

## Aspects of the Italian and Adriatic fish market

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### Abstract

The objective of this study is to describe the main features of the Italian fish market: production, consumption trends, dynamics of sale prices, import and export structure, fish product trade in the Adriatic basin, in order to show the major trends of the sector.

### 1. Introduction

The Italian fishery sector<sup>1</sup>'s contribution to the national economy is definitely modest, both in terms of income and employment opportunities. The fishery sector also gives a similarly modest contribution to the macro-sector it belongs to, i.e. agriculture, silviculture and fisheries<sup>2</sup>, whose progressive decline owing to the industrialisation process of the economic system is well known. Yet if fisheries is observed and studied with reference to specific and well-defined local realities, it clearly emerges that it plays a major role, both in terms of wealth creation and employment.

National data show that in the year 2000 fisheries made up only 0.09% of the entire national economic system's added value, and the figure is not any better when analysing the Marche Region, where the added value brought about by the fish sector reaches just 0.22% of the total.

Similar observations can be made for employment in the sector. Although the productive processes used in fishing activities continue to adopt highly labour-intensive techniques, the total number of persons employed in the fisheries sector in 1991, i.e. in the last year in which the Italian National Institute for Statistics ISTAT registered data on employment in the fisheries sector, was just 0.2% of the total number employed in Italy.

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<sup>1</sup> The fisheries sector is represented by fishing vessels, which carry out a professional fishing activity aimed at the achievement of a profit. From this respect, the fishing sector is to be distinguished from the heterogeneous system of operators – producers of fishing equipment, shipyards, retailers and wholesalers, operators of the processing and conservation industry, etc. –, who link their activity to the fisheries sector.

<sup>2</sup> From an institutional, political and administrative point of view, fisheries and aquaculture in several countries of the world are among the responsibilities of the Ministries of Agriculture or Agricultural Policies. Research, too, is to a large extent carried out by academic and non-academic technical and scientific institutions, which operate in the field of agriculture and animal husbandry. Moreover, from a conceptual, theoretical and applied point of view the management of renewable natural resources has been compared to that of woods and forest ecosystems from many perspectives; the same applies with much more evidence to aquaculture and water culture, which have been generally compared to agriculture.

As for data referring to added value, regional figures on employment are also higher than the national ones. In spite of the employment increase in the fisheries sector out of the total corresponding employment figure for the region, the number of persons employed in the sector is still only 0.5% of the total.

Fisheries' marginal role risks getting further worse because of the difficulties currently faced by the sector.

Besides the natural constraints that the economic activity of fisheries has to face renewable natural resources and the need for their rational management – that inevitably limit the range of production technical possibilities and the series of decision-making possibilities in order to maximise the company's income, other factors also need to be considered: the ill-functioning of the trade and distribution system, the great imbalance of trade and the trend in sales prices are all factors that even worsen the already difficult conditions faced by the sector in the last few years.

Hence the importance of the study of market issues in the analysis of the fish sector. Such a study should contribute on the one hand to highlight the causes of the above-mentioned difficulties better and, on the other hand, to identify some possible solutions to the sector's problems.

Unfortunately, the analysis is made increasingly difficult by the scarce data available, as well as by the sometimes rather remarkable differences between data themselves, depending on the statistical sources used.

After some brief theoretical considerations on the main features of fish markets in section two, section three will outline the dynamics of fish production. The value of production assumes the qualitative and quantitative knowledge of the different fish species making up the productive mix, i.e. the topic of section three, but also of the prices of the commercialised products. These topics in particular are discussed in section four. Section five will deal with consumption. Deviations between supply and demand, which should indicate the intensity of foreign trade, shall be dealt with in section six. The Italian market represents the main and sometimes the only existing outlet for the fish production of Adriatic coastal countries; the trade of fish products coming from the Adriatic basin is particularly important and shall be thus dealt with in section seven.

## **2. Competition on fish markets**

The fish market, exactly like the agricultural one, is extremely complex. The market is not only defined as the place where supply and demand meet, but, as has often been the case recently, as a market or marketing system, i.e. as a whole series of relations between producers/suppliers and consumers/users that include all services, flows and exchanges in-between. The capacity of the price system to direct market operators – or, in other words, the capacity of producers to adequately respond to the signals coming from the market – largely depends on the effectiveness of the system itself.

In a mercantile economy individuals do not operate in isolation, but rather they tend to develop forms of interdependence, i.e. they must take other individuals' behaviour into adequate account. When individuals are given the possibility to leave the choices by other

subjects out of consideration in their decision-making, a particular market form known as perfect competition is realized<sup>3</sup>. On markets with perfect competition the price system determines, at least theoretically, the best conditions for the positioning of resources and provide for the best mechanisms for income formation. In the fishery sector such market forms are typical of the phase of fresh fish production, characterized by a large number of operators applying to fish markets, as well as by single suppliers looking for demand outside the official mercantile structures.

One of the most typical features of fresh fish markets is the possibility for market prices to fluctuate, sometimes sharply, thereby reaching values that are distant from the long-term tendency price. This is to be attributed to constraints of biological, seasonal, etc., nature, which characterize fisheries as a productive activity. Such constraints occur as contingent and occasional facts, which influence market prices in the short term and introduce uncertainties as for the entity of supply, and thus create a big gap between market prices and tendency prices in the long run.

It should be noted here that the uncertainties typical of the fish market are in fact typical of all markets where commodities are exchanged, because of environmental, economic and biological uncertainty factors (Lem, 1999; Hannesson, 1998).

In its various segments the fishery sector shows forms of imperfect markets, which are largely different from the system of perfect competition. In such market forms each individual's behaviour has an immediate impact on the range of actions of other individuals and, as a consequence, each individual's actions depend in the end on the actions of the others<sup>4</sup>. This situation of strategic interdependence is to be found in that particular market category known as oligopoly and monopoly competition. In an oligopoly, markets are characterized by the presence of few big enterprises establishing such relations one with the other, so that none of the enterprises can make their decisions without taking the others into account. Imperfect markets where suppliers are price-makers, i.e. able to determine the sale price through qualitative and quantitative modifications of the volumes supplied, require a differentiated analysis of the price system.

Imperfect markets are especially typical of the processing and distribution phases. This market form comprises import/export companies dealing with both the trading of fresh fish and, more specifically, its first processing. Within such market forms, companies are characterized by the production of similar and yet slightly diversified fish products, so each company can count on its own particular group of customers, to whom it applies its prices within certain limits. In comparison to the system of perfect competition, the pre-requisite of market transparency and product homogeneity is missing here. Unlike the system of monopoly competition, where competition between single companies can be observed, oligopoly competition refers to a competition system between more or less organized groups of companies. In this respect cooperative societies or producers' associations can be

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<sup>3</sup> The term to refer to this concept is, in this case, structural interdependence. Individuals who cannot influence other individuals' behaviour make their decisions regardless of other subjects' behaviour. In this case, each individual behaves as if he or she were isolated.

<sup>4</sup> The term to refer to this concept is, in this case, strategic interdependence. Individuals can influence other individuals' behaviour and thus make their decisions taking other subjects' behaviour into adequate account. The study of strategic interdependence poses further problems in comparison to that of structural interdependence. A tool for analysis must therefore be developed (theory of games), aiming at conceptualising and helping the decision-maker to make his or her choices in such a context.

considered oligopolistic enterprises, which through the promotion of products that can be recognized through labels, certifications, etc., or by means of standard commercial agreements are able to increase their bargaining value and thus reach a position of price-makers (Messori, 1992; Saccomandi, 1999).

Finally, it can be observed that while the commercialisation of processed fish products shows problems that are common to the entire food sector, i.e. excessive supply fragmentation, fresh fish distribution also faces problems that are intrinsic to the products themselves: the perishable nature of fish and the strong species differentiation, for example, require different quantities and size and thus deeply influence the commercialisation of fish products in Italy.

Producers' associations are very poorly represented at the initial stage of the commercial process. Hence producers are forced to place their supply on the fish markets either individually or by means of private agreements with selling agents and wholesalers, who play a fundamental role in order to collect and distribute their production in consumption centres. This reality, together with that of import groups (very few in the case of fresh fish), is the only example of supply polarization. Moreover, wholesale fish markets are not so inclined to guarantee homogeneous criteria of price formation and the habit can be observed to sell outside the market. Against this background wholesalers have acquired a bargaining power, which allows them to have a strong influence on the process of price formation. Particularly owing to the limited information available, products prices are set by the meeting of supply and demand in the single markets, irrespective of the quantities exchanged and the prices applied in other market structures. In this respect, the markets' operational characteristics and the bargaining relations between operators play a fundamental role in setting the sale price.

### **3. Production according to various statistical sources**

Data by the Italian National Institute for Statistics ISTAT give the possibility to carry out an historical analysis of the sector's productions from 1951 to 2000. In the period examined the volume of fishery production registered an increasing trend, though with different intensity depending on the decades considered.

It should be observed that in the decade between 1960 and 1970 a 44% increase in the number of motor fishing vessels, a 95% rise in the tonnage used in the sector as a whole, and a growth of over 120% in HP were registered, whereas production increased by 31%.

This means that the strengthening of productive structures and the capital increase were not counterbalanced by a significant growth in productivity, probably because of the approaching of the constraint represented by resource availability. The specific nature of renewable natural resources, which are the object of fisheries as an economic activity, suggests that resource exploitation can, in the best hypothesis possible, be equal to the rate of reproduction capacity of the same resources, thereby making any investment implying the overcoming of such a limit useless and unproductive. In most recent years these issues have been summarized by the concept of sustainable fisheries<sup>5</sup>.

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<sup>5</sup> The task of a sustainable fishing activity cannot be limited, as often advocated in literature, to the respect for the equal value to be attributed to resource exploitation and resource reproduction capability. The task of sustainable production – and thus of sustainable fisheries – shall necessarily have to be the self-equipment in order to produce the maximum satisfaction possible in terms of food needs, bearing in mind the necessary constraint of a balance between energy and environment, where the flows of consumption for resources used in

Data on national production show that production expansion has not been steady. The entire period can in fact be divided into two distinct phases: a first phase of steady growth, ending around the middle of the 1980s, and a following phase of a decline in production, during which the previously reached productive levels were gradually eroded, till they reached the levels of the 1950s.

In the period between the mid-1960s and the mid-1980s national production was constantly around values over 300,000 tons and reached its peak in 1985 with almost 400,000 tons. From 1985 onwards an inversion of the trend in production expansion was registered; a decreasing trend started, until such levels were reached in the year 2000, that were close to the levels of 1951.

The fall in national production<sup>6</sup> seems to be due in particular to a reduction in small pelagic species (-30%) and in demersal fish (-57%). The category of tuna fish has experienced a different trend, registering a steady reduction until the end of the 1980s and a subsequent rise, also with surprising annual increases, in the 1990s.

The productive trend for molluscs has been steadily increasing, becoming two and a half times greater in the period examined, though the “squids, octopuses and cuttlefish” category experienced a decrease at the beginning of the 1990s.

Consistently with the production trend in physical terms, data on national production expressed in value (1995 Italian lira; 1 Euro: 1936.27 Italian lira) also show growth until the mid-1980s and remained relatively stable afterwards. The increase in value of molluscs and crustaceans counterbalance the value reduction of fish, thus contributing to the stabilization of the overall production value.

Unfortunately ISTAT’s statistical findings do not offer any information about another fisheries sector, i.e. aquaculture. For this reason, our analysis has been integrated with information provided by two authoritative sources, i.e. ISMEA (Service Institute for the Food and Agricultural Market) and IREPA (Economic Research Institute for Fisheries and Aquaculture). The data provided by the two sources are highly disaggregated and refer to a number of variables that we deemed necessary to consider and compare, in order to provide a

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production, referring to each production period – one year, one generation, etc. – must be in deficit and the flows of products for the same period must be in surplus.

From this point of view it is clear that the current *plafond* of energy and environmental resources can no longer be considered as an unlimited flow of resources both in terms of time and quantity, as in fact is the case today. It must be considered for what it actually is, i.e., using some of Georgescu Roegen’s basic concepts, a “fund of services” whose potential capacity of renovation over the period must always be preserved; in other words we must always provide for the preservation of that capacity of the fund to produce, in any new period, at least the service flows of resources that were consumed in the preceding period. This does not only mean that the energy-environment fund can in no way be used for production, but also that we must always provide for the creation of “maintenance” flows that are as much as possible allowed by the earth as an anthropic system and serve as tools for the recapitalization of the earth’s essence. Let us think in this respect about the enormous intervention possibilities to re-establish the properties of the environmental fund, i.e. those properties labelled by Ricardo as the “originary and indestructible properties” of the soil; these possibilities refer, in other words, to the capacity to constantly reproduce its flows of services, i.e. fertility in the case of soil.

<sup>6</sup> The Italian National Institute for Statistics ISTAT divides the fisheries sector’s production as follows:

**Fish:** Anchovies, sardines and mackerels; tunas; total fish

**Molluscs:** Common squids, octopuses and cuttlefish; total molluscs

**Crustaceans**

more detailed and significant framework of the rationale dominating the market in the fish sector.

As emerges from the following figure (Figure 1 and Figure 2), the data provided by ISMEA seem to show significantly higher values in terms of both productive volumes and value.

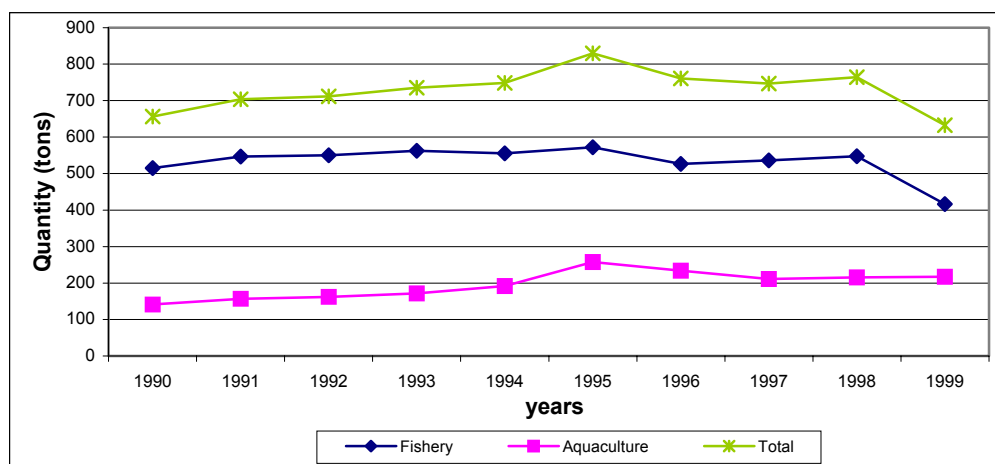


Figure 1. Italy. Production of fisheries and aquaculture in volume (tons). Source: ISMEA, IREPA.

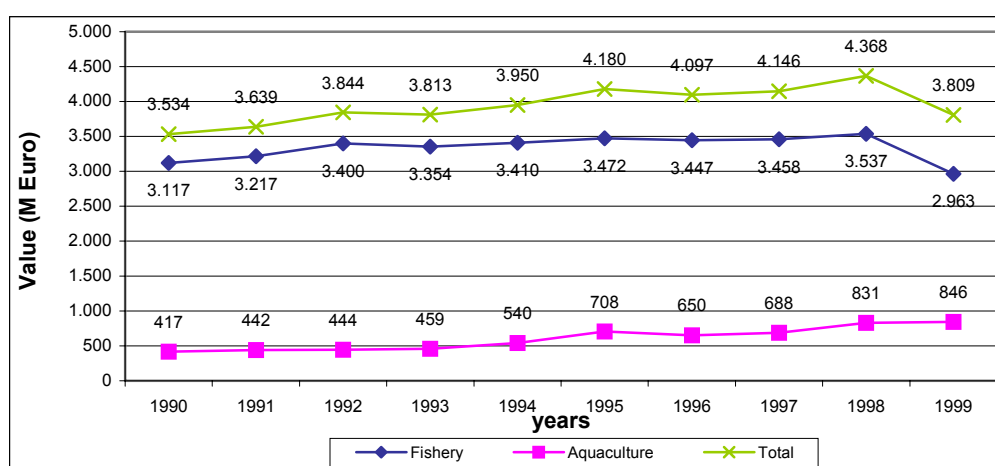


Figure 2. Italy. Production of fisheries and aquaculture in value (billion Italian Lira). Source: ISMEA, IREPA.

Although the historical data cover a shorter period in comparison to the series of information processed by ISTAT, they seem however more likely. It thus emerges that fishery sector production in 1999 was around 463000 tons (as against the 259,730 tons registered by ISTAT), corresponding to a value of almost 3000 billion Italian Lira (as against the 1,388 billion Italian Lira registered by ISTAT). In the same year aquaculture contributed to the overall production with 217000 tons and 846 billion Italian Lira.

Within this framework, aquaculture represents 34% of total production in terms of volume and 22% in terms of value and is able to counterbalance, at least partly, the decreasing trend registered by fisheries production.

As a matter of fact, in the period considered fisheries registered a decreasing trend, both when examining volumes referring to physical production and data referring to monetary values. Conversely aquaculture increased by over 50% in terms of physical production, by

over 100% in terms of the value obtained from the sale of the species produced by the same sector.

Thanks exactly to this positive trend the overall production of the enlarged sector registered a fall of just 3.5% in terms of volume and of even 7.5% in terms of value.

A much more detailed analysis allows furthermore to highlight the incidence of Adriatic productions on total national production.

As shown by the Figure 3, although Italian fishery activity is carried out along the country's entire 7,600 km of coasts and in over 800 landing ports, the role played by Adriatic fisheries is undoubtedly predominant, as most of the national fish products are obtained from the Adriatic and Sicilian coasts.

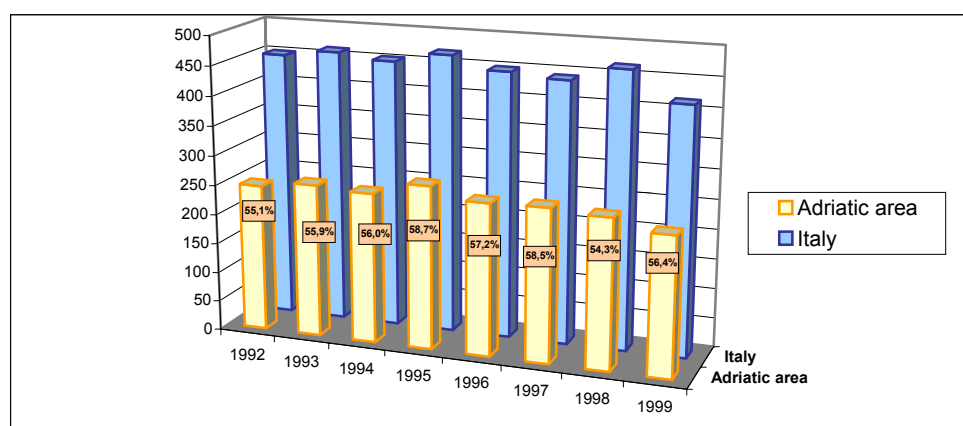


Figure 3. Impact of Adriatic fisheries on total national fisheries (volume). Source: IREPA data.

In 1999 Adriatic production made up for 56.4% of the sector's physical production and for 44.6% of the total of its value.

This incidence was higher with particular reference to some specific species<sup>7</sup>, as is the case of molluscs, which in the Adriatic alone made up for 72% of the total volume and 65% of the total value, and of clams, representing as much as 99% of both the national total volume and value.

Within the Adriatic basin production was mainly centred along the coasts of the Middle (40%) and Upper Adriatic (34%); this applied in particular to the production of clams, representing almost the entire national production in this area.

#### 4. The productive mix

In the analysis of the sector's performance the productive mix plays a particularly important role. This is due to two main reasons. Each of the different species making up the productive mix has a certain price, which reflects the demand expressed by final consumption and the processing industry. In order to know the value of production it is thus necessary to know the productive mix, i.e. the quality and quantity of catch, but also the prices at which production is exchanged (Figure 3a).

<sup>7</sup> Species' classification in the various categories, carried out by ISMEA and IREPA, is as follows: anchovies, sardines, other fish, clams, molluscs (clams excluded), crustaceans.

This kind of analysis would fundamentally require a truthful and reliable system of price recording. Yet unfortunately, the three sources entrusted with data collection do not provide statistics recorded on the markets, which are able to reflect price fluctuations over time and space and thus offer a detailed picture of the several and different local realities; rather they

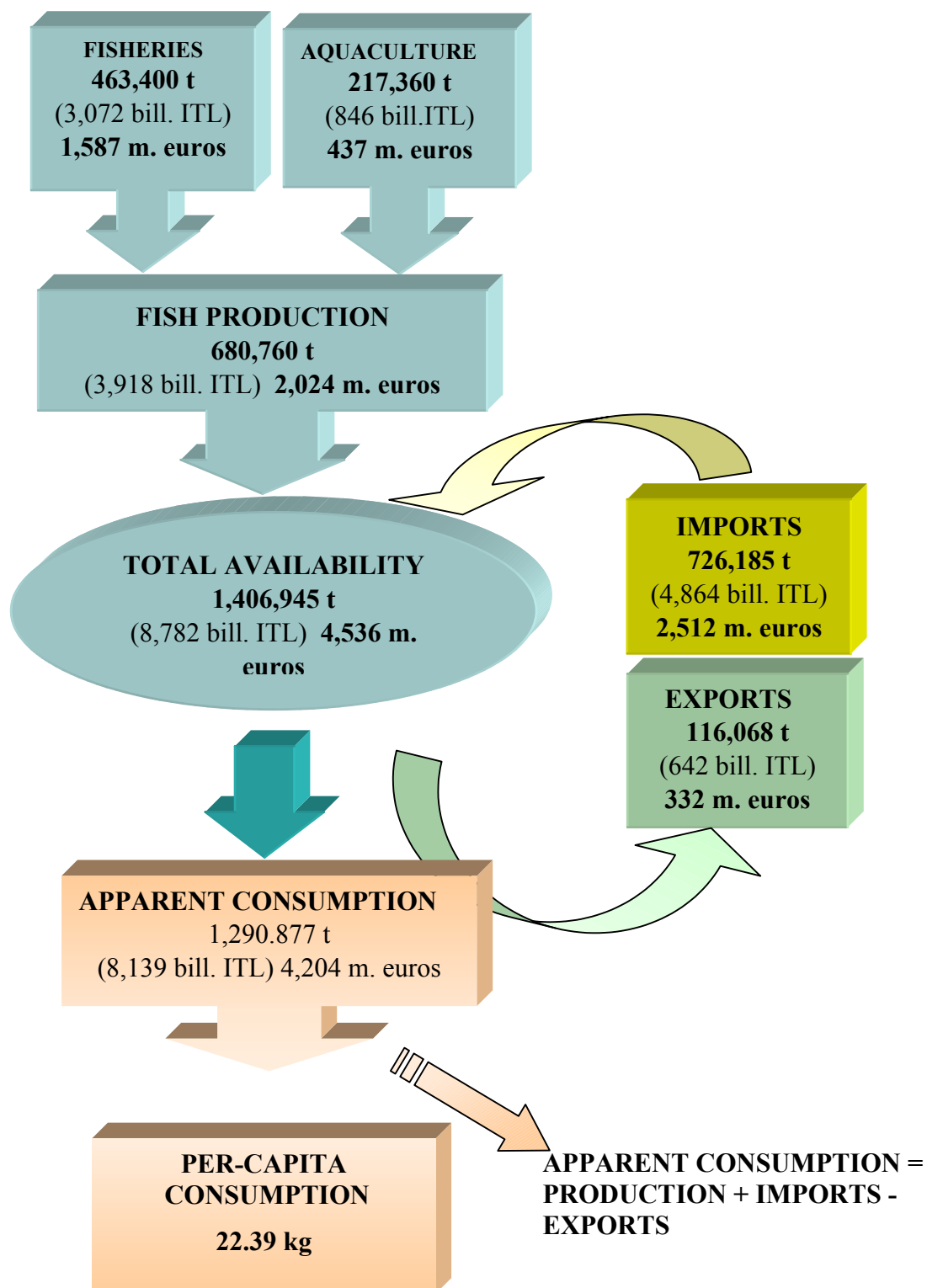


Figure 3a. Production, imports, exports and consumption in Italy (1999). Source: Data processed by ISMEA on the basis of different data sources, 1999.



provide values which are obtained by the division of the values of the gross saleable production by the figures referring to physical production.

The second reason fostering a detailed analysis of the sector's productive mix is has to with foreign trade. The productive mix shows the deviations between qualitative/quantitative national production and market demand, thereby indicating the rate of coverage of domestic demand by national production and the subsequent need for imports.

As shown in the remaining sections of this paper, in this case too, knowledge of the detailed data not only of national products, but also of aquaculture and imported products would be extremely useful. This would allow for recording and representing of the rationale of the ongoing process, which sees the replacement of domestic production by aquaculture and imported products.

Although some brief information on the composition of national production have already been produced at the beginning this paper, data referring to the last ten years are shown in the following section. As clearly emerges from the following figure (Figure 4), the sector's production mainly refers to species included in the "other fish" category, which registered a 12.3% reduction in the period from 1992 to 1999. In 1999 this category accounted for almost 45% of the total physical production

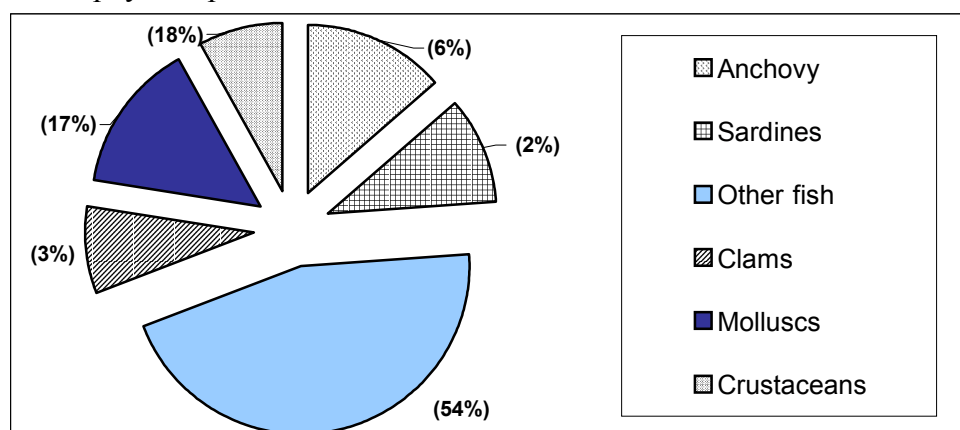


Figure 4. Italy. Productive mix in terms of quantity and % value incidence. Year 1999. Source: Elaboration of ISMEA and IREPA data.

and over 50% of the total production value. This is mainly due to the composition of the category, especially made up of demersal fish species of a higher value. In the same period, 1992-99, a reduction in the catch of all categories was registered. The only exceptions were sardines (+9.1%) and anchovies, with an increase of 62%. In 1999 these two categories made up 11% and 14% of physical production and just 2% and 6% of the overall production value respectively.

Molluscs and crustaceans show the largest incidence on the productive mix. The two categories of species together make up about 35% of the value of Italian production thanks to a strongly supported demand and consequently high sale prices.

There are unfortunately very limited data on the productive mix of the aquaculture sector. As already observed, the sector plays an increasingly important role within national production owing to the improvement in production performance and the subsequent ability to counterbalance, at least partly, the negative results registered by fisheries. In the period

examined, aquaculture registered a 53.9% growth in physical production and an increase of over 100% in its corresponding value.

The sector's total production is divided into fish production and mollusc production. Interestingly it should be observed that each category's physical production and corresponding monetary values are inversely proportional. Aquaculture makes up slightly more than 30% of the sector's physical production, but in the same period it accounts for 64% of its value. Conversely, mollusc aquaculture represents almost 70% of the total production volume, but just 36% of its value.

On the basis of these data, a further increase of fish culture is hence expected, even if this was not the case in the 1992-99 period, in which fish production and mollusc production variation were respectively of 33% and 34%. A more detailed distinction shows how the production of the fish culture sector is mainly focussed on species of higher value and that are most appreciated by consumers, such as European sea bass and sea bream (registering quantitative increases of 220% and 414% respectively), to the detriment of species like eels and mullets, which show relatively stable or even decreasing quantities (mulletts: +1.97%; eels: -4.83%).

## 5. Prices

After a description of the productive mixes of the two sectors making up the whole fisheries sector, a detailed analysis of their corresponding prices should be carried out, both with reference to national and imported products.

As already observed, however, the information available on these aspects is scarce and does not allow us to carry out thorough and detailed analyses. Conversely, it is also evident that the price level obtained by producers on the market is crucial to determine both the companies' income levels and the income of the sector as a whole.

Table 1 shows the different species' prices in the period examined. Substantial deviations and the marked variability of prices do not allow the stabilization of company profits and the reduction of the risks associated with the fishing activity, which should be primary objectives of the policies for the sector.

Table 1. Italy. Prices (Italian Lira per kilo) per single species. Years 1992 – 1999.

	1992	1993	1994	1995	1996	1997	1998	1999	1992–1999%var.
<b>Anchovies</b>	3,988	4,027	3,981	2,934	3,734	3,105	3,225	2,988	-25.4%
<b>Sardines</b>	807	770	806	769	836	875	1,101	1,232	52.7%
<b>Other fish</b>	7,634	6,980	7,101	7,181	7,293	7,317	7,680	8,604	12.7%
<b>Clams</b>	3,059	2,462	2,861	3,124	2,157	3,307	3,623	2,300	-24.8%
<b>Molluscs</b>	6,335	6,050	5,777	5,922	6,865	7,418	7,842	8,383	32.3%
<b>Crustaceans</b>	11,881	13,598	14,295	16,076	16,529	16,369	16,033	15,931	34.1%

Source: IREPA.

Prices are unstable not only over time, but also and especially in their spatial dimension. As highlighted by Table 2, in the Adriatic regions in 1999 alone the different species were quoted at prices with a variation that was sometimes well over 100%, depending on the

different local realities. In this respect, the following paragraph will show the difference between the average prices quoted in the different Adriatic fish markets.

Table 2 – Adriatic Sea. Prices (Italian Lira per kilo) per single species (for the Adriatic Sea the mean value is reported). Year 1999.

	1999					
	Apulia	Abruzzo/Molise	Marche	E. Romagna	Triveneto	Adriatic Sea
<b>Anchovies</b>	2,182	3,660	1,563	1,655	1,733	<b>2,159</b>
<b>Sardines</b>	540	800	837	1,335	1,203	<b>943</b>
<b>Other fish</b>	7,260	8,428	9,383	7,342	8,292	<b>8,141</b>
<b>Clams</b>	3,408	1,353	2,148	4,154	2,030	<b>2,619</b>
<b>Molluscs</b>	12,571	8,168	5,400	6,494	6,544	<b>7,835</b>
<b>Crustaceans</b>	15,483	22,304	17,699	9,828	9,524	<b>14,968</b>

Source: Elaboration of IREPA data.

The strong price variability seems to be linked to the organisational and functioning methods of the Italian trade and distribution system. It is known that the trade of fish products was liberalised with law no. 125/59, which abolished the obligation for producers to sell through the market at the conditions set by the previous norms. The aim was to allow producers to sell at the highest prices possible existing outside the local market.

In this way national fish products pass along a whole series of competing commercial channels, which together with the fragmentation of landing ports and the low bargaining power of producers towards wholesalers and retailers, contribute to the creation of an extremely fragmented and variable price system for fish products.

Imported fish products travel along other commercial channels, established by a restricted group of importers who quote their prices within an oligopolistic system. Moreover, fish products bound for the processing sector pass along other trade channels. Very often processing companies themselves tend to establish a direct relationship with producers, in order to obtain better guarantees of continuity in the provision of the fish products they have to process. In this case a regime based upon agreed prices is established.

Such a varied and variable price system for fish products does not always correspond to systematic, detailed and reliable information allowing highlighting the role played by prices in the sector's development.

The general framework of the national distribution system has been recently further worsened by the process of market globalisation, which gives dealers the possibility to buy almost all species of fish products at any time, on any market and at increasingly competitive prices. National products, which are not supported by an adequate fisheries policy based on qualitative differentiation, run the risk of being exposed to the excessive pressure of global competition.

Unfortunately, in this case too no reliable information on foreign prices has been available for a sufficiently long period of time, so as to allow the analysis of the impact of price dynamics of imported products on the prices of national products.

Statistical sources do not provide data directly registered on the market, which are able to reflect the spatial and temporal price fluctuations and thus offer a detailed overview of the several and diverse local realities; rather they provide average values that refer to a small group of big national markets. These values are used to determine the value of production both at a national and at a regional level and contribute to describe the sector's macroeconomic picture. Such a description is of little interest, when considering the secondary role played by the fishery sector at national level.

It would otherwise be extremely useful to have detailed information highlighting the sector's most important elements, i.e. the evolutionary dynamics of the single realities, companies' profitability, etc., at local level, where fisheries play a really significant role as an economic activity (Figure 6).

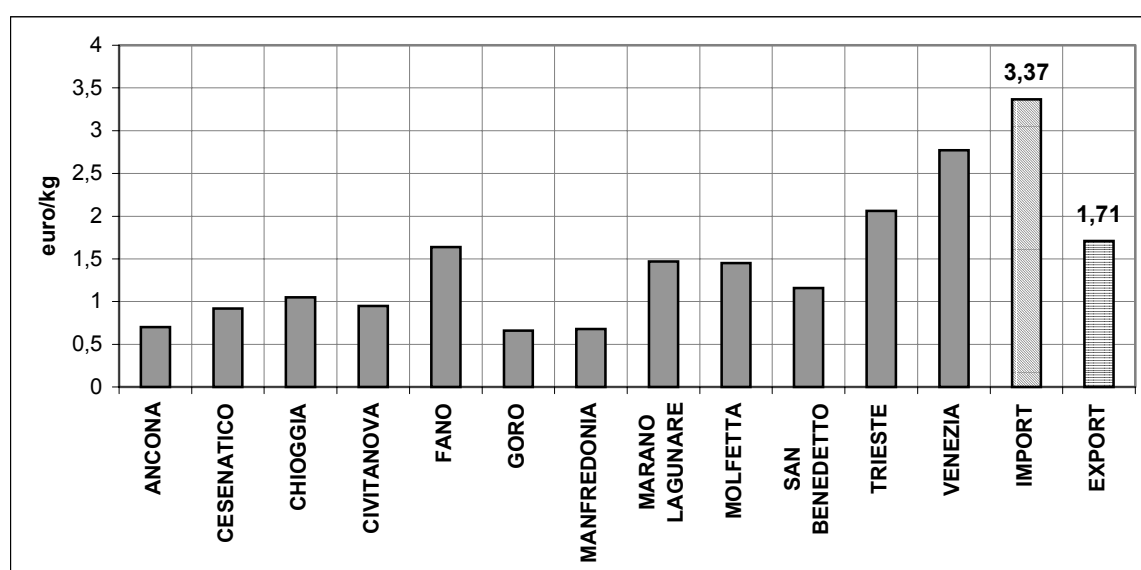


Figure 6. Comparison of the anchovies average prices of some wholesale fish markets of the Adriatic Sea with import-export prices - Year 2000. Source: Elaboration of IREPA data.

## 6. The role played by wholesale fish markets in the Adriatic Sea

Experience has shown the presence of important roles that the private sector cannot spontaneously take on or, in other words, cannot play in the short term. One of the consequences of this could be the failure to reach the potential benefits offered by the system. Products can theoretically be marketed along two main channels of commercialisation: private or public sale; the latter is generally carried out by auction and, as in the case of national auctions, on wholesale fish markets.

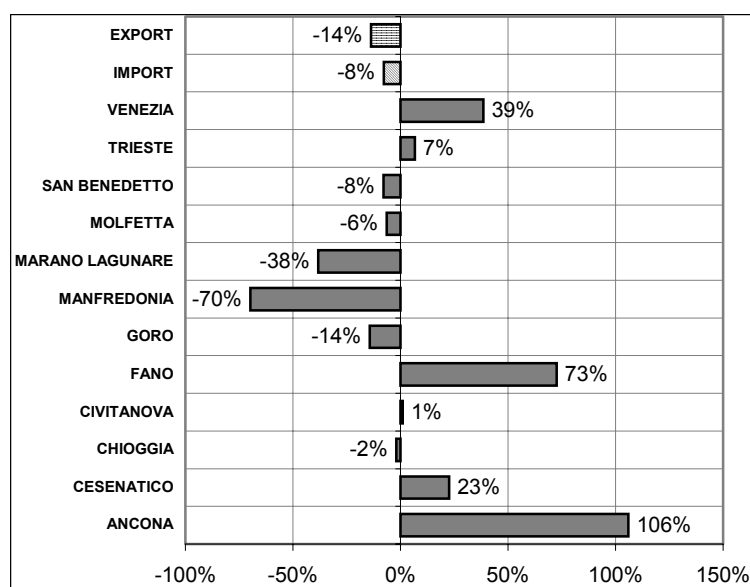


Figure 7. Percentage Variation 1998 / 2000 of the price of anchovies in some wholesale fish markets of the Adriatic Sea. Source: Elaboration of IREPA data.

In Italy wholesale fish markets were first established with the approval of law no. 1487 of 12<sup>th</sup> July 1939, which foresaw the obligation to establish a wholesale market for fruit, vegetables, meat and fish products exclusively within mercantile structures managed by the municipalities. This allowed the establishment of an institutional network of wholesale distribution, located near the production centres and the main consumption centres. From the point of view of an interventionist policy, as was the one adopted by the government at that time, fish markets played a role of protection for both producers and consumers by pursuing three main objectives:

- Organizing outlet channels for catches, which was no longer left to the free initiative of producers, thereby achieving the indirect effect of stabilizing producers' income;
- Organizing hygiene and quality controls on the one hand and the achievement of transaction transparency on the other, to the advantage of consumer protection;
- Carrying out controls over transaction tax yields and the systematic collection of data on the sector's activities.

Over time, the excessive bureaucratisation, the lack of links between the various markets and the subsequent scarce circulation of information, as well as the inadequacy of the structures and services offered have all contributed to strongly diminish the role of these institutions. This led to the liberalization of wholesale trade with law no. 125 that was passed in March 1959; wholesale trade was to be admitted either on *ad hoc* markets or outside the markets themselves. The malfunctioning of wholesale fish markets thus led to the creation of a private distribution network.

There are at present 13 Adriatic fish markets, divided into production and mixed markets, e.g. Trieste market. In spite of the awareness that the 2000 trend of commercialisation of fish products has to be analysed with due consideration of that year's main events (mucilage, cost for fuel oil, BSE crises), it can undoubtedly be stated that markets sharply increased their annual turnover in comparison to previous years and this could lead us to rethink and revalue their role. It should be noted here that the positive results obtained, also in terms of

commercialised quantities, are to be attributed to foreign productions that have been imported to counterbalance a temporary lack of products or increase turnover (Figure 7).

For the objectives of our study, a particularly interesting analysis was carried out on the comparison between the average prices quoted on Adriatic fish markets. The analysis was carried out both on the total of traded fish, and on some specific species, i.e. anchovy, hake, squid, cuttlefish, sole and mantis squillid.

Table 3. Commercial trend of the main production fish markets

<b>Markets</b>	<b>Quantity (tons)</b>	<b>Value (000 Italian Lira)</b>	<b>Average price (Italian Lira /kg)</b>	<b>1999 – 2000 % var.</b>
Ancona	1,534.5	15,855,657	10,333	12.7
Cesenatico	2,369.4	8,948,611	3,777	25.1
Civitanova M.	1,414.5	12,575,971	8,891	13.6
Fano	915.8	7,163,067	7,822	10.2
Goro	3,010.8	10,873,214	3,611	-2.0
S. Benedetto del T	2,651.5	12,499,885	4,714	-3.7

Source: ISMEA.

Table 3 clearly shows that Goro is the most important Adriatic market in terms of traded quantities, followed by S. Benedetto del Tronto. Yet in terms of value Ancona's market has totalled over 15 billion Italian Lira, thus establishing itself as the strongest among the other Adriatic markets. It can be observed that the average prices quoted are remarkably different between Adriatic markets; also each market's trend, expressed in terms of percentage variation, is similarly different in comparison to the tendency registered the year before for the above mentioned reasons. Price fluctuations for fresh fish show large variations depending on fish species. An example is given by the following charts referring to one pelagic species, i.e. anchovies. The charts show that the production decline registered in 2000 brought about a strong revaluation of sale prices, e.g. of even +106% in Ancona, thus counterbalancing the losses suffered by operators because of the reduction in quantities. Prices are obviously diversified depending on import prices. A very similar situation, although less emphasized, can be observed for the Venice, Fano and Cesenatico markets. Average import prices, which show a generalized diminishing trend, are above the local product's highest price in comparison to previous years and are around 3.3 euro/kg in 2000. By way of conclusion, it can be observed that the use of different bargaining systems (manual or electronic auction, direct bargaining) and the presence of different types of operators (producers, auctioneers, brokers, wholesalers and retailers) characterize the commercial dynamics at the local level and differently influence price determination in this way. Therefore, the quotations of the different fresh fish products mainly vary according to species, quality and size, as well as the normal interplay between supply and demand, but at the same time they are highly dependant on geographical and contract peculiarities and on the commercial structures where bargaining takes place. Within this framework, the sector's commercial operators have established a distribution network that is well structured on the territory, in order to adapt their organizational structure to the market's characteristics; this leads to greater market segmentation on the one hand, and, on the other hand, to the possibility of offering consumers extremely differentiated products both in terms of species and quality.

## 7. Consumption

As emerges from the following table, per-capita consumption of fish products has registered an increasing trend in the last decade, passing from 20.8 kg in 1990 to 23 kg in 1998. This growth has largely been supported by imports, which have registered significant increases and taken on an increasingly consistent role in supplying domestic demand and meeting the needs of final customers. It is in this respect appropriate to present a brief analysis of consumption with reference to the main types of products. The historical series available is not long, yet the data provided by ISMEA-Nielsen allow us to highlight some important features of fish consumption in Italy. As for the year 1999, Italian consumers clearly indicated their preference for frozen and deep-frozen fresh fish, whereas conserved fish and “dried, salt and smoked fish” just represented little more than 20 % of total consumption in terms of volume and around 25% in terms of value.

Table 4. Italy. Consumption calculated on the basis of the total availability method (000 tons).

	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Internal production a)</b>	656	704	712	736	748	830	761	747	764
<b>Imports b)</b>	593	633	604	581	582	600	622	762	774
<b>Exports b)</b>	65	72	74	87	98	107	116	131	130
<b>Internal consumption</b>	1,184	1,265	1,242	1,230	1,232	1,324	1,267	1,378	1,409
<b>Consumption per-head (kg)</b>	<b>20.8</b>	<b>22.3</b>	<b>21.8</b>	<b>21.5</b>	<b>21.5</b>	<b>23.1</b>	<b>22.1</b>	<b>22.0</b>	<b>23</b>

Source: A) IREPA, ICRAM, ARPI; B) ISTAT.

Between the categories “fresh and defrosted fish”, “frozen/deep-frozen loose fish” and “deep-frozen packed fish” the former prevailed, making up alone 55.2% of total consumption in volume and 52.1% of national consumption in terms of value. Figure 8 shows the major species identified within the groups that have proved to be of particular interest for the analysis. The data provided refer to the purchased quantities, whereas consumer spending was obviously proportional to the “value” of the species and the degree of processing undergone by the product (in the case of frozen/deep-frozen and packed products). The most important species represented in the category “fresh and defrosted fish” were demersal fish species, i.e. sea bream, hake and European sea bass, which made up about 30% of the total. They were followed by mussels and clams, representing approximately 26% of the overall category of molluscs. An important role as for fresh and defrosted fish consumption was also played by pelagic species – anchovies and sardines – that made up about 15% of the total.

In 1999, still within the category of frozen/deep-frozen fish, Italian consumers showed a preference for packed products, accounting for about 57% of purchases within the category, as against 43% of purchases of frozen and/or deep-frozen loose fish. Finally, the absolute prevalence of tuna fish within the group of “conserved fish” should also be observed (Figure 9). Tuna fish accounted alone for almost 90% of the total consumption of conserved products in Italy; out of this figure, tuna fish in olive oil represented almost 90%, whereas just 10% referred to natural tuna fish. Consumption data referring to other conserved fish categories were of no significant importance for the Italian market.

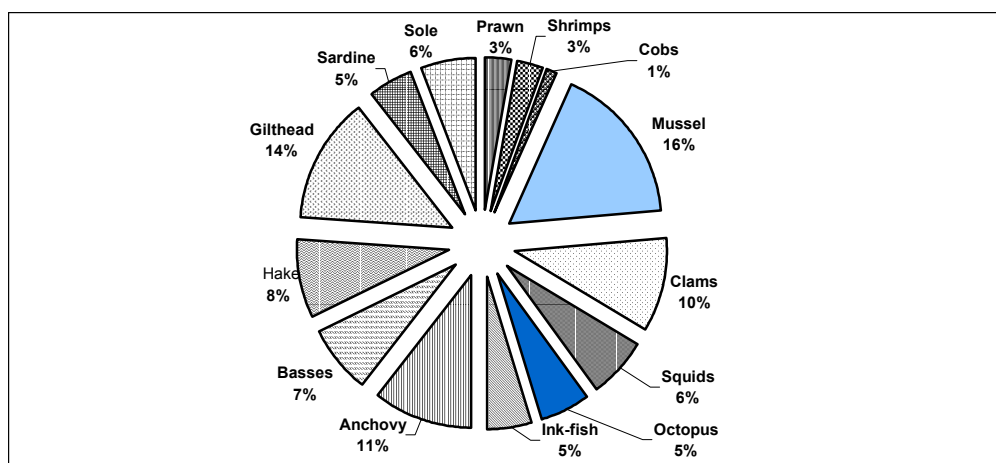


Figure 8. Italy. Domestic purchases referring to the main fresh and defrosted natural fish species in Italy (tons). Year 1999. Source: ISMEA, IREPA data.

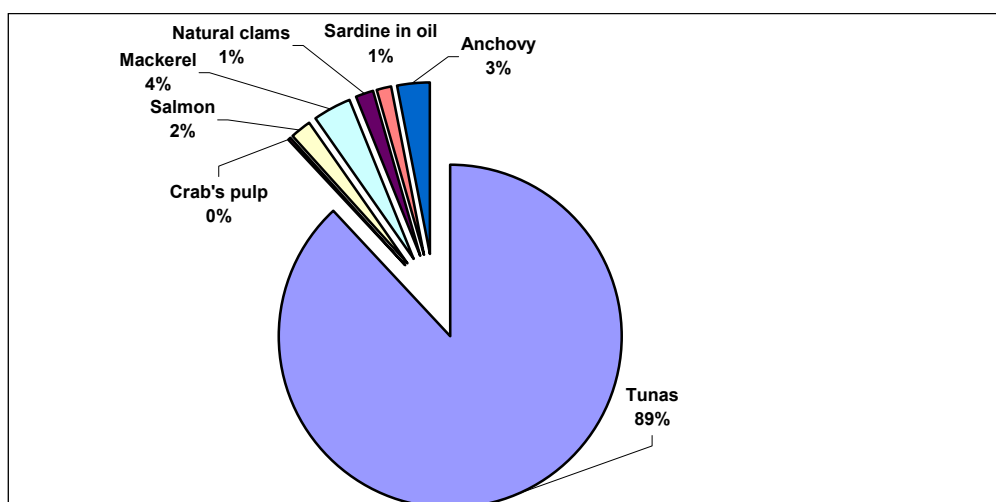


Figure 9. Italy. Purchases of conserved fish (tons). Year 1999. Source: ISMEA, IREPA data.

## 8. Foreign trade

A large part of national consumption is covered by increasingly substantial imports. As shown by Tables 5 and 6, in the period examined the rate of self-provision fell by an additional 7 %, reaching 50% in 1998, in terms of both volume and value.

Table 5. Italy, Foreign trade indexes (tons).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1990 – 1998 %var.
Production	666,000	704,000	712,000	736,000	742,000	830,000	761,199	747,484	764,121	16.5%
Imports	593,564	634,512	605,376	581,554	582,111	600,397	621,901	761,587	774,291	30.4%
Availability	1,249,564	1,338,512	1,317,376	1,317,554	1,324,111	1,430,397	1,383,100	1,509,071	1,538,412	23.1%
Exports	67,720	72,471	74,099	87,462	97,843	106,664	116,472	130,686	129,578	91.3%
Balance	-525,844	-562,041	-531,277	-494,092	-484,268	-493,733	-505,429	-630,901	-644,712	22.6%
Movement	661,284	706,983	679,475	669,016	679,954	707,061	738,373	892,273	903,869	36.7%
Apparent consumption	1,184,000	1,256,000	1,219,000	1,229,000	1,227,000	1,323,733	1,266,628	1,378,385	1,408,833	18.9%
Normalized balance	-79.5%	-79.5%	-78.2%	-73.9%	-71.2%	-69.8%	-68.5%	-70.7%	-71.3%	8.2%
Rate of self-provision	55.4%	56.1%	58.4%	59.9%	60.4%	62.7%	60.1%	54.2%	54.2%	-1.2%
Rate of import coverage	11.4%	11.4%	12.2%	15.0%	16.8%	17.8%	18.7%	17.2%	16.7%	5.3%
Import propensity	50.1%	50.5%	49.7%	47.3%	47.4%	45.4%	49.1%	55.3%	55.0%	4.9%
Export propensity	10.3%	10.3%	10.4%	11.9%	13.3%	12.9%	15.3%	17.5%	17.0%	6.7%



Table 6. Italy, Foreign trade indexes (bill. Italian Lira).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1990 – 1998 % var.
Production	3,534	3,659	3,844	3,813	3,935	4,180	4,097	4,146	4,368	23.6%
Imports	2,876	3,256	3,170	3,277	3,515	3,878	3,897	4,413	4,913	70.8%
Availability	6,410	6,915	7,014	7,090	7,450	8,058	7,994	8,559	9,281	44.8%
Exports	272	294	301	397	458	558	571	648	651	136.0%
Balance	-2,604	-2,962	-2,869	-2,880	-3,057	-3,320	-3,326	-3,765	-4,262	63.7%
Movement	3,148	3,549	3,471	3,674	3,973	4,436	4,468	5,061	5,564	76.7%
Apparent consumption	6,139	6,620	6,713	6,686	6,992	7,500	7,423	7,911	8,630	40.6%
Normalized balance	-82.7%	-83.5%	-82.7%	-78.4%	-76.9%	-74.8%	-74.4%	-74.4%	-76.6%	6.1%
Rate of self-provision	57.6%	55.3%	57.3%	57.0%	56.3%	55.7%		52.4%	50.6%	-7.0%
Rate of import coverage	9.5%	9.0%	9.5%	12.1%	13.0%	14.4%		14.7%	13.3%	3.8%
Import propensity	46.9%	49.2%	47.2%	49.0%	50.3%	51.7%		55.8%	56.9%	10.0%
Export propensity	7.7%	8.0%	7.8%	10.4%	11.6%	13.3%		15.6%	14.9%	7.2%
Opening grade	43.5%	45.8%	43.8%	44.8%	45.8%	46.9%				
Terms of trade	0.83	0.79	0.78	0.81	0.78	0.81		0.85	0.79	-0.04%

Although Italian exports registered a substantial increase (of 91.3% in volume and 136% in value), this rise was not enough to counterbalance the level of imports, which also registered growth, even if to a lesser extent.

However, the balance still remained markedly negative and the sector presented a worse performance, with a balance negative variation of 22.6% in terms of volume and over 60% in terms of value. The strong deficit can be seen in almost all categories being exchanged in foreign trade.

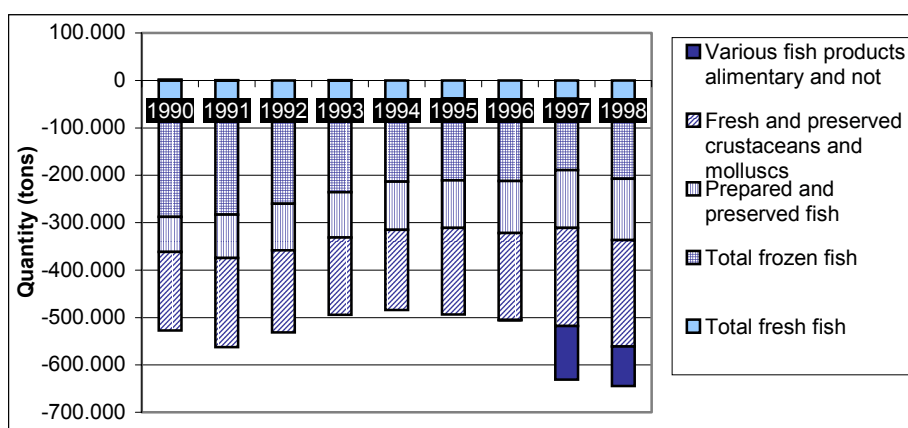


Figure 10. Italy, Foreign trade balance per categories (tons). Source: ISMEA, IREPA data.

The improvement in the balance of fresh and frozen fish imported quantities, registered in the period examined, does not mitigate the worsening balance that was registered for the same categories in terms of value (Figure 10). Consistently with what was observed about the eating preferences of Italian consumers, there was also a substantial worsening in the balances referring to “prepared and tinned fish” (76% negative variation in terms of volume and 97% negative variation in terms of value) and “fresh and conserved crustaceans and molluscs” (50% negative variation in terms of volume and 97% negative variation in terms of value).

Figure 11 confirms Italian consumers’ eating preferences. They mainly refer to species, whose national production is in deficit, i.e. thus unable to cover domestic demand, or less

competitive in comparison to other countries' production. Within total imports, imports of tuna fish are the most relevant ones (24%).

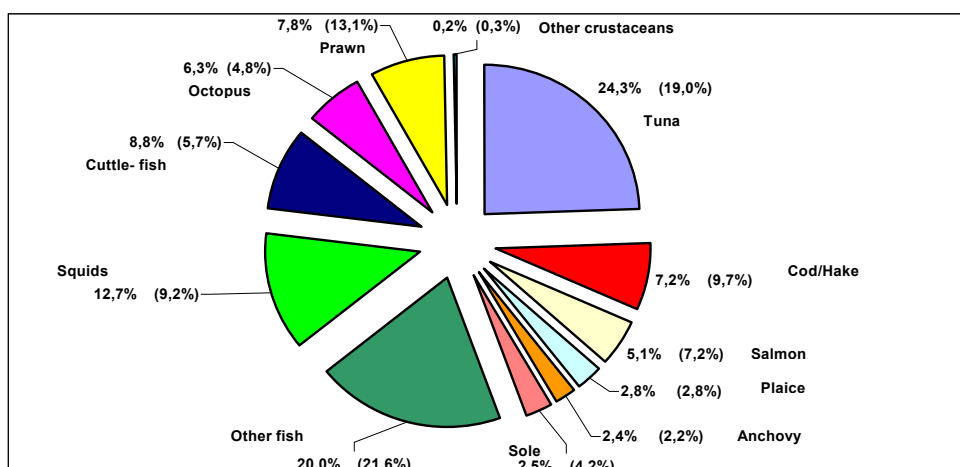


Figure 11. Italy, Imports per species in quantity and percentage values. Year 1998. Source: ISMEA database.

This category is followed by imports in the category “other fish” (20%), mainly composed by valued demersal species, which are particularly demanded on the Italian market. Imports of prawns also play an important role; prawns generally come from developing countries, where labour costs are low and prawns as processed products are offered at a much higher price in comparison to Italian or European products.

On the other hand, 27% of Italian exports are made up of “anchovies and sardines” – small pelagics – i.e. species that are sold at very low prices on the market in comparison to the valued demersal species.

Export composition, with reference to the various exported species, is very important as for the prices that can be quoted for these species (Figure 12).

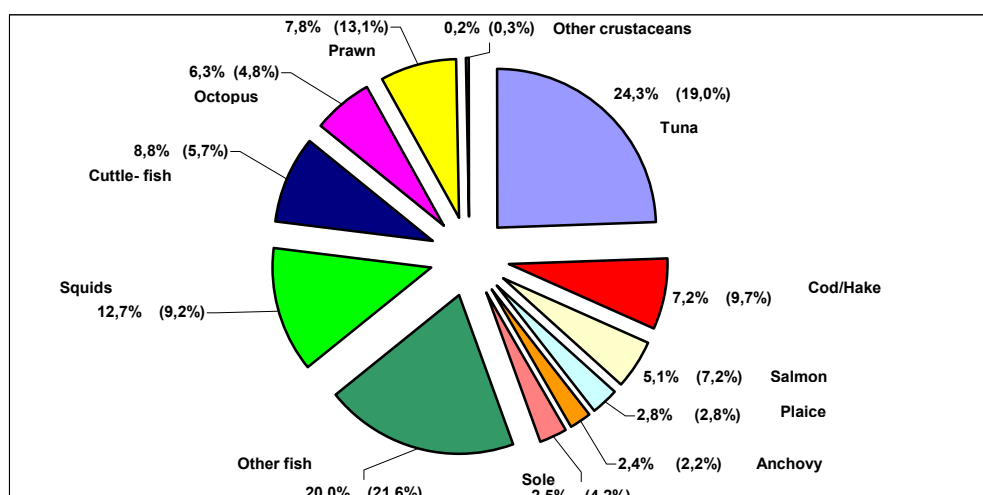


Figure 12. Italy, Exports per species in quantity and percentage values. Year 1998. Source: ISMEA database.

It can be thus observed that the species “sardines and anchovies”, which made up almost 30% of total export volume in 1998, were just slightly over 11% of their value.

Conversely, the category “other fish” accounted for 28% of the exported volume and for over 30% of its value. Similar observations can be made for tuna fish, which have been particularly demanded by the processing industry in the last few years, and for the group “other molluscs”. Italy’s main trading partners are the countries of the European Union, as far as both export and import markets are concerned. In the period observed, increases in both European exports – 85.6% in terms of volume and 142.15% in terms of value –, and imports – 71.4% in volume and 93.6% in value – were registered. The balance for foreign trade of fish products referring to countries outside the European Union has slightly grown in the period examined, thanks to a substantial increase in exports towards non EU-countries; for the latter, a positive variation amounting to 135% in terms of volume and over 160% in terms of value was registered (Figure 13).

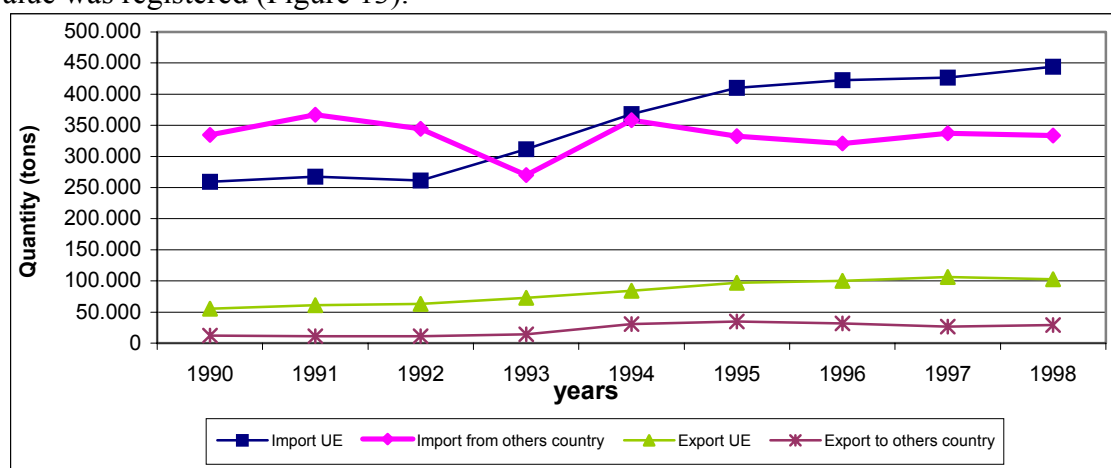


Figure 13. Italy, Imports and exports in terms of volume. Source: ISMEA.

Spain is Italy’s main trading partner among European countries, both as a sale market and as a market of origin for imported products. In the period examined a sharp rise in exports, as well as in imports from Greece was registered, with the country thus becoming Italy’s main trading partner together with Spain and some North European countries. Conversely, the UK market and especially the Portuguese one have gradually lost their importance. In terms of value, the categories of crustaceans/molluscs and conserved fish play a predominant role in imports, followed by fresh and frozen fish. Total imports in 1999 were 2500 million euros and registered an increase of about 1.5 % as against the previous year (Figure 14).

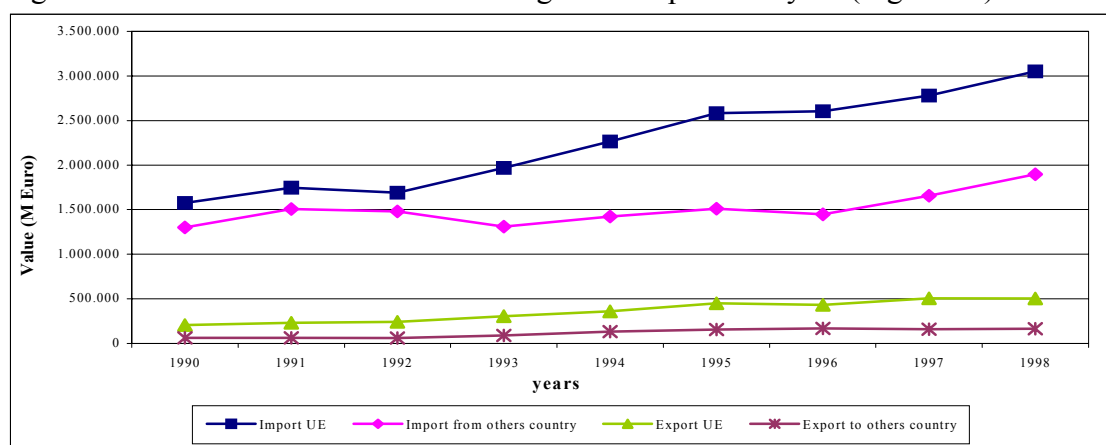


Figure 14. Italy, Imports and exports in terms of value. Source: ISMEA

As for average prices per single fish category, fresh fish play the most important role (5.06 euro/kg) in comparison to frozen fish (2.30 euro/kg) and crustaceans/molluscs (3.19 euro/kg). The latter species in particular registered negative variations in comparison to 1998 with -7%. This figure is, among other things, perfectly in line with the well-known market law of the balance between supply and demand. Quantitative imports of this fish category increased by 2.7% in the same year.

The contribution by each fish species has certainly varied over the last few years owing to the available quantities, price dynamics, as well as many other factors. Generally speaking, tuna fish trade has experienced no variations, with a slight decrease in terms of value in the late 1990s. Aquaculture development, for example, has radically affected the composition of import flows. Currently imported demersal species are to a large extent aquaculture fish and the continuous availability of the products, together with their markedly lower unit price in comparison to the price of sea products, have positively affected import flows.

Conversely, molluscs, especially cephalopods (octopus, cuttlefish and squid) among them, are taking on an increasingly relevant role in international sea fish trade, thereby replacing cod and sole in quantitative terms. Products coming from third countries, especially from Africa, are imported to Italy as frozen fish. Together with molluscs a substantial quantity of demersal species (dentex, sea bream, stone bass, European sea bass or spotted sea bass, etc.) is also imported.

Imports of crustaceans have grown too, owing in particular to the increase in imports of carapace prawns that have doubled as against 1998. Also imports of Norway lobsters and European lobsters have registered an increase, whereas imports in prawns have experienced a marked quantitative reduction.

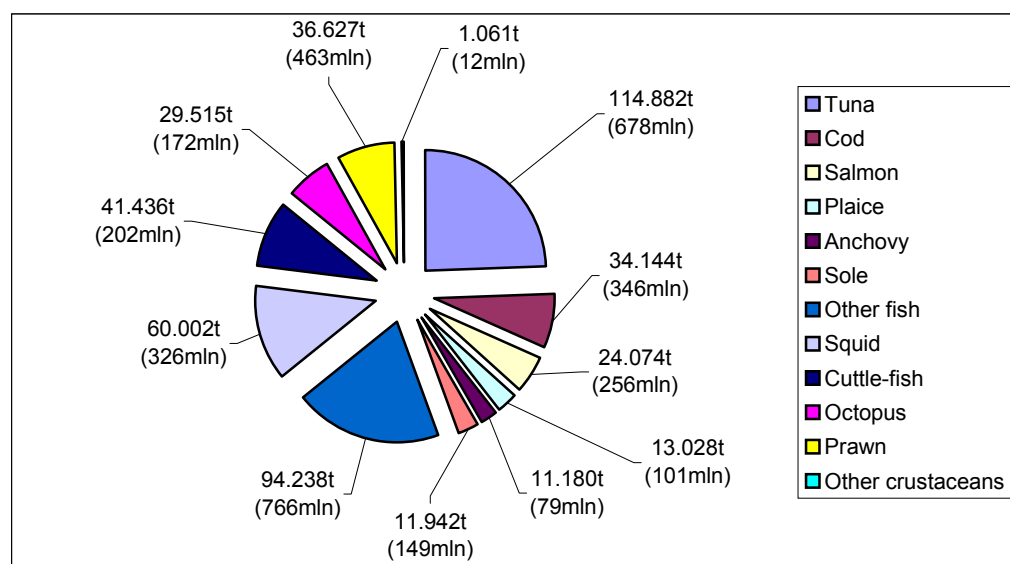


Figure 15. Imports of main species (1994-2000). Source: Elaboration of ISMEA data.

Figures 15 and 16 clearly indicate the role played by the “other fish” category (demersal species), making up for about 24.5 % of total imports, as well as by common squid (7.3%), octopuses (6.6%) and cuttlefish (4.8%). Moreover, the 2000/98 variation highlights the positive variations registered by all categories of molluscs and crustaceans and the corresponding crisis of cods and tuna fish, the former in terms of imported quantities and the latter in terms of value.

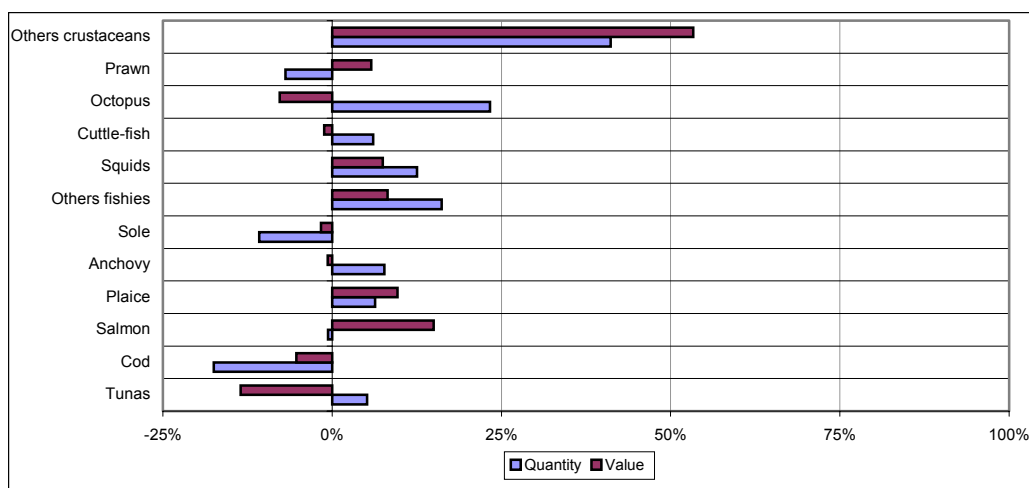


Figure 16. Variation 1998/2000 of main species imports. Source: Elaboration of ISMEA, IREPA data.

## 9. Trade in the Adriatic area<sup>8</sup>

A brief analysis of Italian trade relations with its main Adriatic partners in terms of Italian imports and exports was also carried out. Out of the total of Italian trade exchanges with the rest of the world in the year 2000 Slovenia, Albania and Croatia represent just 0.99% of total imports in terms of quantity 0.57% of total imports in terms of value, and account for 5.48% of total exports in quantitative terms and 4.62% of total exports in value.

The trade trend with these countries has been extremely variable in the last decade, as far as imports are concerned. Conversely, exports have registered extraordinary evolutions, especially with Albania and Slovenia, whose trends are clearly shown in the charts and its corresponding table. Table 1 shows import and export trends from 1993 to 2000 for the four Adriatic countries, whereas the charts refer to the trend for each single country.

The sharp decline from 1993 until now in Italy's commercial relations with Croatia is particularly evident. Imports have fallen from about 10000 tons in 1993 to little more than 6000 tons today. Such a drastic reduction occurred between 1993 and 1994. In percentage figures the period of time examined experienced a reduction in orders of - 36%. 1999 imports from Croatia were about 6.700 tons, thus registering a positive variation of 15% as against the previous year.

Another negative quantitative variation was registered in 2000 because of the war, thus negatively affecting all Italian imports with a total reduction of 34.5% in terms of volume. As for value, a decline was registered between 1998 and 1999 (-7.6%), following a substantial drop in average unit prices that also affected imports from EU-countries, albeit to a lesser extent. Conversely, the total import value registered in 2000 has grown. The drop in supply, owing to extraordinary events that are external to the market, brought about a sudden increase in average unit prices.

Exports from Italy towards Adriatic countries totally accounted for 7.600 fish tons, divided into Croatia, Albania and Slovenia. Although imported quantities did not exceed 8000 tons, the overall value of Italian exports towards the markets on the Eastern Adriatic shore

<sup>8</sup> All the following data have been provided by ISMEA

exceeded the value of the products imported from Adriatic countries in the same year (18,567,000.44 euros as against 15,617,000.44 euros).

Exports to Croatia underwent a substantial drop, whereas Slovenia accounted for almost 50% in terms of value of Italian exports towards Adriatic countries in the 2000.

In relative terms Adriatic countries make up about 6% of total exports in terms of volume. This percentage is growing, even if the growth is inferior to the increase in exports to other Mediterranean countries, such as Greece (10.3%) and Spain (41.5%). Like the trend observed for imports, exports also show quite remarkable fluctuations from year to year. In years of higher imports, exports obviously registered exactly the opposite trend. As a matter of fact, in 1999 exports fell and went up again in 2000. The negative variation mainly referred to Croatia, which registered a 26% drop as against 1998, although it has always been Italy's main trade partner among Adriatic countries. Italian fish purchases especially from Albania grew, instead, (+30%), while imports from Slovenia registered a very slight decline (-1.7%). The same trend was also observed in terms of value. This year Italy's foreign trade balance with Adriatic partners has been positive.

## 9.1 Italy – Croatia

Among Adriatic countries, Croatia is Italy's main trading partner. As a matter of fact, in the year 2000 almost 80% imports from Adriatic countries came from Croatia (see Table 7, Figures 17 and 18, 19 and 20). Croatia becomes considerably less important when it comes, however, to Italian exports. As a matter of fact, among Adriatic countries Slovenia plays a predominant role, being an outlet market for over 53% of the value of Italian exports (see Table 8, Figures 21 and 22).

Table 7. Imports from Adriatic countries (tons).

	1993	1994	1995	1996	1997	1998	1999	2000	% var. 1993-2000
<b>Croatia</b>	10,096	7,423	6,467	7,103	7,435	5,864	6,743	6,405	-36.6%
<b>Albania</b>	990	767	667	809	904	1,228	1,225	1,455	47.0%
<b>Slovenia</b>	385	155	299	173	317	217	165	212	-44.9%
<b>Total</b>	<b>11,470</b>	<b>8,345</b>	<b>7,432</b>	<b>8,086</b>	<b>8,656</b>	<b>7,308</b>	<b>8,133</b>	<b>8,071</b>	<b>-29.6%</b>

Source: ISMEA

Imports from Adriatic countries (000 Euros)

	1993	1994	1995	1996	1997	1998	1999	2000	% var. 1993-2000
<b>Croatia</b>	19,568	17,237	16,082	14,824	13,488	10,736	9,917	10,312	-47.3%
<b>Albania</b>	1,600	985	1,318	1,938	2,955	3,628	4,206	4,658	191.2%
<b>Slovenia</b>	394	221	242	343	575	370	241	647	64.3%
<b>Total</b>	<b>21,561</b>	<b>18,443</b>	<b>17,642</b>	<b>17,105</b>	<b>17,018</b>	<b>14,734</b>	<b>14,363</b>	<b>15,617</b>	<b>-27.6%</b>

Source: ISMEA

As far as trade between Italy and Croatia is concerned, it can be observed that imports of small pelagics, particularly "anchovies/European anchovies", have registered a positive trend, in terms of both quantity and value.

Figures 19 and 20 show that quantity and value fluctuations of pelagics over time (anchovies/European anchovies and sardines) are inversely proportional, i.e. increases in quantity correspond to rises in value, and vice versa.

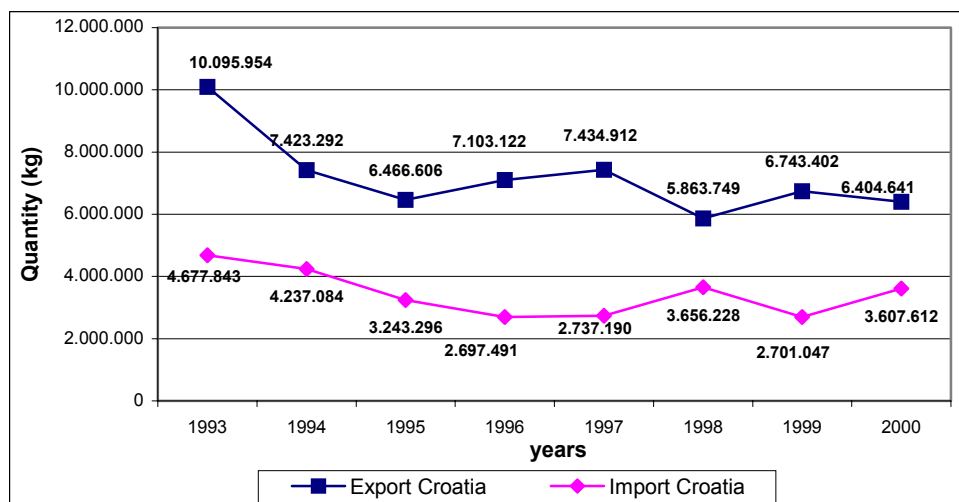


Figure 17. Italy, Trade relations with Croatia (quantity in kg). Source: ISMEA data base.

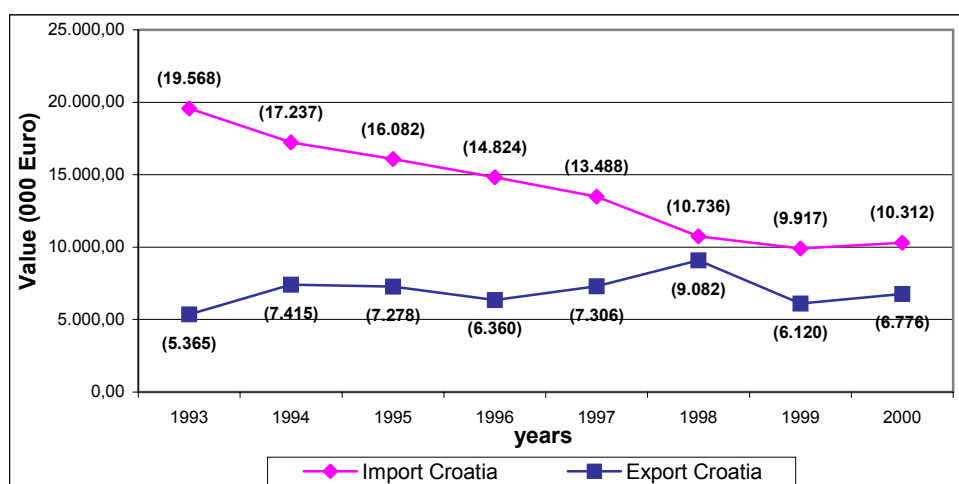


Figure 18. Italy, Trade relations with Croatia (value in 000 Euros). Source: ISMEA data base.

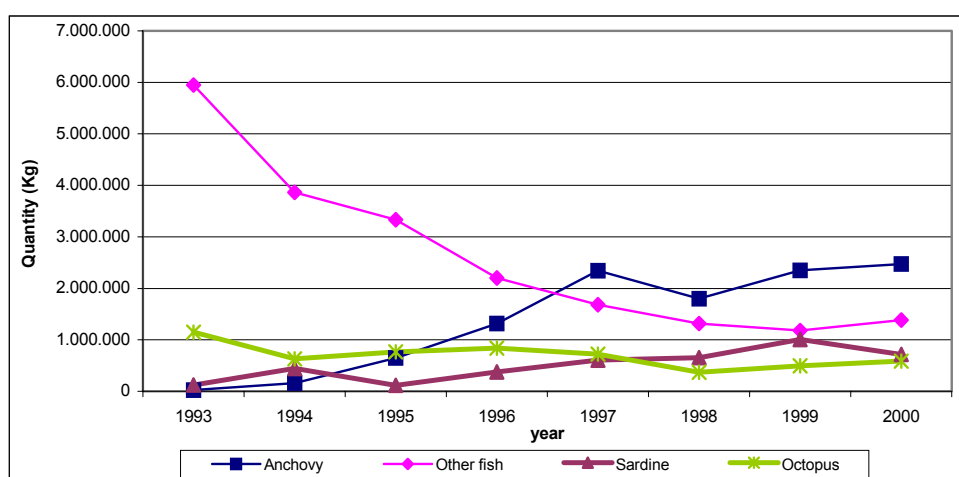


Figure 19. Imports from Croatia: most traded fish species in Italy (quantity in kg). Source: ISMEA data base.

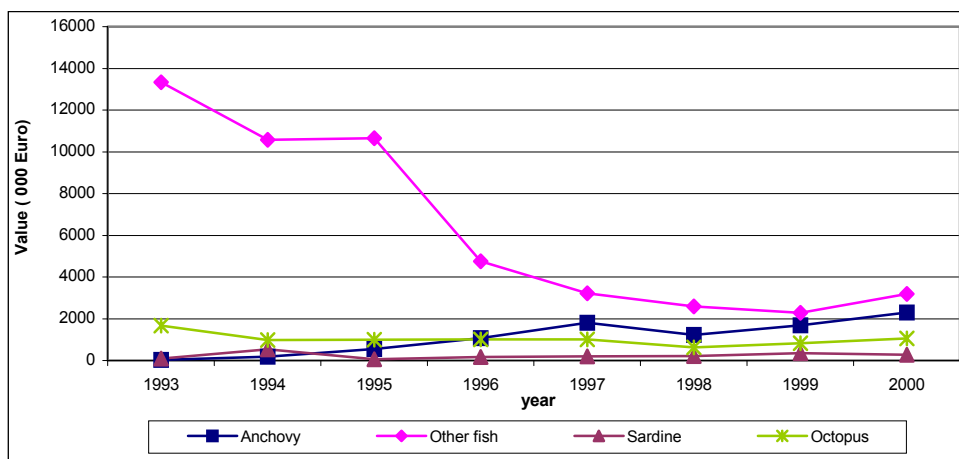


Figure 20. Imports from Croatia: most traded fish species in Italy (value in 000 euros). Source: ISMEA database.

Table 8. Exports to Adriatic countries in volume (tons).

Countries									% var. 1993-
	1993	1994	1995	1996	1997	1998	1999	2000	2000
Croatia	4,677.84	4,237.08	3,243.30	2,697.49	2,737.19	3,656.23	2,701.05	3,607.61	-22.9%
Albania*	44.63	48.52	216.60	893.41	1,554.89	1,778.76	2,313.81	2,138.64	
Slovenia	1,683.00	2,099.89	2,291.68	2,242.04	1,554.89	2,077.18	2,041.11	1,870.12	11.1%
Total	6,405.47	6,385.49	5,751.58	5,832.94	5,846.97	7,512.16	7,055.97	7,616.37	18.9%

Source: ISMEA

\*Data referring to exports to Albania are considered in terms of percentage variations starting from the year 1997.

Exports to Adriatic countries in value (000 Euros)

Countries									% var. 1993-
	1993	1994	1995	1996	1997	1998	1999	2000	2000
Croatia	5,364.83	7,415.16	7,278.39	6,359.61	7,306.27	9,082.79	6,120.26	6,776.46	26.3%
Albania*	37.28	74.07	247.16	949.99	1,420.81	1,791.21	2,270.70	1,867.27	
Slovenia	3,591.34	6,185.68	7,544.93	8,325.98	1,420.81	9,906.46	9,840.37	9,923.71	176.3%
Total	8,993.45	13,674.91	15,070.48	15,635.58	10,147.89	20,780.46	18,231.33	18,567.44	106.5%

Source: ISMEA



As for the most traded fish species, the most interesting fish categories within exports from Italy to Croatia are “fishmeal” and “tuna fish”. The category of “other fish” includes the most valuable fish species from a commercial point of view; as for this category, Italian exports to Croatia are rather stable in terms of quantities, yet they have registered a decrease in terms of value.

As for tuna fish, the trend of Italian exports is positive; Croatian demand for this kind of product is growing and the following section will show that such a growth is even more remarkable in the case of Slovenian demand.

As to the other categories of fish products coming from Croatia on the Italian markets, sea breams and European sea basses are not particularly relevant in terms of quantities or overall value. However the following Figure are worth observing, because sea bream and European sea bass are the also two major aquaculture fish species coming to Italy from Croatia and are therefore particularly interesting to examine, e.g. with reference to Italian exports of fishmeal (Figure 21, 22, 23 and 24).

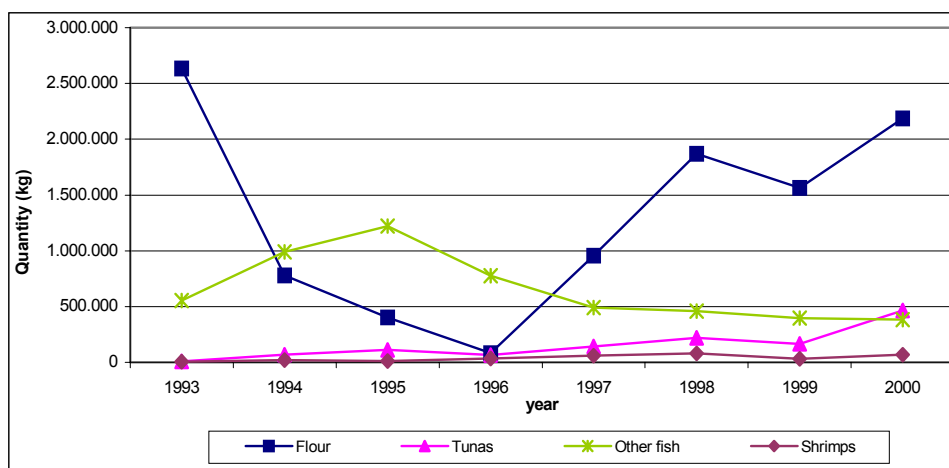


Figure 21. Exports to Croatia: most traded fish species from Italy to Croatia (quantity in kg). Source: ISMEA database.

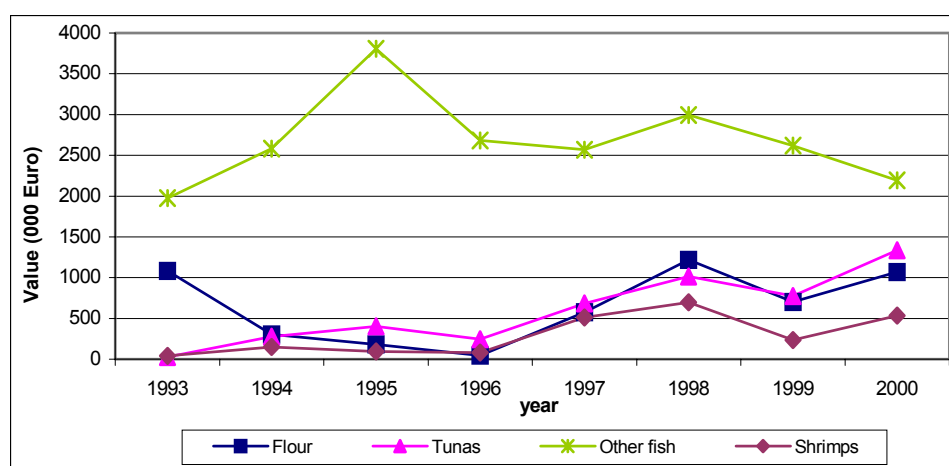


Figure 22. Exports to Croatia: most traded fish species from Italy to Croatia (value in 000 euros). Source: ISMEA database.

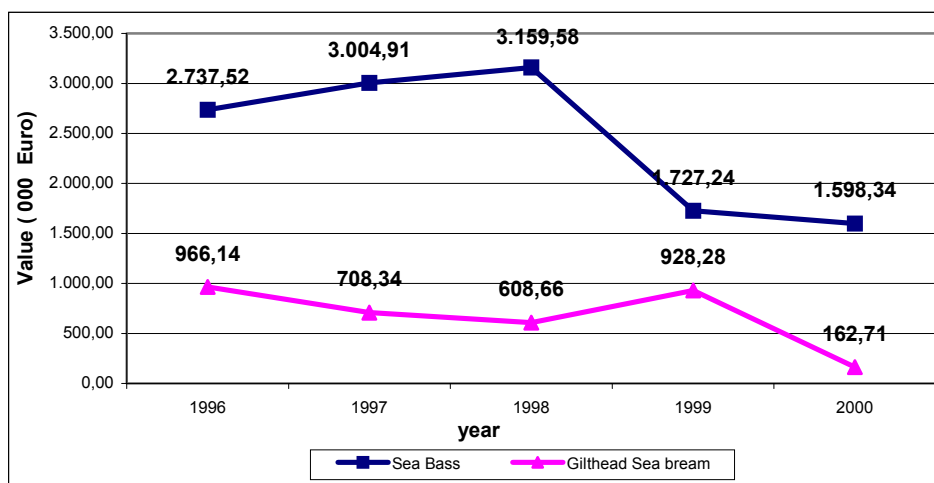


Figure 23. Imports from Croatia: comparison between the most traded fish species in Italy, which are most suitable for aquaculture (quantity in kg). Source: ISMEA database.

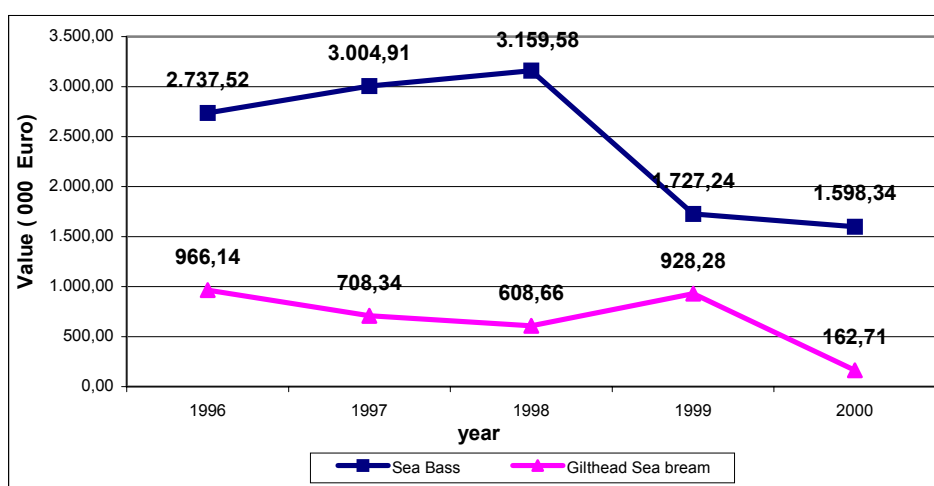


Figure 24. Imports from Croatia: comparison between the most traded fish species in Italy, which are most suitable for aquaculture (value in 000 euros). Source: ISMEA database.

## 9.2 Italy – Albania

In absolute terms, Italian exports to Albania showed a positive trend until 1999. In 2000 an inversion of the trend was registered because of the decline in exports of small pelagics, which was not counterbalanced, either in value or in quantities, by the increase in the exports of “other fish”. Imports from Albania also registered an increasing trend. It should be noted that in 1994 an opposite trend was registered with reference to price variations as against the variations in imported quantities, whereas imported volumes and import values have shown the same trend throughout the whole period examined. The following Figures (Figures 25, 26, 27, 28, 29 and 30) show the trends described above. In the period examined, the substantial increase in imports of “anchovies and European anchovies” has determined a positive import trend, in terms of both quantity and value, in spite of the decreasing trend registered by the category of “other fish”.

Italian exports to Albania show that the “anchovies and European anchovies” species account for almost all fish quantities exchanged between the countries, both as imports and exports.

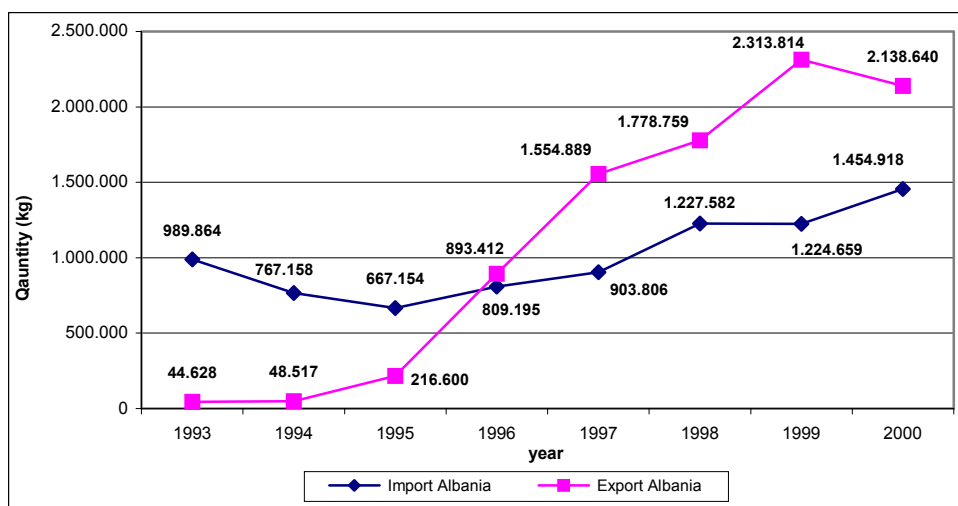


Figure 25. Italy, Trade relations with Albania (quantity in kg). Source: ISMEA database.

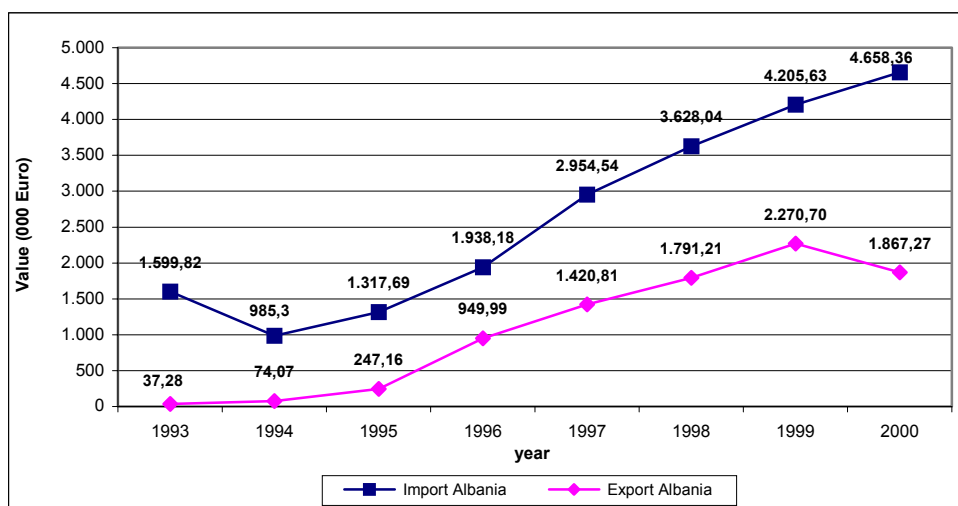


Figure 26. Italy, Trade relations with Albania (value in 000 euros). Source: ISMEA database.

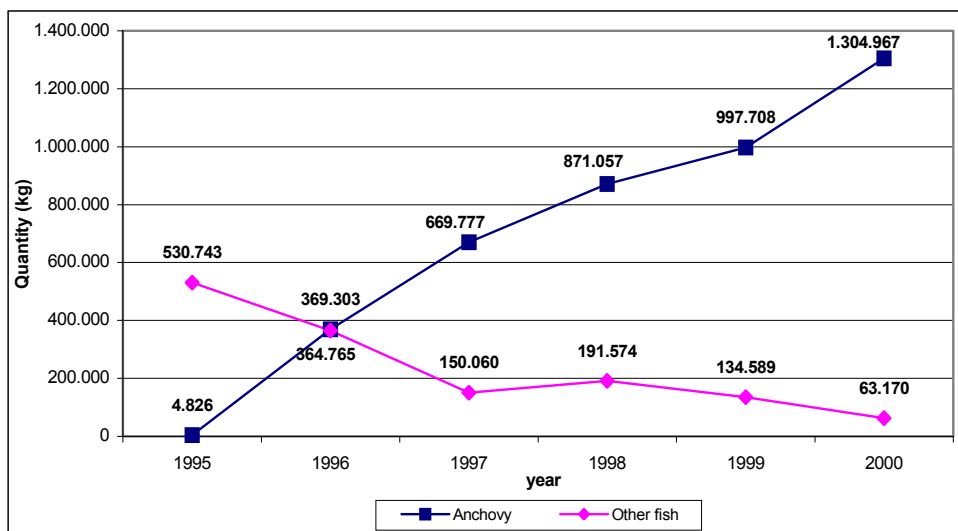


Figure 27. Imports from Albania: most traded fish species in Italy (quantity in kg). Source: ISMEA database.

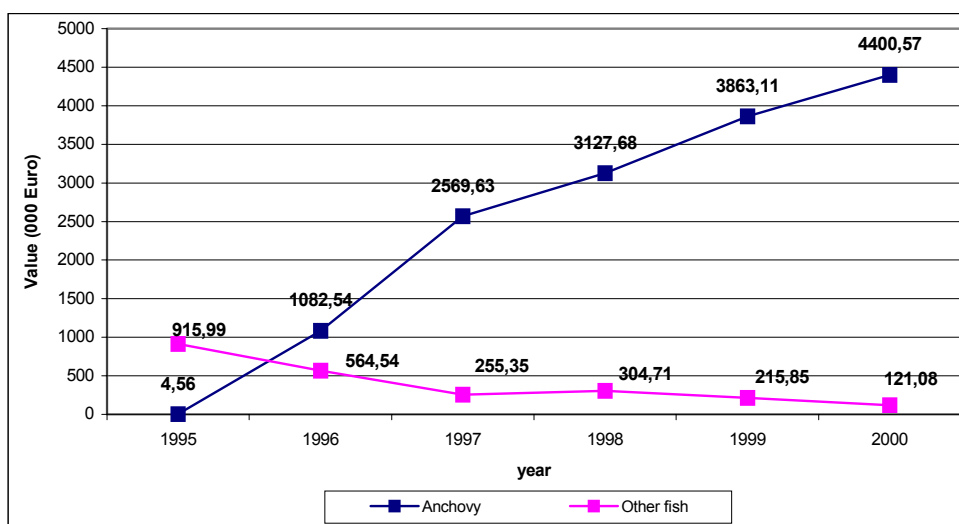


Figure 28. Imports from Albania: most traded fish species in Italy (value in 000 euros). Source: ISMEA database.

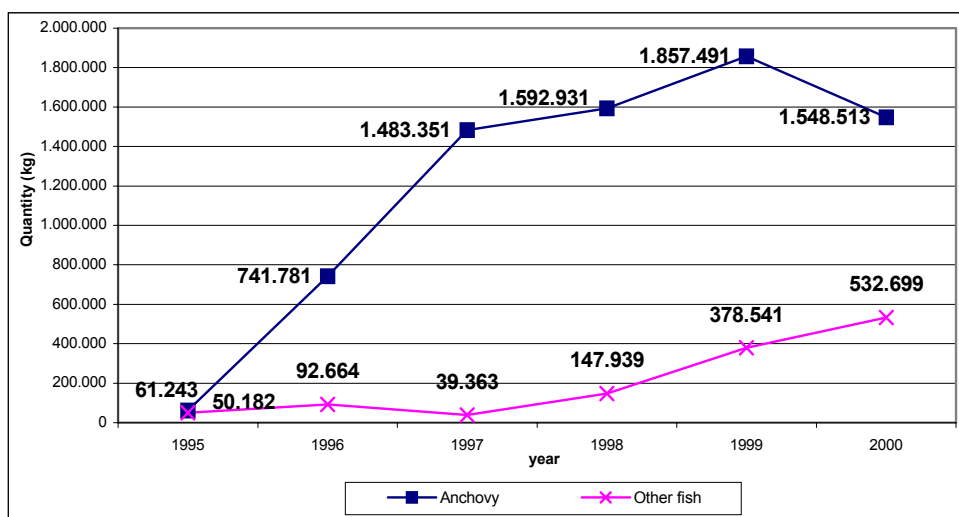


Figure 29. Exports to Albania: most traded fish species from Italy to Albania (quantity in kg). Source: ISMEA database.

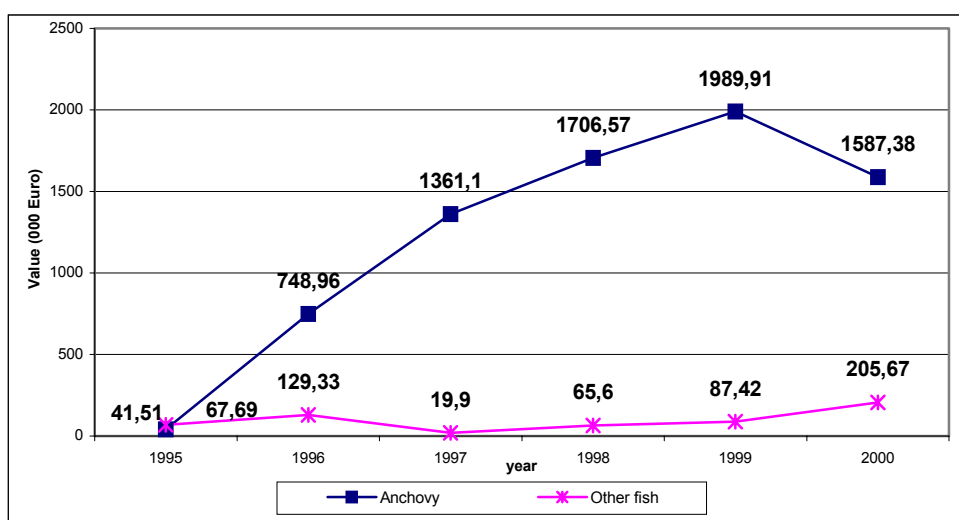


Figure 30. Exports to Albania: most traded fish species from Italy to Albania (value in 000 euros). Source: ISMEA database.

### 9.3 Italy – Slovenia

The study of import/export data between Italy and Slovenia shows how the most interesting subjects of analysis refer to Italian exports. In this respect Slovenia is taking on an increasingly important role for our country, also thanks to its close geographical position. Figure 27 and 28 show the composition of Italian fish exports towards Slovenia. Tuna fish whose trend, in both quantity and value, has steadily grown over the years considered mainly composes these exports.

This category is followed by group of “other fish” in the various species, cods included, whereas common squids, over 700 tons of which were exported in 1993, account for a very modest share of exports’ entire value in 2000. On the whole Italy exported almost 1800 tons for a total of about 10 million euros in the year 2000. Within the framework of Adriatic commerce Slovenia is a very significant partner, if we consider the country’s demand for Italian fish products; yet this is not the case for Slovenian supply, probably owing to the country’s few kilometres of coast.

The lack of data for the whole period examined and their availability for the year 2000 alone allow us to sum up the information on Italian imports to Slovenia as shown in Table 8. Although exports increased by 11% as against 1993, it is yet worth noting that they registered a negative variation in comparison to the two-year period 1998-99. Statistical data indicate a fall in exports both in terms of quantities and of value as against 1997.

This is probably to be attributed to the many years of war. As for the characteristics of exported products, Figures 29 and 30 highlight the total lack of pelagics to the advantage of species like common squid, Norway lobster, tuna fish and other fish, notably demersal species.

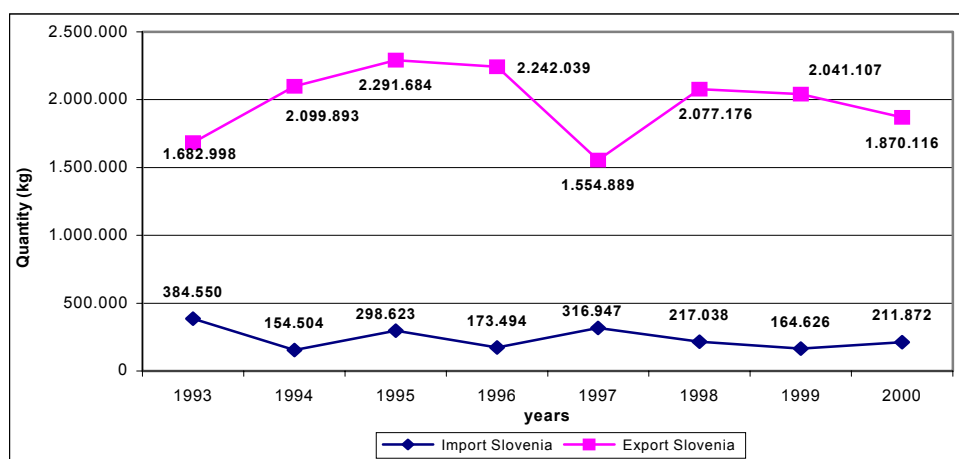


Figure 31. Italy, Trade relations with Slovenia (quantity in kg). Source: ISMEA database.

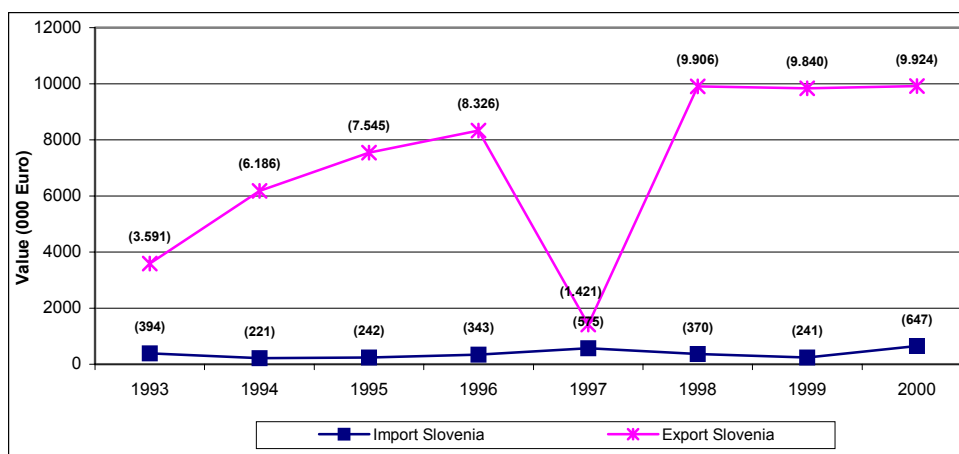


Figure 32. Italy, Trade relations with Slovenia (value in 000 euros). Source: ISMEA database.

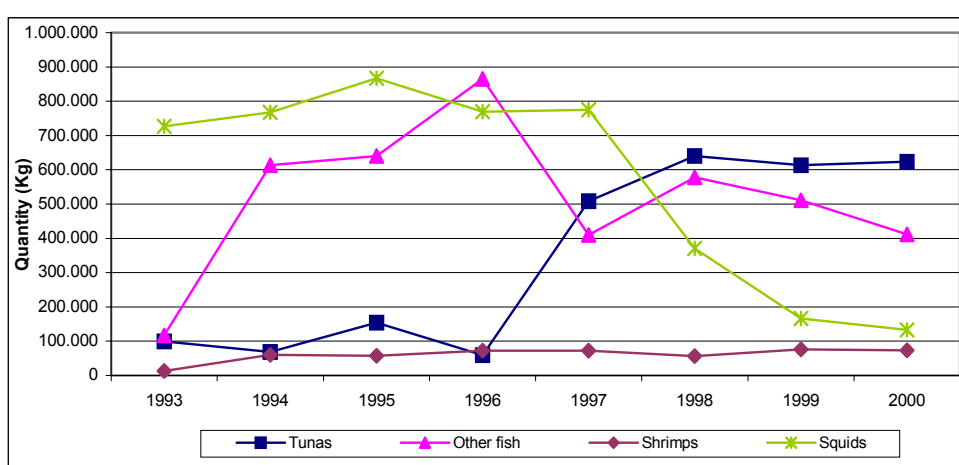


Figure 33. Exports to Slovenia: most traded fish species from Italy to Slovenia (quantity in kg). Source: ISMEA database.

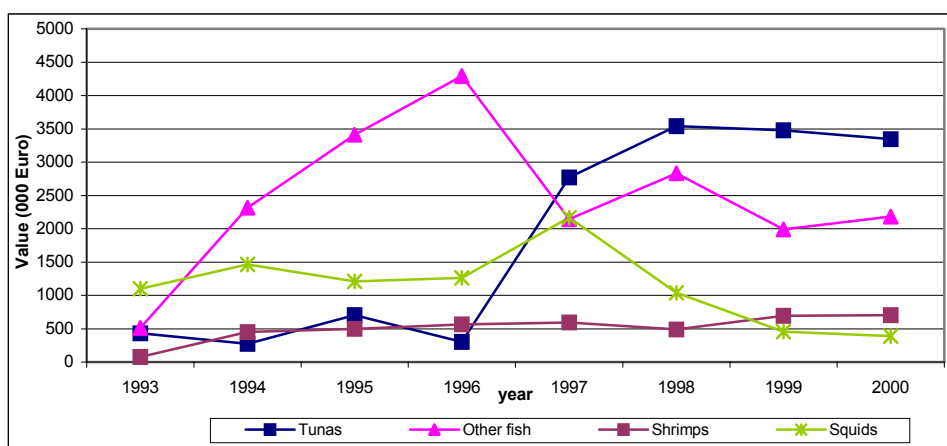


Figure 34. Exports to Slovenia: most traded fish species from Italy to Slovenia (value in 000 euros). Source: ISMEA database.

Table 9 – Imports from Slovenia: most traded fish species from Slovenia to Italy in 2000. Source: ISMEA database.

Species	Kg	000 euros	% of total imports	
<b>Tuna</b>	84.829	455,42	39,84	70,41
<b>Anchovy</b>	53.406	36,04	25,2	5,57
<b>Octopus</b>	21.564	32,48	10,17	5,02
<b>Cuttlefish</b>	15.504	24,92	7,31	3,85
<b>Other fish</b>	13.388	29,4	6,31	4,54
<b>Sardine</b>	7.714	8,09	3,64	1,25
<b>Total imports</b>	<b>211.872</b>	<b>646,75</b>	<b>100</b>	<b>100</b>

## 10. Conclusions

The objective of this study was to describe the main features of the Italian fish market – production, consumption trends, dynamics of sale prices, imports and exports’ structure, fish products’ trade in the Adriatic basin – in order to show the major trends of the sector, whose contribution is known to be scarcely relevant at a macro-economic level, but can be extremely important at a local level.

After a first phase of expansion, since the mid-1980s the supply of fish products has registered a decreasing trend, bringing the production of the latest years back to the same levels of the early 1950s. The gradual decline in quantities is linked to environmental degradation, but also and especially to the excessive exploitation of resources. The development of aquaculture plays a particularly important role; in the 1990s the sector increased its physical productions by over 50% and doubled their value. Aquaculture is estimated to be the fisheries sector’s productive area with the greatest growth potential. This is thanks to the fact that aquaculture’s productive processes can be carried out leaving, to a large extent, environmental constraints aside and therefore with methods which are much more similar to those adopted by the manufacturing system. Moreover, aquaculture production techniques allow full control over environmental conditions and hence the possibility to obtain a safe product from a qualitative point of view.

The division of supply into over 800 landing ports, the organizational and functioning methods of the trade and distribution system, as well as market globalisation lead to an unstable and fragmented price system both from a temporal and spatial point of view, which contributes to a large extent to limit the companies’ decision-making and thus slows down the process of modernization in the sector.

Consumption registers an increasing trend and, consistently with the indications provided by the main economic doctrine, the growth in per-capita incomes corresponds to the replacement of “poor” products with “rich” ones. In this way consumers’ preferences are more directed towards fresh products and the most valuable species.

Consumption increase and the progressive decline in production, which is only partly counterbalanced by aquaculture development, are largely supported by imports. The rate of

self-provision has decreased over the last few years and stabilized around 50%. In line with the eating preferences of Italian consumers, imports mainly refer to species whose domestic production is in deficit or less competitive in comparison to foreign productions. Italy's main trading partners are the countries of the European Union, as far as both export and import markets are concerned.

Finally, trade within the Adriatic basin was also considered. This was done because of the important role played by Adriatic fisheries, providing the largest quantity of Italian fish products, of the relevance of commercial exchanges with Adriatic coastal countries, as well as of the problems linked to the use of shared resources and the need to identify processes of fisheries joint management within the Adriatic basin. The brief data referring to the percentage variation of trade between Italy and the other Adriatic coastal countries show a reduction in the overall traded quantities in the period between 1993 and 2000. This is to be attributed, in particular, to a contraction in the trade relations with Croatia, in terms of both quantity and value, which alone make up for almost half of the Italian trade with Adriatic countries. Conversely, trade with the other two Adriatic partners is increasing. In the light of the trade relations that are being established over time, it is believed that a joint strategy for the management of Adriatic resources should be envisaged; such a strategy should be able to detect the peculiarities of Adriatic productions, mainly consisting of fresh products, and guarantee for them to be well recognizable among consumers, who are too often influenced by the asymmetric information on the supply of products imported from non EU countries (Adriatic countries excluded) with qualitative features that are very different from those of local products. Economic theories suggest that, similarly to other agricultural products or commodities, fish products are also subject to price fluctuations in the short and long run. This is due to quantities that are in surplus or deficit in comparison to the predicted normal value, as well as to the essentially rigid demand, which causes prices to fluctuate more than proportionally in case of even small variations of the quantities offered.

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