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SUMMARY - A brief survey of the sea-food markets for the northern Mediterranean countries is presented, i.e. for Cyprus, France, Gréece, Italy, Portugal, Spain and Turkey. Then a comparative study between the markets belonging to the European Union is completed. Three of these countries (France, Italy and Spain) are characterized by a huge deficit in their external sea-products trade. Greece is almost balanced, but Portugal has been importing increasingly more over the last few years. About 45% of the imports come from the European Union. After many years of increasing value, we can now see a stabilization in the fish price. Since 1977, the consumption of fresh products has been receding in favour of frozen and processed products. Cultured salmon and shrimp which were less popular a few years ago are now two of the most important sea food items, especially in France, which indicates that these markets are eager to consume products from aquaculture. The distribution channels are still traditional for fresh fish in these countries except in France where supermarkets account for more than 50% of retail sales. The difficulty of gathering homogeneous and reliable information reveals the importance of implementing a network devoted to this data.

Key-words: Sea-products, International trade, Consumpttion, Economics

***RESUME -** "Les marchés des produits de la mer dans les pays du Nord de la Méditerranée". Après une rapide description des marchés des produits de la mer des pays du nord de la Méditerranée, c'est à dire Chypre, Espagne, France, Grèce, Italie, Portugal et Turquie, ce travail présente une étude comparative des marchés appartenant à l'Union Européenne. Trois de ces pays (Espagne, Italie et France) sont caractérisés par un énorme déficit de la balance du commerce extérieur des produits de la mer. La Grèce est à peu près équilibrée mais le Portugal importe de plus en plus depuis quelques années. A peu près 45% des importations viennent de l'Union Européenne. Après des années de croissance en valeur, on peut désormais observer une stabilisation du prix du poisson. Depuis 1977, la part des produits frais dans la consommation se réduit au profit des produits congelés et transformés. Les saumons et les crevettes d'élevage qui avaient une position marginale il y a quelques années sont devenus des produits de grande consommation, surtout en France, ce qui montre les potentialités de ces marchés pour les produits d'élevage. Les circuits de distribution sont restés traditionnels pour le poisson frais dans ces pays sauf en France où les grandes surfaces assurent désormais plus de 50% des ventes. La difficulté pour obtenir des données homogènes et fiables révèle la nécessité de mettre en place un réseau consacré à ce genre d'informations.*

***Mots clés :** Produits de la mer, Commerce extérieur, Consommation, Economie*

INTRODUCTION

The purpose of this study is to present, in the first place, the major characteristics of the supply and demand of sea-products in the countries of the northern Mediterranean area: Cyprus, France, Greece, Italy, Portugal, Spain and Turkey. In second place, a comparative analysis about the apparent consumption, the external trade, the market structure and the distribution channels will be carried out for the five countries belonging to the European Union. All these data must be considered carefully given the lack of reliability of landings and external trade statistics, especially since the implementation of the Single Market. Moreover, the difficulty to get homogeneous data for all these countries has led to choose a limited number of criteria and consequently to reduce the scope of the analysis.

THE MAIN CHARACTERISTICS OF THE NORTHERN MEDITERRANEAN SEAFOOD MARKETS

Cyprus

In1993, the total domestic fisheries including aquaculture yielded about 3 000 tons, which met only about 40% of the total fish consumption. Therefore, about 5 000 tons of fish and fish products had to be imported. With an amount of about 300 tons, aquaculture products (sea-bass, sea-bream and trout) represent 20% of the value of Cyprus fisheries. Marine aquaculture is being developed because it is acknowledged as the only potential source on the inland of large quantities of fish of high quality. The consumption per capita is rather stable since 1990, being 13 kg in 1994. It is estimated than tourism consumed about 10% of the above quantity since more than two million of tourist have been to Cyprus in 1994 while the population does not exceed 600 000 *inhabitants (Stephanou, 1995).*

France

After having slightly increased over the last decade, catches have remained steady for the last four years around 600 000 tons. Fishing activity concerns mainly tuna (28%) and in a less extent saithe, hake, anchovy, sardine and cod. 70% of the fleet is devoted to coastal fishing but industrial fishing vessels account for 22% of the overall fishing power. Aquaculture reaches 300 000 tons a year, mostly oysters, mussels and fresh water trouts.

Consumption has constantly increased over the last ten years to reach 18 kg per capita and per year (net weight). However a decrease in value has been observed over the last four years, due to the general decline of sea-products prices since 1991. In addition, there are a lot of disparities in the evolution of each segment. Purchases of fresh fish have diminished to the benefit of frozen and smoked fish. This trend can be explained by the evolution of the consumption habits (the market share of frozen fish is increasing as households acquire freezers and the employment of women generalises) and of the distribution channels (development of supermarkets, freezer centres and home services). The growth of the frozen segment is essentially due to the increase in the consumption of ready meals.

Greece

Greek fisheries are concentrated in the Mediterranean sea and provide about 150 000 tons, of which the two thirds come from high seas and one third from coastal activity. However, most of the 21 000 vessels identified in 1991 are small units (OCDE, 1993). Fisheries capacities should be lessened as a consequence of the Common Fisheries Policy. Main species are sardine and anchovy. Aquaculture, which is increasing rapidly, has reached 30 000 tons in 1993 thanks to sea-bass, sea-bream and mussels (Zanou, 1994). Domestic landings are not sufficient to satisfy an increasing demand for sea-products. Therefore, it is necessary to import about 55 000 tons of sea-products per year. Net consumption of sea-products is estimated at 18 kg per capita and per year.

Italy

After a period of recession, due to destructive fishing techniques, an inadequate control of resources and an increasing pollution of the sea, catches seem to be stabilised around 500 000 tons a year. Fishing remains a small scale activity and concerns the following species : tuna, anchovy, sardine. Aquaculture reaches 180 000 tons a year, mostly mussels, trouts and Manila clams.

Consumption of sea-products in Italy has increased over the last decade (from 12 kg in 1977 to 18 kg per capita and per year in 1993). However each segment has followed different trends. Consumption of fresh sea-products (70% of the sea-products market) tends to diminish. On the contrary, consumption of frozen products and, in a lesser extent, of cans tends to increase (CFCE, 1995). The increase in prices has been slowing down since 1992 due to the economic recession and the appearance, in 1994, of the cholera disease in the Bari area which has considerably penalised the fresh market.

The increase in consumption is particularly important in the North of the country to the benefit of the consumption away from home and of noble species. There are a lot of disparities in the consumption habits from one region to another. The South is traditionally characterised by a high consumption of blue fish whereas in the North households consume a lot of white fish away from home. More than one thousand wholesalers are registered of which twenty or so have an international size. The share of mass marketing in the distribution remains very low. Most of the distribution is done by specialised retailers of which half of them are working in open air markets.

Portugal

Since Portugal became a member of the European Community in 1986, its fleet has been reduced by 20% and catches by 30%. The industrial fishing fleet has been affected most. Landings have been following a decreasing trend over the last decade (from 400 000 tons in 1986 to 270 000 tons in 1993). Catches of sardine, horse mackerel and pout are the most important ones. Fresh sardine is one of the most consumed species in Portugal. The frozen sea-products segment is dominated by hake. Dried cod or bacalao is widely consumed in Portugal as it stands for the national dish. Most of it is imported due to the decline of the industrial Portuguese fishing fleet. Its share in the total consumption of sea-products averages 45% (CFCE, 1994). Portugal has the highest sea-products consumption level in the Mediterranean area with 40 kg per capita and per year. The trade balance deficit has worsened within the last three years.

The Portuguese system of fish distribution consists of retailers who operate in halls and in the local markets. The share of the modern distribution outlets (hypermarkets and supermarkets) in the distribution of fish is not very important yet despite their rapid expansion. Consumption prices seem to follow a steady trend (CFCE, 1994).

Spain

The Spanish market is widely supplied by the national production (1 100 000 tons from fisheries and 200 000 tons from aquaculture in 1993). After having seriously decreased during the 80s, landings of the Spanish fleet have reached a certain level of stability. However, despite its high self-supplying capacity, Spain has been importing an increasing amount of sea-products over the last four years (+38%) and especially fish (+47%) because of its limited access to the resources and the effects of the quotas policy.

The trade balance of Spain, for sea-products, is characterised by a huge structural deficit which has been increasing since 1986 due to the dramatic expansion of imports and the stabilisation of exports. This deficit amounts to 2 billion dollars in 1993. The major species imported by Spain are hake and salmon. France is the major supplier of the Spanish market providing 12% of the total Spanish imports in 1993 (CFCE, 1994).

The Spanish market is traditionally characterised by a high consumption of sea-products and the level of consumption has constantly increased over the last decade to represent approximately 32 kg per person in 1993. Out of the total purchases of seafood, 60% was for fresh sea-products in 1992. The canned sea-products segment has slightly increased over the last five years (+26% between 1988 and 1993) due to the growth in the consumption of canned tuna. Finally, the frozen sea-products segment has reached a level of stability over the last five years amounting 400 000 tons in 1993. Spain production provides the 3/4 of its own market which is dominated by hake, cephalopods and shrimps.

As far as the distribution channels are concerned, traditional fishmongers still dominate the market for fresh fish (80% in 1993) despite the recent development of supermarkets and hypermarkets.

Turkey

A long sea-coast and numerous rivers and lakes give to Turkey great possibilities in the field of fisheries and aquaculture. The government has supported the modernisation and the increase of the production through different incentive policies, but stock management has been poorly undertaken and many stocks are now over-exploited. Black-Sea fisheries account for 80% of the landings which are estimated at more than 550 000 tons in 1993, of which 10 000 tons come from aquaculture, mainly trouts, sea-bass and sea-bream (Lacroix, 1994). The increase has been particularly important between 1977 (150 000 tons) and 1988 (700 000 tons), but the production is now fluctuating because of variable catches of anchovies. With a population of 60 millions inhabitants, the apparent consumption is about 10 kg per capita and per year since both imports and exports are very low. Nevertheless, according to the FAO estimates, the net average sea-food consumption per capita represents only 6 kg per year between 1988 and 1990, since about 25% of the landings are aimed to non-food uses (fish meals).

COMPARATIVE ANALYSIS OF DIFFERENT MARKETS OF THE EUROPEAN UNION

Analysis of the apparent consumption

The apparent consumption is a measure of the total supply of fish products, adding fisheries, aquaculture and imports, minus the exports. All landings are taken into account, even if they are for non-food uses (for fish-meals or oil for instance). The share of the landings aimed at non-food uses is insignificant, except for Spain where it can reach 30%.

According to this criteria, Spain is the most important market of this area (1 930 000 tons) just ahead of France (1 300 000 tons) and Italy (1 200 000 tons) and far ahead from Portugal (475 000 tons) and Greece (230 000 tons). In terms of apparent consumption per capita, Spain and Portugal appear to be the major markets (49 kg/head and 48 kg/head respectively) far ahead from France (22 kg/head), Italy (21 kg/head) and Greece (20 kg/head) (Table 1).

Table 1. Apparent consumption of sea-products (food and non-food uses) in 1993

	Spain	France	Italy	Portugal	Greece
(tons)					
fisheries	1 090 000	615 000	420 000	270 000	143 000
aquaculture	200 000	300 000	180 000	5 000	30 000
imports	993 000	700 000	700 000	274 000	54 000
exports	-353 000	-351 000	-100 000	-74 000	-27 000
total	**1 930 000**	**1 264 000**	**1 200 000**	**475 000**	**200 000**
population (millions)	39	58	58	10	10
per capita and per year (kg)	49	22	21	48	20

source : FAO, CFCE, IFREMER, Greek Ministry of Agriculture, L'état du monde

Market coverage by national production is very variable among these countries, but never stands below 50% (50% in Italy, 58% in Portugal, 67% in Spain, 73% in France and 86% in Greece). The share of aquaculture in the national supply is more important in the three countries which have a traditional and important bivalve culture (France 33%, Italy 30%, Spain 20%) than in others (Greece 15% and Portugal 2%). However, the recent increase in aquaculture production in Greece is quite impressive (especially sea-bass and sea-bream).

In terms of total available quantity, a variable increase in the apparent consumption has been observed since 1977 (year of the implementation of the EEZ) in the different countries of the area. The increase has been much lower in France (10%) than in Spain and Portugal (around 33%) and especially than in Italy and Greece (almost 50%). This growth of the apparent consumption is essentially due to the rise of imports and to the development of aquaculture (Table 2).

Table 2. Apparent consumption of sea-products (food and non-food uses) in 1977

	Spain	France	Italy	Portugal	Greece
(tons)					
fisheries	1 299 000	568 000	500 000	310 000	104 000
aquaculture	90 000	175 000	35 000	500	2 500
imports	128 000	443 000	321 000	105 000	27 000
exports	-190 000	-122 000	-64 000	-50 000	-7 000
total	**1 327 000**	**1 064 000**	**792 000**	**365 500**	**126 500**
population (millions)	36	53	56	9	9
per capita and per year (kg)	36	20	14	41	14

source : FAO, CFCE, IFREMER, L'état du monde

Analysis of the trade balance

Three of the countries of the area (France, Italy and Spain) are characterised by a huge deficit of their trade balance around 2 billion dollars (meals and oils excluded). The value of the deficit has been reduced since 1992 due to the sea-products price decrease (Table 3).

Table 3. Sea-products external trade balance (meals and oils excluded)

	Spain	France	Italy	Portugal	Greece
(1000 US$)					
1990	-1 617 147	-1 877 840	-2 219 562	-326 091	-107 138
1991	-1 975 654	-2 000 444	-2 440 600	-470 577	-86 969
1992	-2 185 503	-1 979 210	-2 384 915	-477 402	-71 859
1993	-1 816 049	-1 698 399	-1 869 574	-417 297	-30 892

source : FAO

In terms of quantity, the Spanish and Italian deficits are twice as high as the French one. However, the value of the deficit is equivalent for the three countries which indicates the high value of the French imports. The recent reduction of the Greek external trade deficit is due to increasing exports of farmed fish to Italy.

Despite their recent increase, imports of sea-products are not particularly important among the imports of food-products, except in Spain, and play a fortiori a very little role in the total imports of these countries (Table 4).

Table 4. Relative importance of sea-products imports (1993)

	Spain	France	Italy	Portugal	Greece
within food-products imports	20%	11%	7%		4%
within total imports	3%	1%	1%	2%	1%

source : L'état du monde

Analysis of the imports by category of products and by species

In all countries imports of fresh and frozen fish represent around 50% of the total imported quantities of sea-products (Table 5).

Table 5. Sea-products imports by category (1993)

(tons)	Spain	France	Italy	Portugal	Greece
fresh and frozen fish	536 416	380 322	274 552	132 000	24 100
dried, salted and smoked fish	43 819	15 906	36 756	74 406	6 706
crustaceans and molluscs	368 236	161 920	182 081	34 899	14 038
preserved sea-food	44 368	162 619	80 994	6 541	9 623
total	**992 839**	**720 767**	**574 383**	**247 846**	**54 467**

source : FAO

France is characterised by a large amount of imported preserved products which partly explains the high value of the French imports. Spain is characterised by the importance of crustaceans and molluscs in its total imports of sea-products. In Portugal, dried fish accounts for 30% of total imports (bacalao).

No data concerning the share of fresh fish against frozen fish are available at the present time in the FAO statistics. However, national surveys show that 50% of the imported fish is fresh fish in France (FIOM, 1994), while only 30% in Spain (CFCE, 1994) and 25% in Italy (CFCE, 1995) The importance of fresh fish may also explain the higher value of French imports.

Seven major species represent about the half of the French and Italian imports of whole fresh products. Among them, farmed products account for about 40% of these imports. The main aquacultural products imported by these northern Mediterranean markets are salmon and mussels for France, mussels, sea-bass and sea-bream for Italy. However, Italian imports of sea-bass and sea-bream, which are estimated at 15 000 tons in 1993, are not taken into account in official statistics (Table 6). Farmed products represent only 11% of the Spanish imports of whole fresh products. Hake is the major species of fresh fish imported by Spain (around 15% of fresh sea-products).

Table 6. Market share of the main imported species in 1993 (whole fresh product)

	Spain	France	Italy
(tons)			
salmon	17 192	52 184	8 300
sea-bass and sea-bream	500	1 000	15 000
oyster	2 560	2 711	3 879
mussel	3 084	23 233	30 898
sole	6 970	5 053	5 711
cod	3 765	23 000	1 533
hake	31 348	1 768	1 419
others	144 581	111 051	83 260
total	***210 000***	***220 000***	***150 000***

source : FIOM, CFCE, IFREMER

Analysis of the geographical origin of imports

More than 40% of the French, Italian and Portuguese imports are provided by western European countries (Table 7).

Table 7. Origin of the sea-products imports in value (1993)

country of origin	Spain	France	Italy	Portugal	Greece
Italy	4%	-	-	-	7%
Greece	-	-	7%	-	-
Spain	-	2%	11%	27%	4%
Portugal	-	-	-	-	3%
France	12%	-	11%	-	-
Netherlands	4%	6%	14%	-	7%
Denmark	5%	8%	11%	-	6%
United-Kingdom	9%	16%	2%	-	-
Norway	-	14%	-	16%	8%
Others	66%	54%	44%	57%	65%

source : CFCE, FIOM, IFREMER, European Commission

The major suppliers of France are the northern European countries (Netherlands, United-Kingdom, Denmark, Norway) while the southern European countries (Greece, Spain France) are the major suppliers of Italy. The two major suppliers of Portugal are Spain and Norway (bacalao).

Spain and Greece rely more on non-European countries for their imports than on European countries. In particular, Latin American countries are the major suppliers of Spain (shrimps and molluscs). However, France remains the main supplier of Spain, especially for hake.

Analysis of the demand and of the distribution channels

On the demand side, the market assessment takes into account the real consumption of sea-products by the households and by the catering system. At this level, the consumption is expressed in net weight. In comparison with the apparent consumption which has been presented above, the differences come from the exclusion of the sea-products which are not used for human food and from the loss of weight due to processing along the distribution channel after landing or import.

Therefore, because of its important fish meal and oil production, the net consumption of sea-products per capita and per year in Spain is much lower than its apparent consumption (32 kg against 49 kg in 1993). Portugal has by far the highest sea-product consumption per capita and per year with 40 kg in 1993. While the French apparent consumption is above the Greek and the Italian ones, the French net consumption is the same as the Greek and the Italian ones, because of the importance of ready meals (Table 8).

Table 8. Consumption by category of sea-products (1993)

	Spain	France	Italy	Portugal	Greece
(tons)					
fresh products	760 000	470 000	732 000	160 000	130 000
frozen products	350 000	240 000	58 000	70 000	40 000
preserved, salted, dried, smoked	125 000	300 000	250 000	195 000	10 000
total	**1 235 000**	**1 010 000**	**1 040 000**	**425 000**	**180 000**
population (millions)	39	58	58	10	10
per capita and per year (kg)	32	18	18	43	18

source : CFCE, FIOM, European Commission (1992 data for Spain)

The market share of fresh products is over 60% in Italy, Greece and Spain while it is less than 45% in France and Portugal. On the contrary, the share of frozen products is over 20% in France, Spain and Greece, but is smaller in Portugal and particularly weak in Italy. In addition, consumption of preserved, salted, dried and smoked food is very low in Greece and Spain whereas it reaches 50% in Portugal (bacalao).

The market share of fresh products has been considerably reduced since 1977 in France, Spain and Portugal to the benefit of frozen products while it has remained steady in Italy and Greece (Table 9).

The evolution of the market share of processed sea-products is very different among these countries since it has increased in France (very fast expansion of smoked salmon consumption due to lower price) and in Portugal, while it has been steady in Spain and Italy and has receded in Greece. In that country, there has been apparently a transfer from preserved to frozen products.

Table 9. Consumption by category of sea-products (1977)

	Spain	France	Italy	Portugal	Greece
(kg per capita and per year)					
fresh products	23,8	11,9	8,2	20,1	8
frozen products	1,3	2,3	0,5	0,3	1,6
preserved, salted, dried, smoked	3,3	3,2	3,4	12,6	1,6
total	**28**	**17**	**12**	**33**	**11**

source : CFCE, IFREMER

According to available data, the total sea-products consumption per capita and per year has been increasing by 50% in Greece and Italy, 30% in Portugal, 11% in Spain and only 1% in France since 1977 .

Analysis of the distribution channels

Consumption away from home is much more important in Italy (41%) than in France (25%), Greece (23%) and Spain (14%). Nevertheless, these figures are just estimations which should be validated by enquiries and consumer panels turned on both households, restaurants and other caterers. The share of household food expenses devoted to sea-products is 19% in Portugal, 12% in Spain, 6% in Italy and 5% in France.

As far as household consumption is concerned, traditional outlets dominate the fresh fish distribution in Greece (95%), Portugal (90%), Italy and Spain (85%) but represent less than 50% in France. The importance of the role of the supermarkets in the fish distribution has been a major event for more than ten years in France, and is now becoming noticeable in other countries. In France and in Italy, the expansion of the supermarkets is done at the expense of fishmongers while the market share of the open-air markets is steady.

CONCLUSION

After this study, it turns out that a typology can hardly be drawn out due to the great disparities in the seafood markets characteristics of these countries. This result has to be connected to the disparities in European food consumption habits. Food consumption is deeply related to national cultures which characterise the behaviours on the long term and may act as a brake upon the adoption of new products (D'Hauteville, 1995).

The major factors of differentiation between the countries are the level of consumption per capita, the local favourite species, the geographical origin of imports (from northern Europe, southern Europe or outside Europe), the importance of the away from home consumption and the market share of the supermarkets in the distribution.The only major common feature among the northern Mediterranean countries is the importance of fresh consumption, although it tends to diminish in most of these countries.

Wherever the consumption has been increasing, it is due to imports or to bigger aquaculture supply. In particular, Italy, France and Spain have in common a huge deficit of their trade balance and a very strong consumption of farmed products. The development of external trade of sea-products is a major trend and sea-products represented in 1993 almost 14% of the total world-wide (internal European Union trade not included) food products exchanges in value, against 9% in 1983. Fish along with fruit and poultry are the only products of which international trade is increasing faster than production (Daviron, 1995).

The market penetration of aquaculture products in the different countries is not the same from a qualitative viewpoint. One common feature is that fresh mussels are widely consumed in Italy, France and Spain. But French consumers have adopted farmed salmon because of its low price and of the wide range of products which are proposed, from whole fresh fish to smoked fish, going through fillets, slices and other value added presentations (Paquotte, 1995). On the contrary, market for farmed fish in Italy has been till now focused on small fresh fish at a high price, i.e. sea-bass and sea-bream.

In order to have a better knowledge of the potentialities offered by these markets to aquaculture, two types of data would be particularly useful. On the one hand, we need quantitative data on the market trends referring to the types of products (fresh, frozen, processed, whole fish, fillets, slices ...), the level of price and the evolution of the distribution channels. On the other hand, there is a lack of qualitative data about the way consumers consider fish farming, about their concern of sanitary aspects, environment protection and animal welfare and about the evolution of the consumption habits.

The difficulty of gathering homogeneous and reliable information reveals the importance of implementing a network devoted to these data. In this aim, a link between SIPAM and SELAM should enable to have a price survey of the Mediterranean aquaculture products and to have information on the evolution of the characteristics of the markets, so that aquaculture can fit the demand.

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