 60 years and over compared with 9.1 million in 1970. This group constitutes 21 percent of the population compared with 18 percent in 1970 and it will be 31 percent in 2035. According to the National Institute of Statistics and Economic Studies (INSEE), by 2050 the country will have 22.3 million people aged 60 and over; which represents an 80 percent growth over the 45 years.

Family structures have changed with an increasing number of single people. Despite the high birth rate in France (the second highest in Europe after Ireland[9]), the country has less couples with children today (31 percent) than 30 years ago (35 percent). Family structures are far more heterogeneous today (number of people, organization).

France is experiencing a long period of high unemployment (20 years with an unemployment rate close to or over 10 percent). This gloomy economic situation, with enlarged low-income population, has favoured low-price sub-segments. When it comes to food, development of low-price retailers (hard discount) and caterers (fast food, low-budget restaurants and sandwiches) is the most visible effect of this situation. In the catering industry, the need for cost control to maintain competitiveness has induced, among others, some changes in the purchasing attitudes, with preferences given, for example, to getting better yields and no loss products (fixed weight portions for instance).

The loss of culinary expertise that traditionally passed from generation to generation is due to the reduced time spent in the kitchen by those with the knowledge (generally the

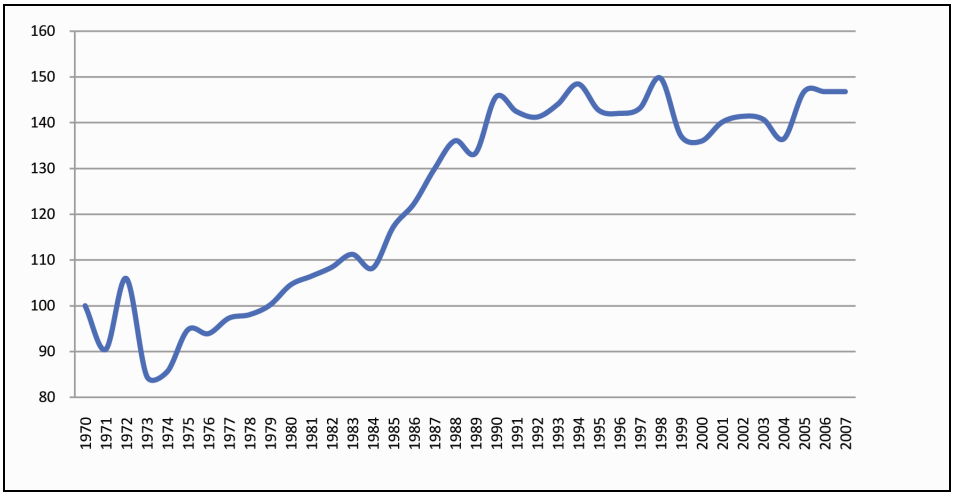
[6] MarketingScan, 2005.
[7] Les échos, 2005.
[8] Personal communication.
[9] Overall, 12.8 percent birth rate in France, 16.8 percent in Ireland, 10.7 percent EU25 (Source: INSEE, 2009).

mother/grandmother) as well as by those learning (children/young adults) and possibly to a lack of interest. This phenomenon has stimulated the demand for ready cooked products for all courses (starters, main dishes, desserts).

Over this 40-year period, per capita seafood consumption has increased from 18 to 35 kg, with a sharp increase during the 1970-1990 period. This category of protein today accounts for 25 percent of all animal proteins consumed by the French. This positive movement is mainly due to three factors:

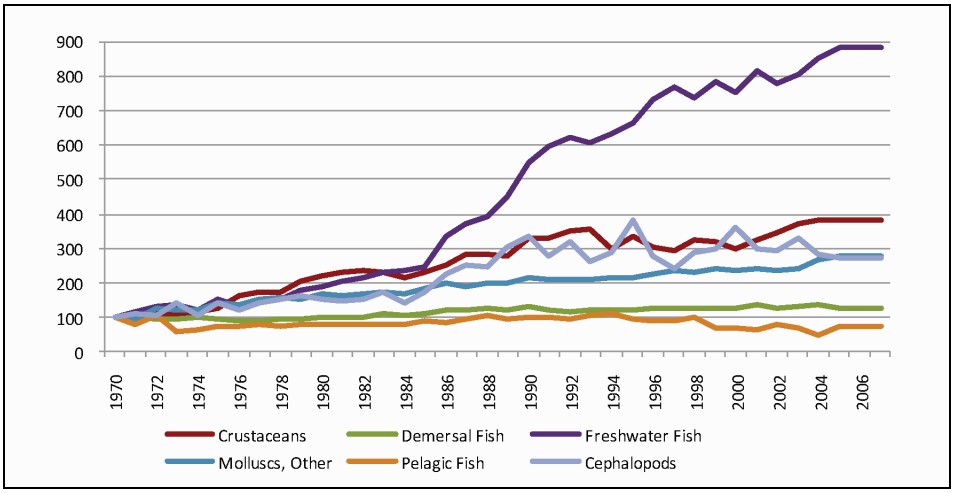
- increased availability of seafood, fresh or frozen all over the country, even in most remote regions, due to an improvement in logistics and distribution (efficiency, cost);
- enlarged supplies of convenience seafood; and
- the positive image of seafood now being widely recognized as healthy food and, in this respect, its relative advantage with competing products (beef, poultry).

Figure 7. Seafood consumption 1970 = index 100 in volume



Source: FAO FishStat, 2010.

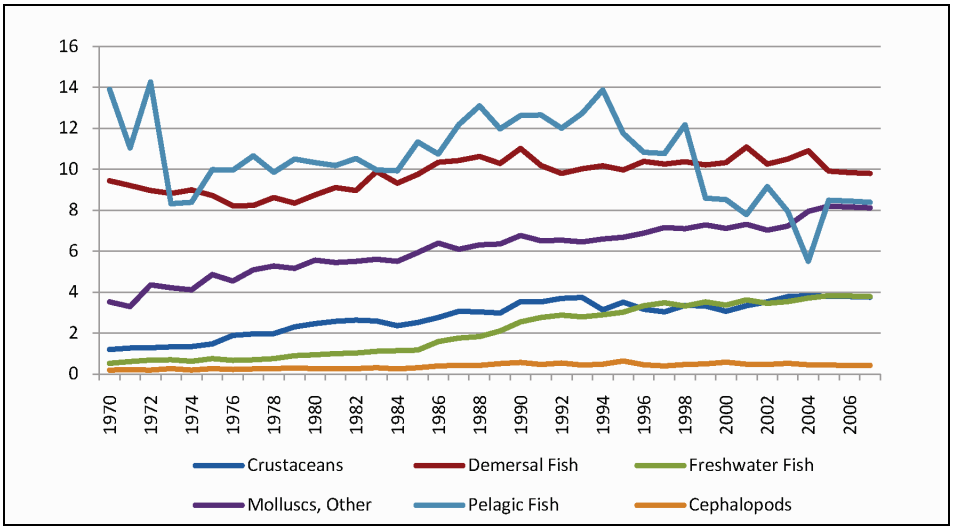
Figure 8. Seafood consumption by product category 1970 = index 100 in volume



Source: FAO FishStat, 2010.

These long-term time series illustrate the main movement of the seafood in France. Figure 8 illustrates the total seafood demand, while Figure 9 gives the details by individual in kilograms.

Figure 9. Seafood consumption by product category year in kg per capita

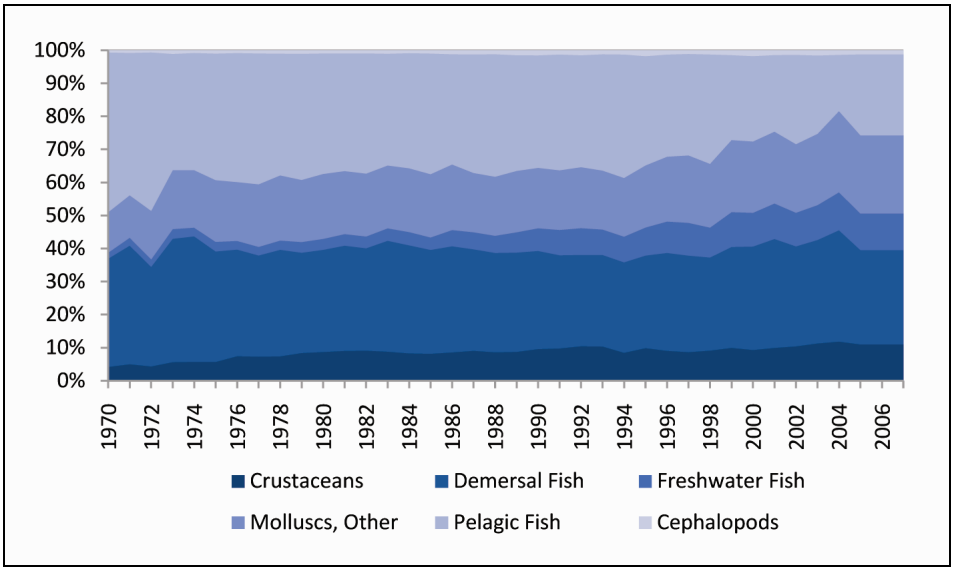


Source: FAO FishStat, 2010.

Pelagic fish, mainly sardine, mackerel and herring, are gradually losing market share with per capita consumption declining by 1 percent per annum over the period from 14 kg per capita to 8 kg. The disarray of the North East Atlantic herring fisheries in the mid-seventies, with a ban on catches, had an immediate impact on the supply and a devastating effect on long-term demand: consumers moved away from this species

without ever fully returning. Fishing companies had to find new markets; France was not one of them.

Figure 10. Seafood consumption by product category year in market share (volume)



Source: FAO FishStat, 2010.

The consumption for demersal fish has remained constant at 10 kg per annum per inhabitant; yet in this category, an important move between these highly substitutable species has occurred as a consequence once again of the availability and current prices of each species. In this long-time period, the country has opened up to frozen hake from several parts of the world, to Alaska pollock and hoki.

Consumption of molluscs has grown more than twofold to reach 8 kg, with farmed mussels being the undisputed winner of this category.

Freshwater fish has also grown nearly ten times from 0.5 to 4 kg, here including farmed salmon, the number one of this category, wild Nile perch and later farmed pangasius. This eradicates the long-held belief that the French do not like freshwater fish.

Finally, thanks to the increased availability of competitively priced farmed products, the demand for crustaceans, such as shrimp, has jumped from 1 to 4 kg per inhabitant.

Seafood is consumed both as a starter and a main course. As a starter, the dominant products are crustaceans, such as shrimp, crab, molluscs (oysters, mussels, other bivalves), and smoked fish (mainly salmon). All these products may also be integrated as an ingredient in main dishes. Some shellfish are traditionally eaten raw (oysters), while other is cooked (mussels). All cooking styles are commonly utilized, including frying, boiling, steaming and baking.

The diversity of seafood is remarkable. It is partly due to the large diversity of species landed in the country, on both the Atlantic and the Mediterranean coasts. It also results

from the demand generated by the large population (circa 400 000) based in French territories in the West Indies, the Indian Ocean and immigrants (circa 4 million) from all over the world.

The demand for simple, quick to prepare products has been growing since the mid-eighties. White fish was the first to be processed into fillets or steaks before being sold, and more recently, it is also being prepackaged.

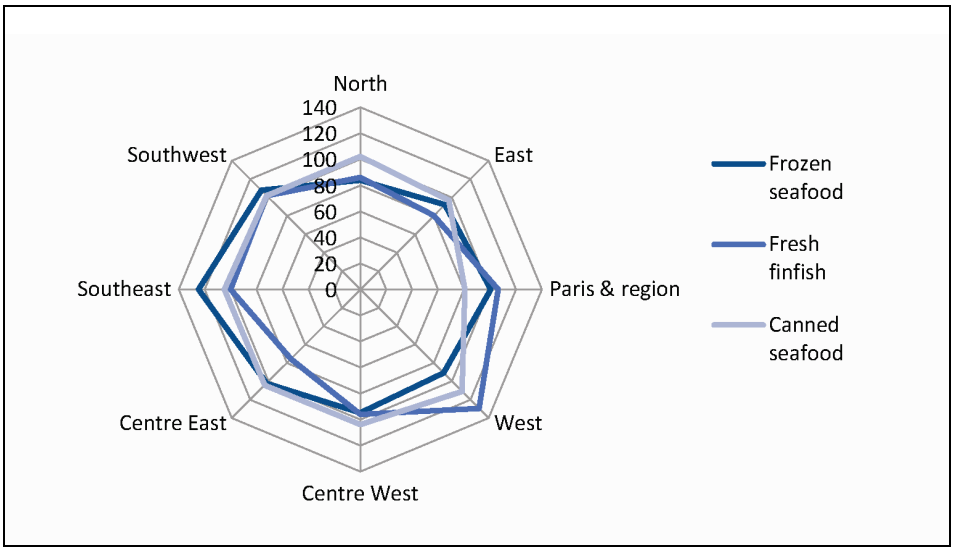
According to Kantar Worldpanel, the demand for a seafood delicatessen (including all seafood-based preparations) increased from 77 000 tonnes in 1999 to 160 000 in 2009, worth EUR 1.7 billion (VAT excl.).

The growing demand for time-saving products has resulted in the development of processed seafood products, which require less time and less expertise to prepare. Cleaning, cutting into portions, precooking and assembling are increasingly performed by seafood manufacturers and less and less by end-users. Consumers not only seek out pre-processed products at competitive prices, but they also tend to give their preference to fuss-free items that carry positive values.

2.2.2. Demand by consumers' profile

Demand for seafood varies greatly by geographical location, age group and socio-conomic classes. Furthermore, one single consumer may express different needs depending on the consumption context (week day, week-end, celebration, etc.). Food traditions are rather distinct by region and demand for certain products varies greatly.

Figure 11. Per capita seafood purchase index in volume by product category

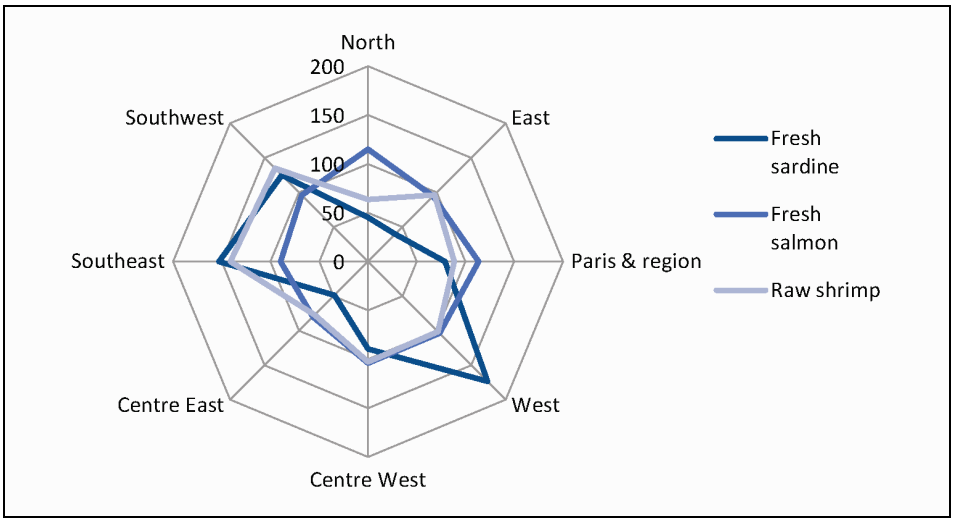


Source: FranceAgriMer.

Figure 11 indicates that consumers' purchases are homogeneous on a regional basis for canned seafood, while demand for fresh fish is far higher in the West (close to fishing regions) than in eastern regions, far from the sea.

Even in single categories, such as fresh seafood, differences by species may be dramatic, as illustrated in Figure 12. Fresh sardine intake ranges from index 40 in the East to index 180 in the West, where it is preferred. It is interesting to note that demand for salmon is amazingly homogeneous all through the country.

Figure 12. Per capita seafood purchase in volume index by species



100 refers to the average in France.
Source: FranceAgriMer.

Seafood consumption varies markedly by age group. The older the population, the larger is the consumption of traditional items. For instance, people of over 65 consume 9.4 kg of fresh finfish, while youngsters only consume 3.6 kg. By contrast, demand for frozen finfish is higher with young people compared with older ones (see Table 5).

By contrast, the younger generation consumes on average more canned seafood and chilled delicatessen (ready meal) than the older generation. The time limitation, the attraction to ready meals, marketing efforts by processors and their lower interest in cooking make the young generation go for easier and faster to prepare products (fresh delicatessen).

Table 5. Seafood consumption level by age category in 2009

	<35 years	>65 years
Fresh finfish	3.6 kg	9.4 kg
Fresh crustaceans	1.3 kg	3.3 kg
Fresh shellfish other than crust	3.0 kg	4.5 kg
Frozen finfish	5.1 kg	6.0 kg
Fresh/chilled delicatessen (carrying bar code)	4.5 kg	3.8 kg
Can	3.6 kg	3.6 kg

Source: Kantar for FranceAgriMer, 2010.

Seafood consumption also varies quite a lot according to the social status of consumers. Table 6 indicates that the higher the economic category the higher the consumption of fresh seafood, shellfish, crustacean and cephalopods. By contrast, consumption of canned and frozen seafood, which are the cheapest categories, is higher among the population with lower incomes (low-economic category).

Table 6. Seafood consumption level by social category in 2009

	Top eco	Low eco	EUR/kg
Fresh finfish	8.4 kg	6.4 kg	EUR 11.23/kg
Fresh crustaceans	2.7 kg	2.1 kg	EUR 11.54/kg
Fresh shellfish other than crust	4.2 kg	4.6 kg	EUR 5.26/kg
Frozen finfish	5.9 kg	7.1 kg	EUR 8.24/kg
Fresh/chilled delicatessen (bar code)	5.1 kg	5.2 kg	EUR 11.80/kg
Can	3.6 kg	5.0 kg	EUR 8.3/kg

Source: Kantar for FranceAgriMer, 2010.

Consumption of seafood is a rather complex phenomenon to grasp, being the result of several moving socio-economic factors.

2.2.3. Seafood consumption at home vs away from home

The data on the quantity of seafood purchased by restaurants is less precise and reliable than the one purchased for home use. The only existing panel collects partial data and extrapolation can only be considered as approximate estimations. According to these existing data, the share of seafood consumed in restaurants represents 30 percent of the national consumption. This proportion varies greatly according to the product. According to the panel, restaurants' demand for prepared food is limited (5 percent canned, 5 percent delicatessen), while the segment absorbs 33 percent of the total frozen seafood and 29 percent of fresh.

Table 7. At home vs in restaurants by outlets, 2009 market shares in volume

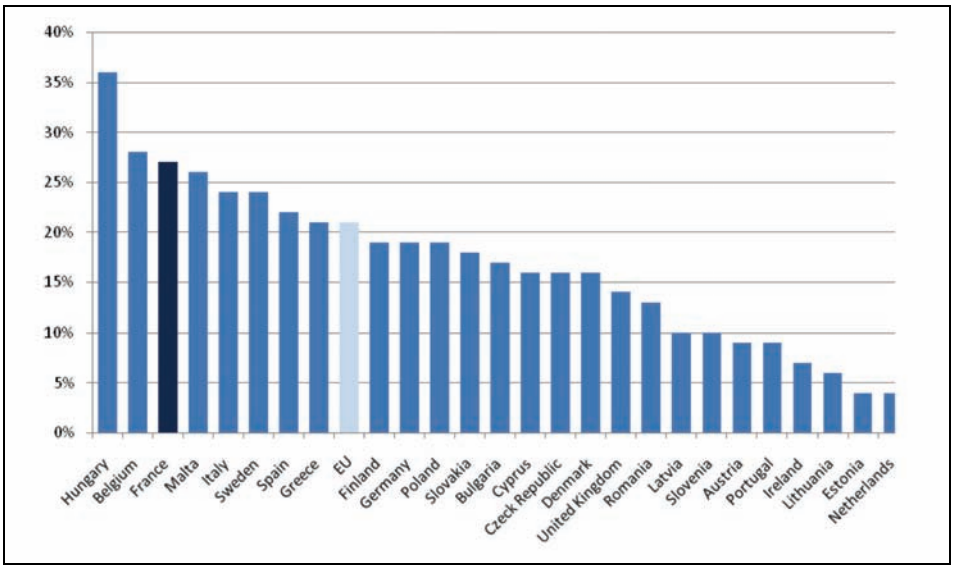
	Supermarkets	Ind. Fishmongers	Commercial catering	Institutional catering
Fresh	53%	18%	27%	2%
Frozen	57%	0%	14%	19%
Canned	89%	6%	0%	5%

Source: Gira for FranceAgriMer, 2010.

2.2.4. Farmed vs wild

The French are ambiguous towards farmed seafood and declare[10] that they prefer wild fish, yet their appetite for farmed fish is important and growing, with some 580 000 tonnes of grown seafood (in equivalent live weight) consumed per annum (2007 data).

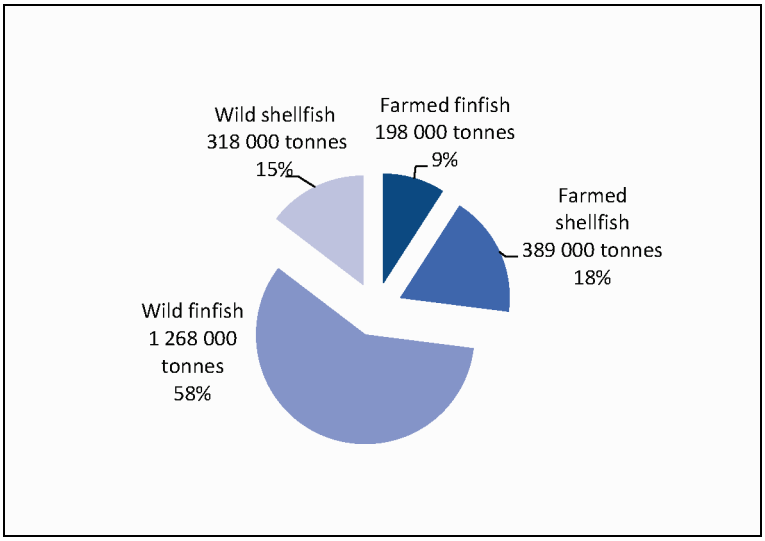
Figure 13. Farmed vs wild seafood by European countries in volume 2007



Source: Paquotte, P., (2010): European Commission DG Mare, unpublished data.

[10] Numerous surveys give the same results: wild fish is preferred.

Figure 14. Farmed vs wild seafood: market shares in volume in 2007



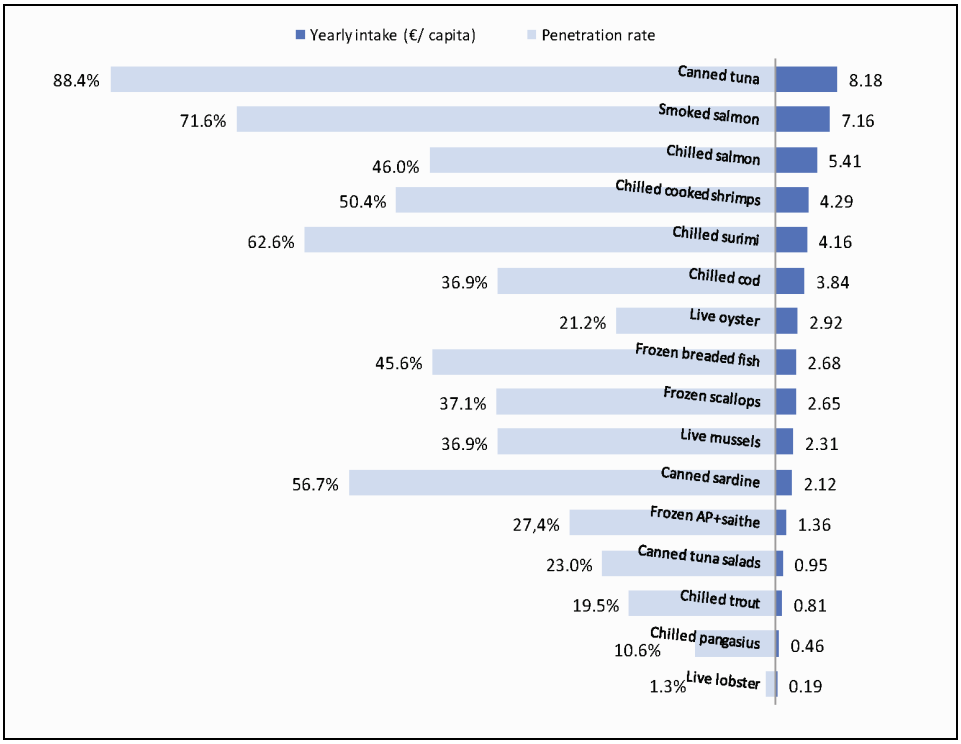
Source: Paquotte, P., (2010): European Commission DG Mare, unpublished data.

For retail outlets, the availability of farmed seafood in large quantities, at stable and competitive prices, is favoured by large-scale retailers, more than by independent fishmongers. In restaurants, the demand for wild or farmed seafood will depend upon the profile of the outlet. Upscale restaurants will be able to make the necessary financial effort (wild fish is normally more expensive than the farmed equivalent) to buy and serve wild seafood. Most of them, however, whether low-end or prestige restaurants, consider wild fish of better quality despite numerous tests, including blind tests, which gives good marks to farmed fish. In 2010, Nofima research institute carried out a study on restaurant chefs' perception of farmed cod in France. On a scale from 1 to 7, where 7 was very good, farmed cod received an average of 6 for all attributes (colour, taste, freshness, skin, etc.)[11]. During the same study, the blind test organized in a restaurant at Boulogne-sur-Mer (March 2010) concluded that the farmed *Gadus morhua* recorded positive appreciation compared with the wild equivalent.

Beside this general attitude towards seafood, different products attract different views from consumers. Figure 15 illustrates the fact that consumption rates varies significantly by species and by product form. Whereas canned tuna is consumed by 88 percent of the French consumers, chilled seabass is only consumed by a minority (5 percent). Intake level also varies quite considerably by item: while each buyer spends on average EUR 8.18 buying canned tuna per year, their budget for canned sardine is only EUR 2.12.

[11] Østli, Jog M. Carlehög, 2010.

Figure 15. Penetration rate and average yearly intake by product in 2009



Source: Kantar for FranceAgriMer, 2010.

3. DISTRIBUTION CHANNELS

Consumers can buy seafood either in supermarkets or at independent fishmonger shops. Over the last 20 years, this latter type of retailer has considerably lost market share in favour of the supermarket category.

3.1. TRADITIONAL FISHMONGERS

In the category of independent fishmongers it is possible to find fixed site retailers, who own one or several shops located in city centres, and mobile fishmongers who go from one town market to another, depending on the week day.

Table 8 . Number of independents fishmongers (companies)

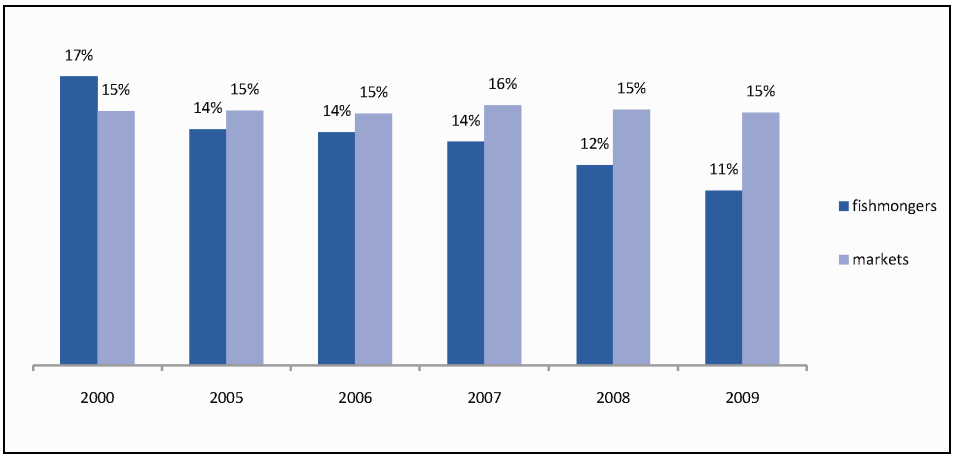
1987	1998	2000	2002	2004	2006
7 750	2 708	2 601	2 220	2 430	2 200

Source: INSEE.

The number of fishmongers is higher in coastal areas, where consumption of seafood is greater. As fishmongers we refer to independent retailers who run either a fixed site shop specialized in selling fresh seafood, and mobile vendors who sell fresh seafood in open air markets. In 2009, fixed site fishmongers sold approximately 11 000 tonnes of fresh finfish, 2 100 tonnes of fresh crustaceans and 8 300 tonnes of shellfish. Mobile vendors sold approximately 17 000 tonnes of finfish, 2 800 tonnes of fresh crustaceans and 17 600 tonnes of fresh shellfish.

While the fixed site shops market share dropped from 17 percent (value) to 11 percent, the market share of mobile vendors remained stable at 15 percent market share.

Figure 16. Retail market share in turnover fresh finfish by value from 2000–2009



Source: Kantar for FranceAgriMer.

Fishmongers buy both domestic and imported fresh seafood mainly from specialized wholesalers, such as the ones operating in Rungis food market near Paris. Rungis is the country's number one fresh food market and one of the largest in Europe together with Madrid and Barcelona. Twenty wholesalers who sell approximately 75 000 tonnes of fresh seafood, of which 50 000 tonnes are of finfish, operate in this market. The importance of the wholesale market has gradually declined from 110 000 tonnes traded per annum in the late 1970s to 75 000 tonnes in 2009. The decline of Rungis reflects the fall in the number of fishmongers and the change in seafood distribution with large-scale players buying directly without the need of middlemen. The stabilization in the last 4 years of volume traded at Rungis market may indicate that no further decline is expected.

The role of middlemen in the seafood sector is questioned as it has been for the past 20 years. Is there still room for middlemen in a context of distribution rationalization and cost reduction efforts? The answer is clearly yes for several reasons. The seafood that enters France comes from no less than 100 different countries, and complex documentation and certification are expected by end-buyers. The distribution of seafood is a complex operation that requires expertise, time and a risk-taking attitude. Various sources of hazard along the seafood trading channels (sanitary rules, compliance with specifications, quality claims, currency variations, etc.) may have severe impacts if not monitored. In many cases, it turns out to be more cost-efficient for end-sellers to externalize these operations and get importers/brokers to do the job.

Whilst large-scale end-sellers (retailers, catering chains) are notoriously risk-adverse, importers/brokers play the necessary risk-taking roles. As an illustration, many, if not all new species in the country have been, and still are, introduced by innovative importers.

3.2. LARGE-SCALE RETAILERS

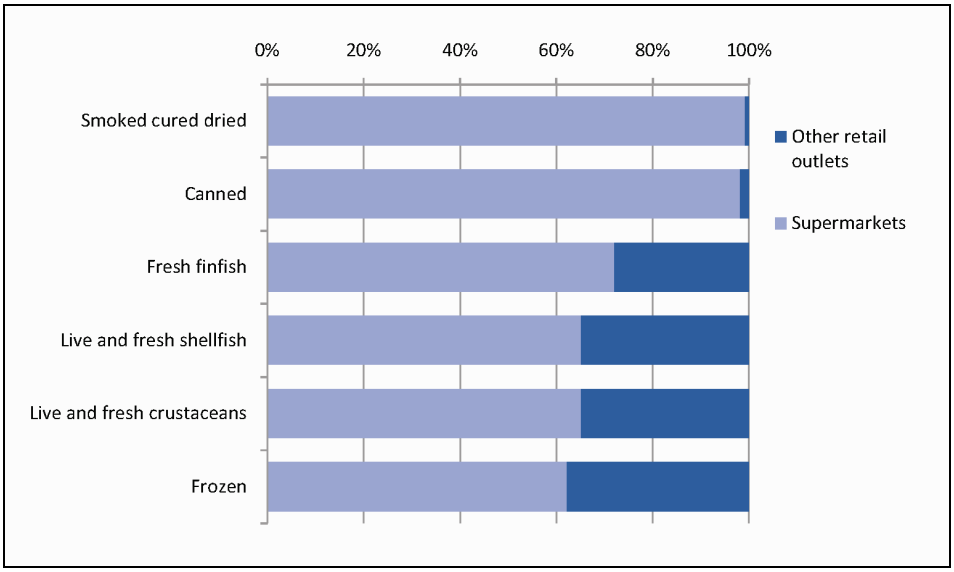
3.2.1. Supermarkets

Supermarkets organized in chains dominate the retail market. In 2009, 66 percent of all food products were sold in supermarkets compared with 65.7 percent sold in 2000, 62 percent in 1994 and 52.7 percent in 1990[12].

They have a dominant role in seafood, with sales over 95 percent for canned, smoked and cured products. Their market share for fresh seafood is limited to 70 percent, the rest is being distributed by independent retailers and fishmongers.

[12] INSEE.

Figure 17. The retail market for seafood by category in 2009 (value)



Source: Kantar, 2010.

The main retail chains are as follows: Carrefour, Leclerc, Auchan, Intermarché, Casino, Système U.

Seafood is branded in diverse ways, according to the segment targeted. In the wet fresh fish segment, no name spontaneously comes to consumers' minds, for the simple reason that branding is a very recent phenomenon. Yet, retailers affix their names to some fish when they claim that the "supply chain" is fully controlled. In the market for smoked and cured products, Labeyrie is the number one and probably the only brand that could be spontaneously cited. In the market for frozen seafood, Findus and Captain Iglo are the two names which emerged, most likely the only ones. In the Business-to-Business environment, the reputation attached to some names has the same effect as brands, they create loyalty.

For fresh fish, consumers are more loyal to vendors they buy from (fishmongers, supermarkets wet fish counters), than to producers they do not know. Supermarkets have slowly, but firmly, started to occupy this marketing gap and worked at creating branded fresh product lines. When it comes to fresh products, most retailers and large-scale wholesalers have now created their own brands, declaring that the origin is from "own supply chains" that they control. The breadth of assortment of these private label (PL) lines varies from chain to chain, yet farmed salmon, seabass and seabream are nearly always included in the branded assortment. Large-scale wholesalers selling at national scale to the food service industry have also developed their own labels, conveying the concepts of safety and quality.

In 1991, Carrefour introduced a process known as the Quality Chain among cattle farmers in the Normandy region of France. At the time, this process of ensuring traceability from the field to the table was highly innovative. As of today, Carrefour has established a large number of supply chains for seafood, including one on salmon (*Salmo*

salar), two for shrimp (*Penaeus vannamei* and *Litoenaeus stylirostris)* and one for crab (*Cancer pagurus)*.

The five founding principles of the Carrefour Quality Chain are as follows:

- Commitment to original taste and authenticity of products;
- Sustainable partnership, with long-term commitment by everyone involved in the chain (farmers, breeders, processors and Carrefour);
- Fair price for all concerned, set at an appropriate level rewarding producers for their commitment to quality;
- Consistent quality, from field to table, achieved through adherence to a detailed set of specifications by all the parties involved; and
- Environmental preservation, through control of environmental impact (preservation of natural resources).

Finfish marketed under the private brand "Gulf Stream" by Intermarché supermarkets are claimed to comply with environmentally friendly processes, ensuring full traceability, being flavoursome and convenient. This brand was created in 2001.

Retailers' recently produced labels have the same role as traditional company brands. They create loyalty, they prevent direct comparison between retailers' offerings, and they confirm retailers' commitment to values that are important for their clients. They tell consumers what they want to hear. They not only declare that the product is safe, but also that it is produced according to environmentally friendly methods, socially acceptable processes, etc.

These retailers' private brands also convey a guarantee of quality. As such, they compete with dedicated quality labels.

3.2.2. Specialized frozen food outlets

Freezer centres are retail shops displaying frozen food exclusively. These shops were created in the seventies and reached their peak in the early 1980s. Since then this category of retail outlets lost market share in favour of supermarkets. They are today responsible for the 17 percent of sales of frozen seafood by value.

Home Delivery companies deliver frozen food directly to customers' homes, mainly in rural areas. This type of outlet is responsible for retailing 20 percent of all frozen seafood products by value.

Freezer centres and home delivery operators have suffered dramatically from multiple retailers' competition, and are responsible for 37 percent of all retail frozen seafood. The survivors (Picard, Maximo, Thiriet) owe their position to the strong differentiation strategy they implemented: quality, packaging, pack size, brands, etc. which tends to be specific to these retailers. For instance, Picard, the largest of all freezer centre chains, offers the widest available range including 1 000 products, of which over 150 are seafood items. Note that several companies run both activities: selling in fixed site shops and delivering at home.

Value-added products are purchased from domestic manufacturers and basic seafood (fillets, raw/cooked crustaceans, molluscs) from both local suppliers and importers. Only

a small amount is purchased directly from foreign producers. Their improving market share is due to the high quality and services they bring to customers willing to pay for innovative products , quality and delivery convenience. Frozen seafood is retailed at an average of EUR 7.67/kg, compared to EUR 13.34/kg at home delivery and EUR 14.25/kg at freezer centres.

3.2.3. Hard discounters

Hard discounters are retail shops, organized in chains that originally retailed a limited number of basic food products at the lowest price possible, due to drastic costs reductions (purchasing on the international market, no advertising). The hard discounters started operating in France in the early 1980s; the country today counts 4 531 hard discount shops where from 1 200 to 4 000 items are on display[13].

Hard discounters have gained market share in food distribution in all European countries. In France, hard discounters jumped from less than 1 percent of retail sales in 1990, to 14 percent in 2009. However, it is far from the record of Germany, the home of this type of low-cost retailing, where market share is at 44 percent[14]. In France, the share of the 4 531 points of sale[15] reaches 14 percent. Apart from the German chains, Aldi, Lidl, Norma who introduced the concept in France, most supermarket chains have developed a range of discount shops: Leader Price for Casino, Ed for Carrefour, Netto for Intermarché, and Simply market for Auchan.

With a limited variety, hard discounters sell the basics when it comes to seafood: frozen plain fish, frozen fish in sauce, prepacked precooked fish fillets, prepacked cooked shrimp, canned tuna, sardines and mackerel.

Table 9. Hard discount retailers: market shares by product type in value in 2009

All products	Fresh finfish	Frozen finfish	Delicatessen	Smoked/cured	Shellfish	Canned
14%	1%	13%	12%	11%	1%	17%

Source: Kantar for France AgriMer.

Large-scale retailers, such as the ones described above, may buy directly from foreign producers in the case of large volume, limited-risk products (canned, other processed, fresh seafood) through France/Europe-based importers. In all cases, they attempt to minimize all risks attached to the production and transport in requiring the compliance to certifications (from compliance with product specifications to British Retail Consortium (BRC) type certifications). To comply with these new requirements, the roles and responsibilities of importers have drastically evolved. They have to back-up their trading and negotiating capacities with expertise in safety and quality management.

[13] Points de vente, May 2010.
[14] Points de vente, May 2010.
[15] Linéaires, September 2009.

3.3. RESTAURANTS AND CATERERS

The catering industry includes 220 000 restaurant sites where food is served. It generates a EUR 64 billion turnover, for approximately 7 billion meals served[16]. On an average each French person spends some EUR 1 200 per annum in foods taken outside their home.

Total food purchased by restaurants is estimated at EUR 1.6 billion, out of EUR 17 billion all food included[17].

The catering segment accounts for approximately 30 percent of all seafood sold in France. This industry includes 54 000 social outlets (hospitals, schools canteens, etc.) and some 167 000 commercial outlets (from starred restaurants to fast food small outlets). This segment absorbs approximately 240 000 tonnes of seafood measured in output weight.

Restaurants buy seafood from a large range of suppliers. Wholesalers remain the main source, being responsible for 70 percent of all food purchased by restaurants, of which 55 percent are from traditional wholesalers, multifood in most cases, and 15 percent from cash and carry shops[18]; 10 percent are bought from retail shops, 15 percent directly from producers (including fishermen, fish farmers and coastal wholesalers when it comes to fish).

Sushi

The habit of eating raw fish like the Japanese has recently inspired French consumers and businesses, and dedicated outlets were opened in Paris and spread to other large-size cities in the country. While in 2007, 400 outlets were operating as sushi places (according to a panel company (Gira)), in 2010 there were 1 500 outlets. This segment absorbs at most 5 000 tonnes of a very limited range of seafood: salmon is the number one species ahead of tuna, which has lost market ground since the bluefin media focus. Other species include seabream, seabass and shrimp.

[16] Gira Food Service in FCD, 2009.
[17] Gira, 2007.
[18] Gira Food Service in FCD, 2009.

4. MARKET TRENDS AND PROSPECTS

Food consumption has evolved dramatically over the past few decades through the combination of various factors affecting the supply and demand for food. In volume terms the rise compares with the demographic one. Changes have been dramatic in terms of species and products format, as depicted in part 2.2. The demand for convenience has increased on the back of socio-economic factors and made sales of whole fish decrease dramatically to the benefit of cuts, portions and prepared items.

The future is likely to be different from the past for numerous reasons. Production will be affected by wild resource stagnation and increasing production cost in both wild and farmed sectors. The gloomy economic situation, affecting purchasing power, will temper the demand for medium-price items, for which numerous substitute products exist, not necessarily for high-profile ones. Finally, the soaring demand in emerging countries for seafood resources will divert existing trade flows. Let us analyze here which will be the important factors.

4.1. PRICE: THE NUMBER ONE CHALLENGE

The gloomy macroeconomic conditions that France is experiencing, with a shrinking proportion of budgets directed to food, combined with the fierce competition among food retailers, make price the number one purchase criterion. This is valid for consumers, intermediate buyers and importers. This criterion comes first, and once buyers consider the offered price as "right", they verify that their other requirements are fulfilled.

Seafood, especially fresh seafood, is perceived by French consumers as expensive, and somewhat more expensive than the meat equivalent, and they are quite sensitive to its variations. Over the 12-month period from January 2010 to January 2011, consumers have reacted to the price rise by buying less. When fresh cuts of finfish (fillets, steaks) prices increased by 8.6 percent, purchases declined by 6 percent. The rise of oysters' price by + 16.4 percent was accompanied by a sharp decrease in demand – 19.2 percent[19]. On average, 30 to 50 percent of supermarkets' fresh fish counters are sold at discount price during promotional campaigns.

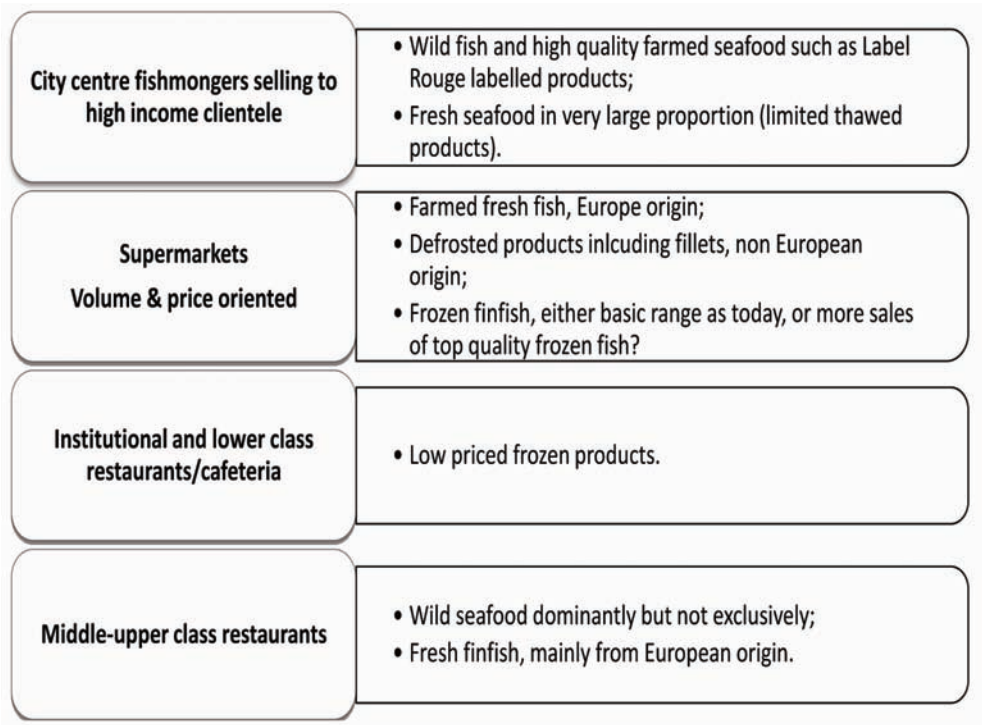
In this context, will the French market remain attractive to foreign suppliers? Probably not for all products, especially not high-profile products. As an example, in 2010[20] flows of Australian spiny lobster were diverted towards the increasing demand of the growing wealthy population in China. Consequently, the French could no longer afford Australian spiny lobster, whose import prices increased by 30 to 50 percent from 2009 to 2010.

The market is extremely diverse and consumption circumstances change. One does not eat the same in restaurants as at home; neither the same during the week as at the weekend; and for celebrations the French are tempted to buy some extra-value food. As a combination of the varied demand and structure of the supply, we may forecast that limited quantities of high-value products, mainly wild, live or fresh, will reach the

[19] FranceAgriMer, 2011
[20] Up to November that year, before the ban China decided on Australian lobster.

end-consumers through fishmongers located in the city centre and through medium- to upper-class restaurants. The bulk of farmed and wild competitive prices of seafood will be directed through supermarkets, low priced commercial restaurants and institutional caterers. Figure 18 synthesizes the future market segmentation for seafood.

Figure 18. Future segmentation of the French market for seafood



Source: Egeness, F-A., Monfort, M.C., 2011.

4.2. SAFETY: IMPORTANT REQUIREMENT

Another dramatic development is that despite improvements in sanitary conditions of production, processing and transporting, the perception of high food-borne risk is still prevalent, fuelled by media and its numerous contradictory messages.

Since 1996, after it was made public that bovine spongiform encephalopathy disease was transmissible to human beings, the successive health alerts and accidents that occurred in France received more media and public attention than in the past. In the late 1990s we saw an exceptional repetition of highly advertised food alerts. Since then, safety has become a dominant requirement when purchasing food.

4.2.1. Tools for suppliers

In the food industry, including seafood industry, the application of the Hazard Analysis and Critical Control Point-system (HACCP) principle is essential. Food safety failure is perceived as the most damaging event a retailer or chain caterer could experience, with a negative impact on reputation, loss of customers and earnings. Consequently, demanding factors perceive HACCP as no longer sufficient to guarantee a risk-free production, even if its due implementation is certified by an external audit company.

When it comes to industrial food, several major collective audit schemes, all of them created in the last 10 years, are available today. The BRC was developed by UK retailers, the International Food Standard (IFS) by German and French retailers, the Safe Quality Food (SQF) is mainly utilized in the United States and Australia, and ISO 22000, the most recent, is international. For cost-efficiency reasons, to avoid processors having to participate in more than one of these audits, their convergence is facilitated by the Global Food Safety Initiative coordinated by a group of retailers, the International Committee of Food Retail Chains (CIES). These newly created standards have been designed primarily to protect the reputation of the end-sellers who sell PLs and branded products. It is no wonder that these schemes have been developed in countries where PLs are most prevalent. French retailers and large-scale buyers require their suppliers to comply with IFS or BRC.

4.2.2. End buyers

How do buyers know that the product they buy is safe? The first and most widespread precautionary attitude is to refrain from buying “doubtful” food. The second is to buy products that carry some assurance (brand, label) or to buy from safe sources (organic food shops, local retailers, certified products in supermarkets, etc.). We have seen the resurgence of quality labels stuck onto fish such as public labels, brands and PLs.

4.2.3. The role of the media

The agro-food industry is a favourite subject of the mass media, as it attracts a high level of audience. Month after month TV programmes alert consumers of bad sanitary production practices. In 2010, fish farming and the problem of salmon lice received high and repeated media focus. Also the sardine fishery in the northwest coast of France (Normandy) was banned several months due to a dioxin contamination. The same happened to the fishery in the Rhône river. In 2011, illegal treatment of tuna with carbon monoxide to prevent its red flesh from turning brown, received attention.

The direct impact of these sporadic incidents is limited to the short term. After a dramatic programme describing the problem of salmon lice in Norwegian farms, a survey[21] with wholesalers and fishmongers evidenced that the feeble decline in demand lasted at most one week. The import statistics confirm that this particular programme did not affect the appetite of the French for salmon. Yet, could not the repeated negative messages affect some consumers? The answer lies in the success of organic food (cf. §4.7.).

[21] Monfort, M., 2010.

Safety is a prerequisite and the fundamental requirements are shared by all food traders and industrialists. Consumers and retailers alike want safety, and will not compromise on that value. It is a matter of fundamental concern, not one of competitiveness. By contrast, quality (cf. §4.3.), in its broadest definition, aims at sharpening the competitive edge, creating a differentiation and stimulating the consumers' preferences.

Table 10. Safety programmes

	Public	Private
Safety	National hygiene regulation	BRC, IFS, SQF, HACCP

4.3. QUALITY

Quality is a multivariable concept that is influenced by one or more factors, such as freshness, taste, size, fishing gear used and product physical integrity.

Even the species may be seen as a sign of quality; for example, for most French consumers sardines are usually considered low quality and seabass a high-end item.

Moreover, not all buyers along the distribution chain attach the same attention to the same attributes. The complexity makes it difficult to tackle this issue. Where should a producer concentrate his attention and efforts? Freshness and appearance, being the result of well-handled fish, are probably the dominant traits which producers can control or influence.

Does quality pay?

When mentioning quality, fishermen often ask: will my efforts be paid for? Yes, this is confirmed by several studies. The analysis of auction prices for 15 700 lots of fresh sole (*Solea vulgaris)* during January 2006 to May 2009 has evidenced it. Considering same size, same day of sale, same broad quality category[22] and same fishing gear, better-handled fish, that is fish which received the best handling on-board vessels, obtained on average a 10 to 45 percent premium[23] compared with the worst ones, depending on fish size.

Several collective schemes are available to fishermen and fish farmers to guarantee the quality to consumers of their production. Some are public, others are private. They are open to foreign suppliers in certain conditions.

4.3.1. Private fisheries programmes

The setting up of local or regional specifications and labelling schemes in the seafood industry dates back to the early 1990s, with the development of private seafood labels and the first producers' brands.

[22] Broad quality category as defined by the EU, i.e. quality A and B.
[23] Gressard, 2010.

Over the past 15 years, many countries' seafood producers, whether fishermen or fish farmers, have developed local or regional branding schemes for their products. These schemes had two broad objectives:

- To set up quality criteria and diffuse it among the industry (standards' creation and implementation);
- To make the good practices identifiable and reliable to market participants including large-scale retailers (inspection/certification).

Branding products with a clear local identity and label is appreciated by quality-conscious fishermen. Their preference goes clearly for local branding with the use of port labelling. "With a label carrying the name of their port, fishermen feel very much involved. They consider the promotion of their fish far more rewarding compared with a regional branding" explained a promoter.

Bretagne Qualité Mer (BQM) private quality seafood programme was set up in 1989 by fisheries professionals in Lorient, France's second largest fishing port. The structure has since evolved to become Normapêche in 1999. The primary idea was to develop a brand to clearly indicate to buyers where the fish was landed and processed and to convince buyers that fish from this specific area was different. Immediately, the BQM team worked with a certifier at setting quality standards and code of practices for fishermen and fish merchants.

For 20 years now, the BQM team (four people) has worked determinedly along three lines:

- Developing tools for improving quality onboard fishing vessels;
- Working at the standardization of fish, for a better market transparency and for facilitating trading operations. Fish grading, which used to vary from port to port despite the EU regulation on this matter, is a key area of market performances; and
- Marketing and promoting fish carrying the BQM label.

At retail level, buyers today recognize this quality programme and express their preference for BQM fish. BQM is so far used as a Business-to-Business tool and will soon focus on consumers, through a regional communication programme. Contact: www.bretagne-qualite-mer.com.

These seafood quality dedicated programmes and similar quality efforts run by individual initiatives focusing on freshness and physical integrity of seafood provide a regular premium to fishermen.

4.3.2. Public schemes

Label Rouge is a quality label set up by the French Ministry of Agriculture in 1960. It was designed to differentiate high-quality food products that offer a real and perceivable difference with standard products of the same sort. Taste is the key parameter measured by Label Rouge. Forty years after its introduction, this label has a very good image and widespread recognition. Today it is the most understood food quality label, recognized

by 80 percent of French consumers[24]. Since 1992, the best-known farmed seafood that carries the label is Scottish farmed salmon. In 1999, a producer of farmed seabass obtained this quality label and in 2002 several turbot farmers obtained it too. Normandy fishery for wild scallops applied for and received this label in 2002. Complying with these quality standards incurs a cost which is covered in most cases by a price premium, yet not always.

The EU has no "taste" quality label; instead, it established three official systems of food products identification:

- The PDO (protected designation of origin) covers the term used to describe foodstuffs that are produced, processed and prepared in a given geographical area using recognized expertise.
- The PGI (protected geographical indication) geographical link must occur in at least one of the stages of production, processing or preparation. Furthermore, the product can benefit from a good reputation. The regulation serves to protect geographical names of agricultural products and foodstuffs against commercial use or exploitation.
- The third system is traditional speciality guaranteed, but no seafood are involved.

The rationale behind these labellings is that products have developed a reputation associated with the place of production that makes them valued by consumers. The ownership of PDO or PGI is collective. All farmers belonging to the defined geographical area and respecting the specifications have the right to use the geographical name recognized by the appellation of origin. As of today, salmon farming companies and mussels farming enterprises have applied for and received PGI appellations.

Quality labels such as Label Rouge are regarded as reliable indicators, but seem to lose influence as a determining motivation for purchase; partly, because the label is linked to a higher price, and possibly because it is of less importance to younger people who consider that quality labels have lost their influence from 2007 to 2008 with, respectively, 58 percent compared with 67 percent, considering it a motivation for purchase[25].

4.3.3. Marketing tools

Who else better than consumers themselves can assert whether the product is good or not? This postulate has inspired a new type of quality branding, which gained success in France, including with seafood producers.

The existence of these purely marketing tools, claiming the superior quality of the product based on subjective opinions, opens the question of trust and reliability. Official labels, PLs, brands, pure marketing gimmicks? Who do consumers trust most? It has been evidenced that in the case of "hyper-choice", where consumers have to decide upon

[24] When questioned about food quality, 45 percent pools' respondents mention spontaneously Label Rouge; 80 percent through assisted questions.
[25] Crédoc, 2009.

a very large number of items[26], some will give their preference to products that their peers have tried and appreciated.

Monadia, a marketing company created in 1997, claim that the food products that carry its label "saveur de l'année" (flavour of the year) have been selected by consumers as being the "best food of its category". This selection is not based on any standard, just on the appreciation of consumers. Products are tasted by 120 people who have to give a mark from 0 to 20. All products getting a medium rate above 13 are awarded the label.

The 2011 winners are Surimi sticks Coraya, Captain Iglo breaded fish sticks, tuna sausage and salmon chorizo Armoric, smoked salmon Lartigue, Seafood pate Labeyrie, cod roe tarama Hekla, Fish rillettes Guyader, Salted cod preparation Coudène, canned mackerel Petit Navire, organic cooked shrimp Oso and organic raw frozen shrimps Oso.

All seafood that enters the European market must comply with the mandatory regulations and with standard basic product specifications required by end-sellers/importers. On the huge market for seafood sold in bulk or sold with no brand name (basic packaging: over 50 percent of the global market) little above the mandatory requirements is asked of suppliers. Just some basic commercial information is conveyed from sellers to buyers to make the business possible. Requirements grow with the degree of processing and labelling. The more processed, the higher the risk and therefore the requirements.

Table 11. Quality programmes

	Public	Private
Quality	Label Rouge, European PDO, European PGI	Fishing Industry Schemes (National, Regional, local), Product Specification for Private labels, Quality awards

4.4. CONVENIENCE

A convenience product is one that best overcomes consumers' constraints and meets his/her needs. Time-saving, easy-to-prepare and quick-to-cook were the first modern consumers' requirements. Today a convenience product indicates its price (on label), gives the precise number of portions (fix count) and offers tips for the preparation. In the future, packaging will play a dominant role for selling seafood while facing two challenges: offering convenience at competitive prices and being eco-friendly.

The case of fresh finfish illustrates clearly the development and where the market goes to. Since the eighties, purchases of fresh whole fish have regularly declined to the advantage of portions. In 2009, sales of cuts/portions/fillets represented over 70 percent of the total fresh fish retail sales. This long-lasting trend concerns both the retail and the catering markets. Householders as well as restaurant chefs are short of time and sometimes lack skills to cook whole fish.

[26] A storecheck carried out in France in August 2010 indicated that the range of tropical shrimp (fresh and frozen) displayed on sale comprised 59 items in Carrefour Bordeaux and 46 items at Auchan in Bordeaux.

Today, a large proportion of retailers have prepacked fresh fish cuts on offer, processed (cut, packed) in stores or at industrial units. Reported retail sales are estimated at 25 000 tonnes, or some 50/60 000 tonnes in equivalent live weight (2009 data)[27].

Table 12. The market for prepacked fresh fish in supermarkets

	2002	2004	2006	2009
Fresh fish sold in cuts (fillets/slices)	80 595	83 320	79 541	86 456
Fresh fish sold in prepacked cuts	13 260	18 298	16 713	24478
Market share of prepacked products	16%	22%	21%	28%

Source: Kantar, 2010.

The market for prepacked finfish introduced some 10 years ago is far from being mature and offers promising prospects.

How to get a time-saving, easy-to-cook, quick-to-prepare product out of live crustaceans, such as crab or lobster? The answer is to shell the cooked animal and sell the meat. The market for crustacean cooked and shell-off meat is developing.

4.5. HEALTHY FOOD

Health considerations have developed dramatically over the past few decades as a consequence of the mass dissemination of medical-related information, better education and, more recently, the use of these arguments in marketing and communication campaigns. Although the usage of these elements is strictly regulated (the benefit of omega 3 in salmon for instance), the potential health benefits of certain elements in food are increasingly emphasized. Note that this aspect of food is to the advantage of seafood in general and farmed salmon in particular. Since the late 1980s, sociologists all agree that the French, just like most wealthy European consumers, are increasingly health conscious. This tendency, nourished by most medical information sources, has favoured certain types of food (olive oil, fruits, fresh vegetables, seafood, food with low-cholesterol and low-salt content), over others (beef, butter and fat). In this respect, the benefits of seafood on health have been repeatedly disseminated since the late 1970s. More recently (2002 onwards), the country has been submerged by waves of information enthusing about omega 3, favourable to farmed salmon and other seafood. Seafood still has the image of being healthier than meat.

4.6. SUSTAINABILITY

After public institutions such as FAO highlighted the dramatic decline of fish stocks worldwide and the environmental impact of fish farming was denounced by prominent NGOs, sustainability has become an important issue in the seafood business environment.

The degradation of the environment caused by intense human activities entered the public debate at international levels in the early 1990s (Rio summit, 1992) and gained in intensity from the early 2000s. Media coverage of current and potential climatic disasters, of conflicts over natural resource shortages and call for public and private

[27] Industrialists say that these volumes are much higher, as the large quantities that have been prepacked by the supermarkets are not all taken into account in the statistics.

interventions reached a climax during 2009, but only led to a compromise at the Copenhagen Global Warming Summit.

France is often depicted as an intermediary country when it comes to sensitivity towards environmental questions, lying between the very environment conscious Nordic countries and the less concerned South European ones. Yet, questions about the consequence of human activities on global warming and the loss of biodiversity gained momentum during the presidential campaign in 2007. Charismatic journalist and TV producer Nicolas Hulot managed to get major political parties to rally behind his environmental opinions. Shortly after being elected in 2007, the current French president called for a vast public consultation on ecology, the so called "Grenelle de l'Environnement". This comprehensive participatory process was organized around six thematic workshops, one being concerned with biodiversity and natural resources. In January 2008, after months of discussion with numerous stakeholders (NGOs, industry, consumers' associations), 238 recommendations for action were made. Few have translated into concrete actions yet, but this much publicized forum contributed to raise public consciousness on environmental issues.

Growing public concern over social and ecological issues is one of the strongest trends that shaped consumption in the last decade. Consumers attach particular importance to producers' responsibility with regard to social and environmental aspects (child labour, ethical working conditions, environmental impacts). Between 1995 and 2007, the proportion of French people quoting "environmental degradation" as a major concern jumped from 6.5 to 19.5 percent. Yet, consumers have a rather vague understanding of this complex topic.

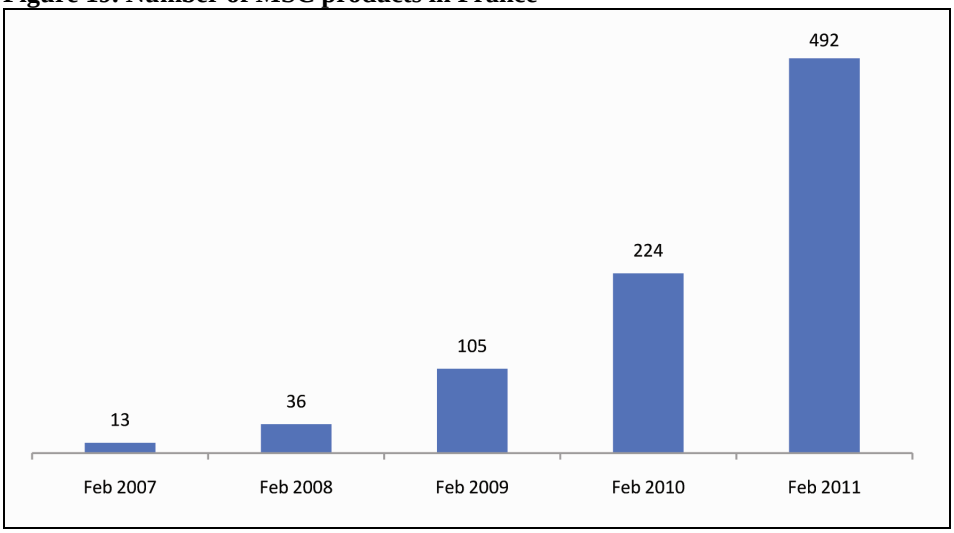
Fisheries sustainability received intense media coverage, thanks to the dramatic bluefin (*Thunnus thynnus*) mismanagement issue and the political fuss around it. This was widely publicized in the media, has had some effect on tuna consumption but in reality the trend is not catching as fast as environmentalists would like it to.

The subject of marine resource mismanagement and risk of depletion was understood by the large-scale retailers quicker than by anyone else, with the Carrefour group acting as a pioneer in launching its own ecolabel on fishery products in 2004. These large-scale corporate businesses have been dynamic – under the pressure of their shareholders – at promoting the idea of fishery sustainability. They then changed their purchasing procedures and started to display Marine Stewardship Council (MSC) certified eco-friendly products.

Since those early days with limited actions, much has been done privately. It is clear to a majority of large-sized seafood companies that the current legislation regarding the production and post-production process does not secure the sustainability of seafood available on markets and that private initiatives are to be considered. Environment-responsible policies are widespread all over large-scale operators and cover an increasing number of product lines. This procurement policy may be partial (only a few species concerned, only a few criteria applied) or global (a specific procurement policy including set of criteria covering the comprehensive selection of fish). The trend is set and will not reverse: more will be done by players to secure their purchases from guaranteed sustainable sources.

The only ecolabel visible on French retail shelves is the one by MSC. After a slow start more and more MSC products are on display on retailers' shelves and restaurants menus. In February 2011, over 490 products[28] covered the blue MSC logo.

Figure 19. Number of MSC products in France



Source: MSC.

In January 2010, three industry groups selling MSC-labelled products (Labeyrie, Findus, Chancerelle) and one large-scale retailer (Carrefour) organized a special nationwide campaign in retail shops of this chain. Its primary objective was to show consumers that by choosing MSC-labelled seafood they were making a positive difference to our world's oceans. The success was far from what was expected, as it attracted very little public attention. "We are ahead of consumers on that matter" explained one of the promoters. The campaign was replicated in January 2011.

Friends of the Sea, which is another fish sustainability label, is far less visible on retailed products. It is utilized by one sushi restaurants chain to advertise the sustainability of tuna and Australian farmed yellow-tail kingfish (*Seriola lalandi)* and mulloway (*Argyrosomus hololepidotus)* served in its outlets (www.matsuri.fr).

In 2007, FranceAgriMer commissioned a study to define which criteria would be the most relevant for a national fishery Business-to-Consumer ecolabel. After a number of meetings with fisheries stakeholders, it was agreed that the label would not be limited to environmental and quality matters, but would also include social criteria. Today, two years after the end of the national consultation process, which received much public media attention, concrete actions are still limited. The decision process is slow and according to promoters these national standards should be ready by 2012.

Beside this Business-to-Consumer ecolabel, France AgriMer has also initiated the creation of a Business-to-Business label entitled "Responsible Fisherman". This scheme is inspired from the Responsible Fishing scheme developed by the United Kingdom

[28] Still far from the 2 400 items available on the German market.

Seafish Industry Authority[29]. Fishermen who comply with a number of rules will be publicly recognized as acting 'responsibly' and this award may be used for Business-to-Business marketing. This label is not designed for communicating down to consumers but to reassure middlemen on the good practices that fishermen apply.

Table 13. Sustainability programmes

	Public	Private
Sustainability	Responsible fisherman	MSC, Friends of the Sea

In the absence of public regulations, nothing will happen if the market or its components do not request it. So far, all actions favourable to seafood sustainability have been taken under the pressure of large-scale operators who trade in a highly competitive environment and have a name to defend. For the time being, small-scale traditional operators (fishmongers, restaurants, their suppliers), who represent a large share of the market, do not feel really concerned and are far less active. They passively comply with market conditions.

Fighting IUU

In order to fight illegal, unreported and unregulated (IUU) fisheries activities, which have an undisputed impact on the environment and the economics of legal fishing activity (depletion of stock), the EU requires suppliers to prove the legal source of wild seafood. As from 1 January 2010 imports of fish and fishery products from countries outside and from within the EU are subject to new rules on IUU fishing. Imports need to be accompanied by a validated "catch certificate", which includes details of how and when the fish was caught and confirms that the fishing activity was carried out legally. This certificate ought to be established by a competent authority in the country of origin. It can be sent electronically to EU importers.

4.7. ORGANIC SEAFOOD

Organic seafood, that is seafood farmed using specific environmentally sound methods, is becoming increasingly successful. In 2009, French consumers spent EUR 3 billion on organic food, recording an outstanding 19 percent increase compared with 2008, of which organic seafood represented 1 percent of all organic food[30]. This fast growing market is still in its infancy and represents no more than 1 percent of the global seafood market.

[29] http://rfs.seafish.org/.
[30] Agence bio, 2010.

Organic food distribution

Organic food is distributed through different channels. Supermarkets have a 45 percent[30] market share of the total organic food turnover. Shops specialized in selling organic food are responsible for 38 percent of all sales and gain in visibility with some 2 800 points of sale, i.e. a 25 percent increase compared with 2009. Frozen food shops sell 5 percent of total organic food; the rest is purchased by consumers directly from producers (farmers, meat growers). The routes followed by products are similar to the ones for conventional products. Organic food is either sold directly by producers to end-sellers (supermarket, specialized shops) or to wholesalers. Few of these are 100 percent organic dedicated; most offer the whole range of food or seafood: conventional and certified products (organic, Label Rouge, Fair Trade, etc.).

A recent survey indicates that in 2009, 26 percent of French consumers bought at least one organic-certified product once a week and 34 percent never bought one, while in 2003, organic buyers were 17 percent and those who never bought organic were 46 percent[31]. Demand for environmentally friendly certified products remains low due to its high price in a period of shrinking purchasing power.

In the case of aquaculture, EU regulation 710/2009, which came into force on 30 June 2010, sets conditions for the aquatic production environment and for impacts on other species. This was a cooperative venture with the technical input coming from the fisheries side of the Commission and the procedural aspects from the agriculture side. It deals with the separation of organic and non-organic units and specifies animal welfare conditions including maximum stocking densities, a measurable indicator for welfare. For example, the maximum stocking density for salmon is set at 10 kg/m^3 in net pens in sea water and 20 kg/m^3 in freshwater. For seabass and seabream, the maximum density is 15 kg/m^3 in the sea and 4 kg/m^3 in earth ponds and lagoons. It specifies that biodiversity should be respected, and does not allow the use of induced spawning by artificial hormones. Organic feeds should be used supplemented by fish feeds derived from sustainably managed fisheries. Special provisions are made for bivalve mollusc production and for seaweed[32].

The EU organic farming logo offers consumers confidence about the origins and qualities of their food and drink, and its presence on any product ensures compliance with the EU organic farming regulation. Since July 2010 this logo is compulsory for all organic prepackaged food products sold within the EU.

[31] CSA, 2009.
[32] http://ec.europa.eu/fisheries/news_and_events/press_releases/300610/index_en.htm#3.

Table 14. Organic programmes

	Public	Private
Organic	EU organic farmed seafood scheme France farmed seafood schemes	Naturland, Soil association, Krav, Debio, etc.

It is also possible to use the logo on a voluntary basis for non-prepackaged organic products produced within the EU or any organic products imported from third countries.

Table 15. Some organic farmed seafood available in France

Salmon	Scotland, Norway, Ireland
Seabream	France, Greece
Seabass	France, Greece
Pangasius	Viet Nam
Trout	France
Shrimp	Madagascar, Mozambique, Ecuador, Thailand

When considering grown food, the issue of genetically modified products arises. Today, public regulation does not oblige manufacturers to indicate whether or not the products are genetically modified or incorporate GMO ingredients. As an answer, in 2010 Carrefour supermarket launched its own label for promoting reared food GMO free.

This private initiative exemplifies that when public regulations are not satisfactory, large-scale operators take the lead. This supermarket label may stimulate the national public authorities to make a move on more detailed and transparent information directed to consumers. This label concerns farmed seafood.

4.8. OTHERS REQUIREMENTS

4.8.1 Social standards

The debate on seafood sustainability has opened the question of the scope to be covered by any sustainability label. Being the result of economic, environment and social factors, participants in both the fishing industry and the retail sector would consider with interest any standard that would combine all aspects. This standard does not yet exist. Private programmes that include criteria on fishermen's working conditions, environmental impact of the fishing activity and product quality have been developed by French fishing companies. The details are kept secret, but the label is visible on fresh and frozen fish packages. What is socially unacceptable? Who should set the limits?

The fair trade social movement uses a market-based approach to promote the idea that producers get a fair wage for their production according to the International Labour Organization conventions. Fair Trade is defined as (based on the FINE definition in 2001):

"*Fair Trade is a trading partnership, based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers – especially in the South. Fair Trade Organizations, backed by consumers, are engaged actively in supporting producers, awareness raising and in campaigning for changes in the rules and practice of conventional international trade*[33]."

Two international Fair Trade standard setters certify Fair Trade Organizations across the world, according to ISEAL principles; the *Fairtrade Labelling Organization* (FLO) and the *World Fair Trade Organization* (WFTO) (previously the International Fair Trade Association, IFAT).

Fair trade seafood is not yet current on the French market, although the demand for this concept exists.

4.8.2. Animal welfare

Animal welfare is a very recent and still marginally accepted concept. It came first in the poultry business. The French Label Rouge producers introduced this concept in 2007 and focus on it in their communication. The debate is gaining ground in relation to the meat industry and may spread into fish farming. Due to the rising environmental awareness, this nascent concern is expected to develop. The new FAO guidelines for aquaculture certification approved in 2011 include animal welfare issues.

4.8.3 Product origin

When it comes to seafood, some origins have a better image than others. This is due to the global image of the country in people's minds, and also to the country's investment for promoting seafood. Yet, no country will overtake France and French landed seafood is preferred to all other origin in the French market. Some fishmongers have understood the motivations of their clients and display the French flag in their fish. Finally, the French fisheries organization considered launching a "French fish" label. The project is not yet finalized.

[33] COM (2009) 215 final.

5. OPPORTUNITIES FOR SUPPLIERS

Metropolitan France and its 65 million inhabitants have a strong appetite for seafood, and the French market is open to a large volume (>2 million tonnes) of diverse species and products. France does not pay the highest price, may be unduly concerned when it comes to sanitary inspections, but it nevertheless offers numerous opportunities.

5.1. DIFFERENT ROUTES TO REACH THE END-BUYER

The commercial route an exporter will choose to reach French consumers will depend on different elements. Some focus on companies, others on the products they intend to sell and their ability to integrate the different tasks to be pursued all along the value chain. The two key questions are what to do and which local partners to share the value created in a sustainable business. There is not one single answer, but consideration of the following elements may be helpful for any exporter to draw the right strategy to enter the French market.

5.1.1. Exporters' characteristics?

The company

- Size of the company;
- Position in the seafood distribution chain – producer or trader? how close to the production? how close to the market?
- Ability to provide more than just basic information;
- Ability to deal with marketing issues; and
- French language skills.

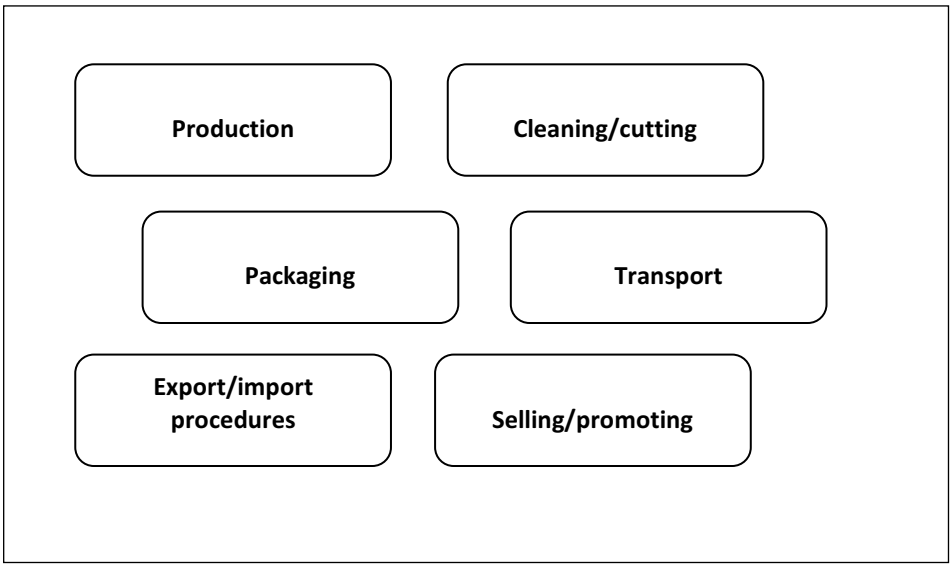
Services

- Capacity to properly cut/process/pack the product;
- Ability and experience at following and fulfilling terms of reference;
- Capacity to organize logistic up to French borders;
- Ability to cope with food clearance; and
- Ability to organize logistics (stock/transport) within France.

Products

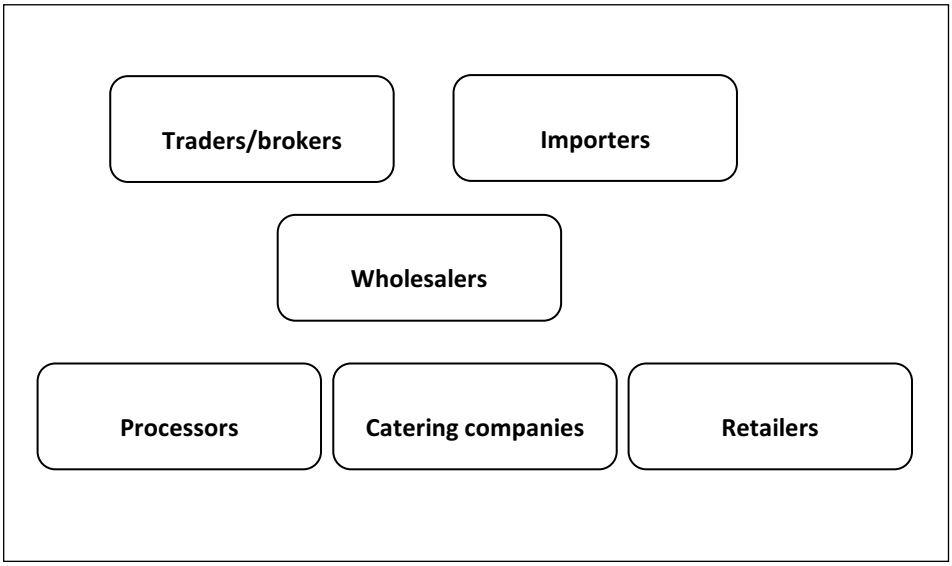
- Mass consumption item (volume, moderate price) or niche products (low volumes, high price); and
- Degree of sophistication.

Figure 20. Value chain



The more the company can do by itself the further down the value chain it can address its products and services. Yet, the further down the chain the more complex the issues and the greater the risk of failure. Externalization and partnership may prove to be a cost-effective option and getting the most experienced and talented to do the job a key to success. This should dictate the choice for business partners.

Figure 21. Business partners



5.2. PRODUCTS AND SERVICES IN DEMAND

The above description helps to explain the products that offer good market opportunities. Here follows a few examples:

Table 16. Product with potential on the French market: summary

Species/products	Demanded attribute	Suppliers' responses
All seafood	Quality	Proper handling and storing all along the chain Risk-free item Certification for superior taste such as Label Rouge
All seafood	Full traceability	Reliable information all along the chain
All seafood	Sustainability	Correct, verifiable, sound information from producer to professional buyers Certification: ecolabel, organic label, fair trade
All seafood	Convenience	Quick/easy to cook; portion size
Wild finfish	Social fairness	Partnership along the chain Certification: fair trade
Finfish, fresh, frozen	Convenience	Precise grading cuts Fixed-count portion prepacked
All farmed seafood	Environment, health, animal welfare	Certification: organic
Crustaceans shrimp, crab, lobster	Convenience	Cooked and shelled
Shellfish (bivalves, whelk, periwinkle)	Convenience	Cooked and packed

5.3. CATCHING THE PREMIUM FOR FRESH

Fresh products get a price premium, compared with frozen identical product. Yet, we have seen that the gloomy economic situation and intense competition to capture a part of consumers' budgets make end-buyers and their suppliers keen to find low-priced food products. Selling frozen products for the chilled/unfrozen segment may be a way to access market and generate value.

The growth of imported frozen sold as defrosted white fish fillets is in fact a recent phenomenon on the French market. From marginal quantities 5 years ago, it reached circa 10 000 tonnes i.e. 10 percent of the retail market for fresh whitefish. This trade line offers sustainable economic advantages to its promoters. Pure traders, who buy to resell with no further process, may be the driver for such a new trade as they will capture part of the benefit generated along the value chain.

Not only are the sources of raw material changing, today's map of the whitefish processing industry is not the same as it was a decade ago. The emergence and development of low labour cost countries as key operators in this business is remarkable. The performances of China and Poland as processors have contributed to displace production of fillets further east. Raw material producers, such as the countries bordering Lake Victoria (Kenya, Tanzania, Uganda) where Nile perch is landed, and Viet Nam, the number one producing country of pangasius, have built strong filleting industries and created competitive export flows for fresh or frozen fillets.

Supermarkets are dominant in buying criteria when it comes to fresh fish, including volumes availability and regularity, food safety being considered a prerequisite. Given that over 30 percent of all fresh finfish are sold at promotional prices and that running a nationwide campaign requires a preparation time of 2–3 months to edit the promotional material and to secure the purchase of tens or hundreds of tonnes of products, buying frozen fillets for large-scale retailers may be the solution. A campaign can thus be designed for frozen low-cost products from all over the world.[34].

5.4. ADDING VALUE THROUGH PROCESSING: SCALLOPS

The year 2009 was a record year for scallop in France, with nearly 28 000 tonnes sold (domestic production included) and total imports over EUR 210 million. The segments for both fresh shucked meat and for frozen shucked meat have expanded, boosted by the exchange rate being favourable to imported products, and consequent low prices. In 2009, the country imported 5 833 tonnes of live and fresh scallops (most in fresh shucked meat) worth EUR 73 million, compared with 4 809 tonnes worth EUR 56 million a year before, and 4 466 tonnes worth EUR 50 million in 2007.

In the segment for frozen products, again, recent performances have been absolutely outstanding, with imports developing steadily from 14 000 tonnes in 2000 to 22 000 tonnes in 2009. France buys frozen scallops from all over the world, with five dominant suppliers in 2009: Peru, USA, Argentina, Chile and Canada. *Placopecten magallanicus* from the United States is a real success. After 10 years on the market (the first shipments date back to October 2001, with 23 tonnes that year), Peru and Chile have been regular suppliers of *Argopecten purpuratus*, destined mainly for the retail market, where packs of 300 g, 400 g, 500 g of 20-30 pieces per lb or 20-40 pieces per lb are sold at EUR 14-17/kg. Argentinian scallop (*Zygochmalys patagonica)* is a popular way of using small-size meat in ready meals. The recent come back of Japan as dynamic supplier of *Pecten yessoensis* is also to be noted.

Products for ready meals typically comprise a half shell in sauce, containing between 20 to 60 percent of scallop meat, depending on brand and recipe. The processing industry making these items utilizes predominantly small-sized *Zigochlamys patagonica* from Argentine and *Chlamys nobilis* from Viet Nam. This segment is entirely supplied with made-in-France products.

The time has come for all scallop suppliers, French and non-French, to investigate new strategies not based on price, but focussing on product and market development. More

[34] Egerness, F-A, Monfort, M.C., 2010.

precise product positioning and communication with buyers could easily and efficiently be envisaged offering new opportunities.

5.5. ENGAGING IN A COHERENT MARKETING CAMPAIGN

In such a mature market with limited growth, buyers becoming more demanding and competition fierce, seafood suppliers may need or choose to differentiate their offers to attract the attention of buyers.

As an example, let us take the case of a relatively new species, meagre (*Argyrosomus regius)* which since the late 1990s is farmed in Europe. The activity started rather simultaneously in France and in Italy. Spain entered into the business in 2004, followed by Greece and Turkey[35] in 2007. Today the fish is sold by a limited number of players in niche segments (small volumes at good prices to selected market segments). This fish is not known in Europe, except in very local areas where it is landed wild. How to make a wholesaler, then a retailer and a consumer go for this unknown species, if not for the price and possible low mark-up?

A well-structured communication campaign, with the relevant choice of arguments, channels, targets, partners, etc., could be used to stimulate demand or at least to prepare the markets for the arrival of this new species. All efforts may be considered, at collective as well as private levels. Alas, so far little has been done and prices are declining.

This example illustrates that consumers as well as traders and retailers have to be convinced to give their preference to one or another product. Well-designed communication and marketing campaigns have proved to stimulate businesses.

[35] FAO, 2010.

6. CONCLUSIONS

The French demand for seafood seems insatiable, and domestic production of both wild and farmed products is limited. Domestic supply does not cover more than a quarter of the global demand. The major factors that would affect this demand include prices and possible lack of confidence in food safety/hygiene or health-related attributes of products. With these unlikely to arise in the short term, imports of seafood are not likely to decline. On the contrary, opportunities are still good for certain categories of products (convenient, tasty, price competitive) and for suppliers able to offer one or several of these requested services (safe logistics and reliable deliveries, reassurance on sustainability, traceability and ethical production conditions).

We have seen that market requirements, whether expressed by consumers or by retailers, are getting increasingly comprehensive. Yet, what if what is required does not exist? Business ethics and corporate social responsibility are today inherent to sound business strategies including among retailers. Large-scale retailers look for legal and sustainable sources (eco-labelled fish which guarantees proper management with no damaging impact on ecosystems) of safe products (originating in Food Safety and Quality Management certified companies?), produced under decent working conditions. Concurrently, products should be available in sufficient quantities all year round at competitive prices (sold fresh in ready to cook form at less than EUR 10/kg at retail). Previously cod, saithe and haddock carried such characteristics, but today supplies of these species are considerably constrained due to past overexploitation. So what if this fish does not exist anymore to satisfy the demand of retailers? Retailers will have to forge alternative partnerships in the supply channel, including with development agencies, private foundations aiming at alleviating poverty, standard developers and industry associations. Among the species that offer the potential for such development are Nile perch, Pangasius and Tilapia.

The above-mentioned criteria will strengthen with time. This opens the question of the comparative ability of the aquaculture and capture industries to meet new challenges and the economic capacity of French buyers to pay the price of these additional values, in a world where new markets with growing purchasing power emerge.

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ANNEX 1

SEAFOOD LABELLING ON RETAIL MARKETS

According to EU legislation, food, including seafood, must carry labelling with the name under which the product is sold, the list of ingredients (in descending order of weight), net quantity of prepacked food stuff in metric units, date of minimum durability (except for fresh produce), any special storage conditions or conditions of use (except for fresh produce), name of manufacturer, packer or EU seller (except for non-packed fresh produce).

In addition, regulation 2065/2201 lays down specific labelling requirements for fishery and aquaculture products. All products for retail sale in the EU must be properly labelled providing the following information:

- **The commercial name** of the species;
- **The production method** "caught in …" for wild fish; "farmed" or "cultivated" for aquaculture products;
- **The catch area** must be given: for products caught at sea a reference to areas (FAO zones); for products caught in freshwater a reference to the country of origin; for farmed products, a reference to the country in which the product undergoes the final development stage.

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