MASMANAP country report: Italy

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in

Paquotte P. (ed.), Mariojouls C. (ed.), Young J. (ed.).
Seafood market studies for the introduction of new aquaculture products

Zaragoza : CIHEAM
Cahiers Options Méditerranéennes; n. 59

2002
pages 197-222

MASMANAP country report: Italy

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SUMMARY – In Italy fish represents an important component of the food supply chain. Several factors determine the developments in the fishery sector. The biological limitations on marine fish stocks are a major constraint on the development of the fisheries sector, although they can be somewhat counterbalanced by increasing the fishing capacity, by technological developments in harvesting and transport, and the development of aquaculture. While supply is limited by biological constraints, demand for fish and fish products by consumers continues to rise. This demand is influenced by human population levels, their eating habits, available disposable income, and fish prices. Imported species from aquaculture such as seabass, turbot, seabream or salmon are also consumed in increasing amounts in Italy. Consumption of value-added products is growing, but the Italian preference is still for the fresh natural products. Data show that the Italian market can still develop: the data indicate that around 51% of families consume fish at least once a week; only 2% reported they never eat fish. Average consumption of seafood is about 2 kg monthly per capita.

Key words: Italy, fishery, aquaculture, seafood, supply, consumption.

RESUME – *"Rapport national dans le cadre de MASMANAP : Italie". En Italie le poisson représente une composante importante de la chaîne d'approvisionnement alimentaire. Plusieurs facteurs interviennent dans le développement du secteur de la pêche. Les limitations biologiques des stocks de poissons marins sont une contrainte majeure pour le développement du secteur de la pêche, bien qu'elles puissent être dans une certaine mesure contrebalancées par une augmentation de capacité de la pêche, par les progrès technologiques concernant la production et le transport, et par le développement de l'aquaculture. Bien que l'approvisionnement soit limité par les contraintes biologiques, la demande de poisson et de produits à base de poisson émanant des consommateurs ne cesse d'augmenter. Cette demande est influencée par les niveaux de population humaine, leurs habitudes alimentaires, le revenu disponible à consacrer, et le prix du poisson. Les espèces aquacoles importées, comme le bar, le turbot, la daurade et le saumon, sont également de plus en plus consommées en Italie. La consommation de produits à valeur ajoutée s'accroît, mais les préférences des Italiens portent encore sur les produits frais et naturels. Les chiffres montrent que le marché italien peut encore se développer : les données indiquent qu'environ 51% des familles consomment du poisson au moins une fois par semaine ; et que seulement 2% déclarent ne jamais consommer de poisson. La consommation moyenne d'aliments de la mer est d'environ 2 kg par mois et par habitant.*

Mots-clés : *Italie, pêche, aquaculture, produits de la mer, offre, consommation.*

Statistical methodology evaluation

Primary source of official statistics

The Ministry of Agriculture and Forestry Policy is responsible for the production of data on catches and prices and fleet. The latter are based on the Fleet Licence Archive, while the former are based on the economic parameters monitoring system realised by IREPA (Economic Research Institute for Fishing and Aquaculture).

Non-official national source

The following may be considered "non-official" sources of statistics catches and landings and respond to current use of statistical information more than the assessment of the data itself:

(i) IREPA onlus (Economic Research Institute for Fishing and Aquaculture). Beside data produced on catches and prices on behalf of the Ministry of Agriculture and Forestry Policy, IREPA produces a set of statistics covering the whole economic activity of the industry operating in the Mediterranean. The system is based on a statistical sample based on the continuous monitoring of the fleet.

(ii) ISMEA data (Institute of Agricultural Markets). ISMEA collects and disseminates statistics and data produced by official and non-official sources.

(iii) FEDERPESCA data (National Federation of Fishing Enterprises). FEDERPESCA is the industry organisation with a large participation of Ocean going fleet and provides production and economic data on this segment of the fleet.

(iv) API data (Italian Pisciculture Association). API provides data on the productive structure of the sector, in particular of its associated firms.

(v) ICRAM data (Central Institute for Applied Scientific and Technological Sea Research).

(vi) ANCIT data (National Association for Fish and Tuna Trap Conservation). ANCIT disseminates official and non-official statistics concerning fish processing industry.

(vii) IIAS data (Italian Frozen Food Institute). IIAS produces and disseminates data on fresh and processed frozen fish food. Obviously the secondary sources of statistics of fishery output listed above do not preclude other sources of statistics on Mediterranean catches.

A long series of studies carried out and published by about 260 centres, research institutes and university institutes and principally, the research promoted and financed by the Ministry of Agricultural and Forestry Policy-General Directorate for Fisheries as part of its three-year plan for the sector, has processed quantitative and qualitative data on catches and landings. However, these studies lack the organic unity and inter-temporality necessary for them to be used adequately as a basis for forecasting. The latter biological studies are primarily linked with a better assessment of the current and transitory situation of particular resources and/or particular activities and/or particular geographical realities. Assessment of the real and total phenomenon of Italian sea product catches, as well as its relative trends, is limited to few non-official sources which will be mentioned.

Nielsen database for seafood home consumption monitoring

The main available data concerning the final seafood consumption and the characteristics of the demand come from the Nielsen panel. The Nielsen panel survey is the main source of quantitative data that exists concerning Italian seafood consumption and the only one available for the analysis on the distribution channels and consumer profiles.

Methodological aspects of Nielsen database: from 1997 Nielsen is carrying on a survey on a panel of 6000 families, representing all Italian families (20,627,282 unit), aiming to monitor the trend of the domestic consumption of approximately 250 seafood products. In particular, the sample is articulated in three groups: (i) 2500 families with home scanner and personal computer (connected in via data transmission with the Nielsen); (ii) 2500 families with home scanner; and (iii) families over 65 years, transmitting data every 2 weeks when purchasing.

In the Nielsen panel, the family is active part of the survey process through the technology home scanning. The family records and transmits, weekly, directly via data transmission, the relative information of each action of purchase (with the exception of the 1000 families over 65 years). In this way, the single person who makes the action purchase for the family gives the information available to level of code EAN through optical reader. This system is therefore capable to collect a relevant amount of data relating to each single action of purchase: date of purchase, people purchaser (of the familiar nucleus), acquired amount, source of purchase, price and promotions of purchase. Minimal unit of sampling is the "micro-zone", constituted from homogenous families, that means with similar demographic features and spending power, as resulting on the basis of last census; the selection of the commune is based not only the amplitude, but also on variables depending on the level of urbanisation and distributive concentration parameters of the population.

On the basis of the collected data it is possible to estimate the behaviour of family's purchase in relation to:

(i) Geographic area, that is the 4 areas Nielsen (Northwest, Northeast, Centre, South).

(ii) Amplitude of the family (families mono-members, 2 members, 3 members, 4 members, 5 members and more).

(iii) The class of age of the chief buyer (until 34 years, from 35 to 44 years, 45 to 54 years, 55 to 64 years, more 64 years).

(iv) Income level, with reference to per capita monthly income, that is to say the total perceived from the family divided for the number of the members (until 250 €, between 250 and 400 €, 400 and 600, over 600 €).

(v) The sources of purchase (super and hyper, discount, traditional foods, specialist, fish mongers, other stores, cash and carry, business, own production).

The survey is so capable to monitor all the fish purchases of the Italian families. In particular, the gathered information regard: fresh fish, frozen and chilled by measure not in package, chilled in packaging, preserved, salted, dry and smoked. It has to be said that the survey considers only purchase for home, it does not consider outside purchase, outside consumption (hospital, tourism, restaurants, etc.) which have a great relevance in terms of fish total consumption.

Production and apparent consumption of aquatic food

Overview of the total aquatic food supply in Italy

Fish represent an important component of the food supply for Italian population. Table 1 shows national production of fishery and aquaculture in Italy in last ten years; it is possible to look a decrease of fishery's performance and an explosive increase of fish-farming production, in particular for seabream and seabass. In marine fishery we have a decrease of Oceanic catches and an increase of Mediterranean fishery.

Table 1. Total national production (catches and aquaculture): 1989-1998 (source: ISTAT*, ICRAM**)

Type of fishery	Production (t)									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
A-Total marine fishery*	360,962	336,940	368,282	355,358	356,545	353,490	358,614	332,599	309,186	291,625
B-Aquaculture**	47,069	86,110	85,084	75,888	75,965	82,716	62,800	61,550	82,368	65,500
Seabass	1,100	1,050	1,538	1,826	2,466	2,850	3,600	3,800	4,600	5,850
Seabream	850	850	965	1,070	1,527	1,850	3,200	3,650	3,900	5,500
European eel	4,500	3,700	3,585	3,310	3,080	3,000	3,000	3,000	3,100	3,150
Mullets	2,500	3,000	2,880	2,942	2,892	2,900	3,000	3,100	2,900	3,000
Trout	31,000	35,000	38,000	40,000	42,000	45,000	50,000	48,000	51,000	48,000
Others	7,119	42,510	38,116	26,740	24,000	27,116	0	0	16,868	0
Grand total (A+B)	408,031	423,050	453,366	431,246	432,510	436,206	421,414	394,149	391,554	357,125

The data in Table 1 are underestimated, for this reason we look at Fig. 1 for understanding the reality of the Italian production fishery in 1998.

Several factors determine developments in the fishery sector. The biological limitations on marine fish stocks are a major constraint on fisheries sector development, although they can be somewhat counterbalanced by increases in fishing capacity, technological developments in harvesting and transport, and the development of aquaculture. While supply in the sector is limited by biological supply constraints, demand for fish and fish products by consumers continues to rise. This demand is influenced by human population levels, their eating habits, available disposable income, and fish prices.

Italy, with 58 million of inhabitants, is a major market for seafood products. The Italian fish market has been growing constantly during the last 18 years: the per capita consumption in 1998 was 23.0 kg, while in 1988 only 15 kg. The per capita consumption remained more or less constant throughout the 1997-1998 (Table 2). The majority (71.6%) of fish production comes from capture fisheries – the capture of fish in the natural environment – and the remained from aquaculture farms. Most of the increase in production over the last ten years came from aquaculture, with the share of aquaculture in total Italian fisheries production increased from 9.4% in 1988 (ISTAT data) to 18.3% in 1998 (according ISTAT data).

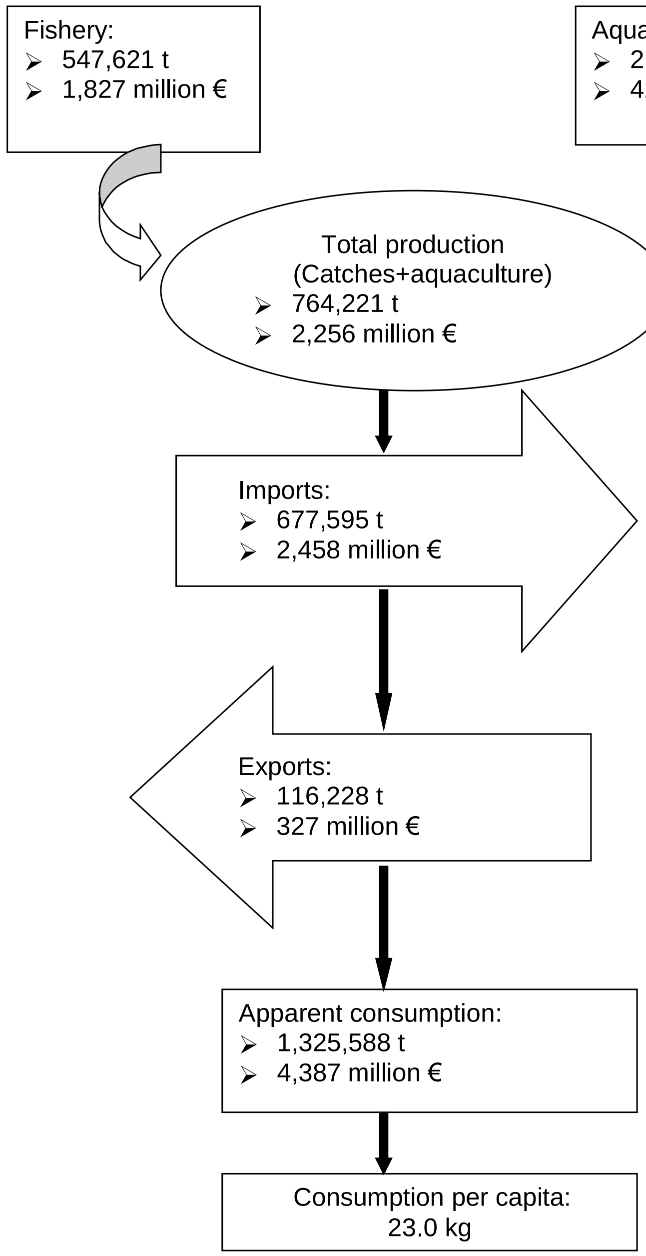

Fig.1. Production, import, export and apparent consumption in Italy in 1998 (volume and value) [source: ISMEA on ISTAT, API, IREPA and ICRAM data (2000)].

During 1998 total production increased about +2.2%: pisciculture had a positive trend about +7% and mollusc culture about +0.5%; but Italian production satisfies only about 50% of domestic supply. Consequently, the internal supply was satisfied by imported goods, thus registering a positive trend in imports (+6.3% in 1998 comparison with 1997, Table 2). The export decreased in comparison with 1997, more in volume (–4%) than in value (–1.4%) (Tables 2 and 3).

Table 2. Comparison of production fishery data (1997-1999) (volume in tonnes) [source: Elaboration on different sources (API, ICRAM, IREPA, etc.)]

	1997	1998	1999
A- Fishery	535,784	547,621	463,400
B- Aquaculture	211,700	216,600	217,360
C- Total production (A+B)	747,484	764,221	680,760
D- Import	637,673	677,595	726,185
E- Export	121,129	116,228	116,068
F- Apparent consumption	1,264,028	1,325,588	1,290,877
G- Per capita consumption (kg)	22.0	23.0	22.39

Table 3. Comparison of production fishery data (1997-1999) (value in million €) [source: Elaboration on different sources (API, ICRAM, IREPA, etc.)]

	1997	1998	1999
A- Fishery	1,786	1,827	1,587
B- Aquaculture	356	429	437
C- Total production (A+B)	2,142	2,256	2,024
D- Import	2,203	2,458	2,512
E- Export	332	327	332
F- Apparent consumption (C+D-E)	4,012	4,387	4,204

Between 1997-1998 aquaculture production did not growth in volume (Table 2) (the share of aquaculture on total production in 1997 was 28.32%, while in 1998 it was 28.34%), while it increased in value (Table 3) (in 1997 the share was 16.61%, in 1998 it was 19.01%). This data shows an increasing of fish-farm's performance in recent years and in particular an increasing of high-value commercial species. Italian fish-farm production has a positive impact on EU aquaculture production, too. In 1998 the increasing regarded "mussel culture" and in particular "venericoltura" (in 1998 the production in "venericoltura" was 48,000 tonnes, 20% more than production in 1997). The production of mussels is decreased of –2.9%; but the fish-culture production was constant between 1997-1998. ISMEA collects and disseminates statistics and data produced by official and non-official source (IREPA onlus, ICRAM, API, FEDERPESCA and some elaboration on Nielsen database, too).

Recent increments in local aquaculture production of fin-fish and bivalves have not been large enough to balance the stagnating wild catch in the Mediterranean Sea, for this reason Italy had to cover the rise in demand with increasing import from abroad, making it the world's fifth largest importer of seafood products in 1996.

The structure of the production from fisheries and aquaculture in Italy (Tables 4-8)

Aquaculture production in Italy has been growing steadily over the last decade and reached almost 211,000 tonnes in 1998. The majority of the output is represented by mussels and carpet shell which together account 71% by volume; farming of high-value species such as sea-bass and sea-bream have also been rising quickly. The Italian aquaculture is diversified, in order to different interested geographic areas.

The total surface of the extensive aquaculture in the last ten years marked a positive trend, but in last four years the production remained stable, registering a low decrease of sea bass production and a small increase of mullet production, in any case the productivity per unity of surface was stable. Regarding intensive technology, there is a higher number of sea bass and sea bream fish farms units, due to the realisation of mariculture plants in cages.

Table 4. Italian fish farms in 1998 (source: ICRAM/API, 1999)

Species	Intensive technology: Land based farms (No. units)	Intensive technology: Cages (No. units)	Intensive technology: Hatcheries (No. units)	Extensive technology (ha)
Seabass, seabream (+ other marine species)	65	19	15	
Eel	74	0	7	
Trout	589		10	
Total	728	19	32	63,485

Table 5. Share of production by capture and aquaculture in volume and value in 1997 (source: ISMEA, IREPA, FEDERPESCA, ICRAM, API)

	Volume (%)	Value (%)
Aquaculture (molluscs)	19.1	6.3
Aquaculture (fishes)	9.2	10.3
Oceanic catches	6.1	5.8
Internal catches	59.1	70.9
Tuna	1.3	1.3
Swordfish	1.6	4.7
Other fresh water molluscs	3.6	0.7

Table 6. Italian seafood production (1998) – Volume (source: IREPA*;FEDERPESCA**; ICRAM***, API)

	1997 (t)	1998 (t)	% 98-97
A- Fishery	535,784	547,621	2.2
Mediterranean fishery*	462,959	465,254	0.5
Oceanic fishery**	45,825	52,367	14.3
B- Aquaculture***	211,700	216,600	2.3
Fish	68,700	68,600	–0.1
Mussel	143,000	148,000	3.5
Grand total production	747,484	764,221	2.2

Table 7. Italian seafood production (1998) – Value (source: IREPA*;FEDERPESCA**; ICRAM***, API)

	1997 (thousand €)	1998 (thousand €)	% 98-97
A- Fishery	1,785, 907	1,802,093	2.3
Mediterranean fishery*	1,647,497	1,656,793	0.6
Oceanic fishery**	124,466	153,387	23.1
B- Aquaculture***	355,322	429,175	20.7
Fish	219,494	273,205	24.3
Mussel	135,828	155,969	14.8
Grand total production	4,268,514	4,470,622	5.4

Table 8. Italian seafood production (1998) – Average price in €/kg (source: IREPA*;FEDERPESCA**; ICRAM***, API)

	1997 (€/kg)	1998 (€/kg)	% 98-97
A- Fishery	3.33	3.34	0.1
Mediterranean fishery*	3.56	3.57	0.1
Oceanic fishery**	2.72	2.92	7.7
B- Aquaculture***	1.68	1.98	18.0
Fish	3.20	3.98	24.5
Mussel	0.95	1.05	10.9
Grand total production	2.86	2.95	3.0

The reason of this performance is due firstly to the diffusion of frozen and prepared new products, then to other factors, like the habit to eat in restaurants, the development of fish farmed and the new packaging techniques: all these reasons resulted important for the development of fresh seafood products.

Aquaculture production: main farmed fish (1989-1998)

The main species produced in Italy are: sea-bass, sea-bream, eel, mullet and trout. Table 9 shows the national trend of their production in the last ten years. Italian production refers both to intensive and extensive production facilities.

Table 9. Aquaculture production (t) of main species (1989-1998) (source: ICRAM data base)

Species	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Seabass	1,100	1,050	1,538	1,826	2,466	2,850	3,600	3,800	4,600	5,850
Seabream	850	850	965	1,070	1,527	1,850	3,200	3,650	3,900	5,500
Eel	4,500	3,700	3,585	3,310	3,080	3,000	3,000	3,000	3,100	3,150
Mullet	2,500	3,000	2,880	2,942	2,892	2,900	3,000	3,100	2,900	3,000
Trout	31,000	35,000	38,000	40,000	42,000	45,000	50,000	48,000	51,000	48,000

The high-value species of aquaculture production are seabass and seabream; Italian production of these valuable species increased like in most other Mediterranean countries. However, lack of adequate legislation for new aquaculture activities in Italy forced investors to start production in other countries such as Greece, Spain and Turkey; imports and consumption have increased much faster respect to Italy's own production. Only in the last five years have Italian producers managed to increase output significantly, but imports are still dominating the market.

Total production of seabass and seabream in the Mediterranean basin has increased from 8500 tonnes in 1990 to about 65,000 tonnes in 1997. Not surprisingly, demand has not been able to absorb these quantities without large reductions in price, especially in 1997. In 1998 Italy produced about 12,000 tonnes of seabream and seabass, in 1999 the production increased to13,000 tonnes[1].

Production of trout in Italy has been steadily increasing despite competition from imported fresh salmon. Lower price on salmon have led to a switch in production away from large size trout towards small, portion-sized, trout. As imported salmon are mostly available from 3-4 kg upwards, trout farmers have been able to create a niche in the smaller size. Producers have also invested heavily in filleting machinery and expanded sales of trout fillets. This strategy has been quite successful and trout consumption in Italy continues to be about double that of salmon. In the last 5 years the consumption of trout increased thanks to efficient advertising campaign (now the common trout and salmon trout are the main fresh species consumed, together with salmon).

[1]Production 1990-1999 ICRAM-API 2000.

Current prices from producers to wholesalers are around 2.06 €/kg for fresh unpigmented portion-size trout, about 2.1 € for pigmented trout and about 6.46 €/kg for fillets. Production of trout is concentrated in the North of Italy, which is also the traditional consumption area for freshwater fish.

About production by aquaculture of eel, the most important producers are concentrated in the northern regions of Veneto, Lombardy and Emilia-Romagna, but with some activity in Lazio and Pulia as well. Output has been showing a small long term decline, mostly caused by lack of juveniles, and is presently around 3000 tonnes yearly. Sales are seasonal with consumption peaks during the Christmas holidays. The product is, usually, sold live, but a small quantity goes to smokers. Italy imports as well as exports eel.

Total Italian imports

Most of the fish sold in Italy is marine fish; demand for freshwater fish is limited and concentrated to internal areas close to lakes and rivers where the local tradition of consumption of fresh-water species is strong; the composition of imports of fisheries have increased in volume about 2.8% (Table 10).

Table 10. Imports for human consumption in Italy in 1988-1998 (t) (source: ANCIT)

Year	Total aquatic products	Sea-fish 1: Pelagic	Sea-fish 2: Non pelagic	Salmonid fresh water	Shellfish	Crustaceans	Cephalopods	Others
1988	699,554	174,610	170,498	14,323	59,273	44,797	104,998	131,055
1989	739,979	205,231	186,531	16,722	48,576	43,558	93,483	145,878
1990	807,128	196,062	183,454	21,218.5	60,357	48,342	115,264	182,430
1991	797,283	195,687	114,782	26,325	71,077	53,741	136,711	198,961
1992	835,081	180,268	184,107	25,752	77,162	58,354	118,013	191,425
1993	820,454	174,552	215,053	29,480	74,075	51,148	116,679	159,466
1994	771,219	168,297	227,155	30,643	70,851	53,064	124,013	97,196
1995	843,239	175,145	212,399	29,074	84,627	52,329	132,902	156,763
1996	880,159	165,836	233,631	32,079	82,151	59,293	133,758	173,411
1997	886,563	169,637	220,843	31,732	93,360	50,785	141,593	178,613
1998	940,149	180,675	219,321	35,296	84,397	71,487	150,661	198,312

The Italian market for live fish is small with share of imports less than 1% by volume. Live fish is not part of local tradition, and Italian restaurants do not offer live fish, unless in South regions.

Italian consumption of canned seafood ranges from domestically produced or imported tuna to numerous imported specialities (Table 11). The Italian tuna processing industry is the third largest in the world after the US and Thailand (Table 12). The industry uses about 103,000 tonnes yearly of raw material (frozen tuna equivalents) of which almost all is imported (Table 13). Italy's own catch of tuna of around 7000-8000 tonnes a year is mostly high priced bluefin tuna and is consumed fresh domestically or exported to Japan.

Table 11. Domestic production of canned seafood (000 t) (1991-1998) – Volume and value (source: ANCIT)

Species	1991	1992	1993	1994	1995	1996	1997	1998
Tuna in oil	87.0	93.0	90.0	86.0	79.0	78.0	78.0	86.0
Sardines in oil	7.0	5.0	3.5	2.5	2.1	2.0	1.9	1.8
Anchovies in oil	16.5	15.5	12.0	14.0	13.0	12.5	8.0	7.8
Canned clams	2.6	2.1	2.3	2.4	2.5	2.5	2.4	2.5
Other	16.5	18.0	14.5	11.5	11.2	11.5	11.6	23
Total	129.4	133.6	122.3	116.6	107.8	106.5	101.9	121.1
Total (million €)	695	709.5	681.5	675	654	550.5	560.5	634.5

Table 12. Economic indicators of Italian tuna processing industry (1996-1997) (source: ANCIT)

	1996	1997	Var. % 97-96
Production (t)	78,000	78,000	0.0
Value (millions €)	370	377	2.0
Import (t)	23,588	30,385	28.8
Export (t)	4,974	6,322	27.1
Apparent consumption (t)	96,614	102,063	5.6
Per capita consumption (kg)	1.7	1.8	5.5
Average price (€/kg)	4.73	4.82	2.0

Table 13. Imports of canned tuna (t) (1994-1997) (source: ISMEA, ANCIT)

Exporting country	1994	1995	1996	1997
Total EU	7,428	10,837	13,808	21,978
Total no EU	2,928	7,510	9,779	8,407
Total	10,357	18,347	23,588	30,385

Italian production of canned sardines and anchovies in oil have shown a clear long term negative trend. The reason is twofold: fall in demand of a product now considered old-fashioned, and increasing competition from abroad, especially from Morocco.

Italy has also a considerable production of salted anchovies with imports coming mainly from Greece and Spain; in the last ten years Italy registered a positive trend in order to import of anchovies in oil and salted. Other canned products of which there are considerable imports are mackerel ("scomber" mackerel nei) and molluscs.

Canned molluscs include various species, but the majority are canned mussels. The major exporting country are Turkey and UK. Tuna consumption in Italy grew by 5.6 percent (volume) in 1997, with a static national production. The most important production of canned tuna in Italy, in last ten years, was in 1992 (more than 93,000 tonnes).

The long-term growth of the Italian tuna market seems to be linked to the general growth in seafood consumption and the ability of producers to invent new product varieties. Local processors have been hurt in the mid-1990's by a weak lira and rising prices of raw material; increased competition from imported brands and supermarket own labels will continue to exercise pressure on margins and further concentration in the industry is to be expected.

During 1997 Italy exported 78,000 tonnes: it was 60 percent of flow out from country. Export's performance of fishes is the best (+16.2%) in last two or three years. The main species exported are: anchovy, tuna, cod, hake and eel (as reported in next figure).

Export of fish and fishery products

During 1997 Italy exported 78,000 tonnes (Fig. 2): it was 60 percent of flow out from country. Export's performance of fishes is the best (+16.2%) in last two or three years. The main species exported are: anchovy, tuna, cod, hake and eel.

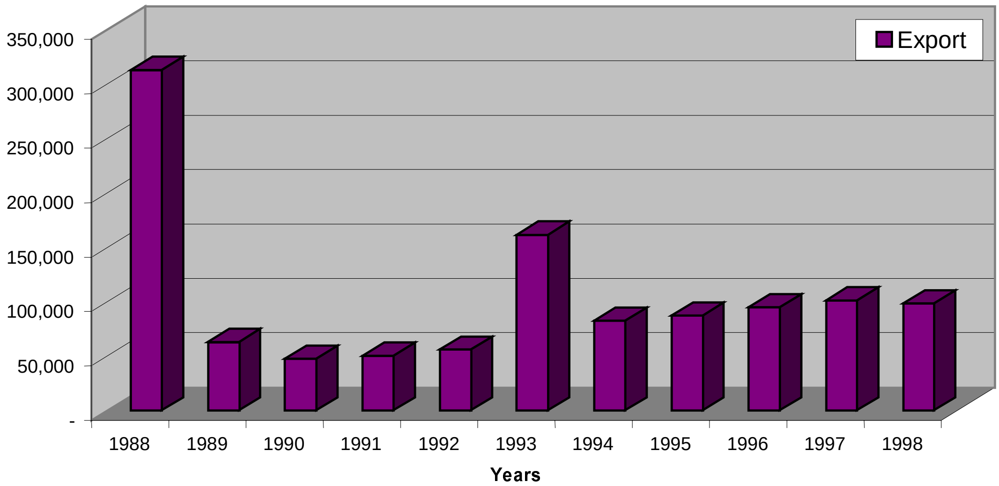

Fig. 2. Italy exports (1988-1998) (t).

National market tendencies

General information about seafood consumption and market

In year 2000, the trend of the food consumption decreased, the only item with a positive performance was the seafood products. Decrease in the demand amounts, and on contained levels more in the expense, for effect of the increase of the average price to the consumption, the other combined items are recorded for all, with rates variation more emphasise for wines (–7.1% for the amounts, –0,1% for the values); sugar, coffee (–6%, +0.2%); bread, cereals (–4.2%, –2%); meat, eggs (–3.7%, –3.4%); and oils and fats (–3.7%, –0.3%). There was a contraction in the volumes and an increase of the purchase for: vegetable, fruit (–4%, +2.9%); milk (–2.9%, +2.7%) and alcoholic drinks (–1.5%, +4.9%).

The consumption of seafood products is increased in last ten years (Table 14). The increase has been favoured from the income of the seafood products in new channels trades, ought to the affirmation of new models of consumption. The choice of the consumers is not based only on the price of the products, but on a mix of elements, like: the organoleptic characteristics of the products, their nutritional value, the level of service, the freshness and the guarantee of the quality.

Table 14. Consumption of fish in Italy. Volume indices – 1990 = 100 (source: EUROSTAT, 2000)

	1988	1989	1990	1991	1992	1993	1994	1995	1996
	98.5	99.7	100.0	101.9	101.6	100.6	100.5	98.1	97.9

About the consumption of marine fish we have to say that it is consumed in all products forms, above all pelagic and groundfish species. Cured products like dried or salted cod and smoked herring have also largely managed to hold on traditional markets.

The consumption of meat and products made up of meat are diminished remarkably in last three years, due to the BSE cases (Table 15). The negative trend in the meat consumption has made to record an increasing of the fish and products made up of fish demand. It has been recorded, moreover, one variation in the demanded preferences of species: the Italians have begun to consume species of fish not previously appreciated, as an example in some areas of the country the consumption of freshwater fish increased (trout, carp, catfish, etc.) as the consumption of products made up of fish (pre-cooked, sauce, soup, etc.).

Positive trend is recorded in the consumption of vegetables (Table 16), milk, eggs and cheeses, too (Table 17). The new food preferences of the Italians are determined from a variation of the diet and the demographic factors that characterise the country.

According to Italian food tradition, the consumption of bread and pasta are always increasing, particularly during last years (Table 18). In Italy there is the habit to eat pasta with fish, in particular with crustaceans and clams.

Table 15. Consumption of meat in Italy. Volume indices – 1990 = 100 (1988-1996) (source: EUROSTAT, 2000)

	1988	1989	1990	1991	1992	1993	1994	1995	1996
	99.7	99.9	100.0	100.0	100.1	99.7	99.4	98.0	95.6

Table 16. Consumption of fruit and vegetables in Italy. Volume indices – 1990 = 100 (Source: EUROSTAT, 2000)

	1988	1989	1990	1991	1992	1993	1994	1995	1996
	98.4	99.6	100.0	100.3	100.8	101.0	101.2	100.7	98.5

Table 17. Consumption of milk, cheese and eggs. Volume indices – 1990 = 100 (source: EUROSTAT, 2000)

ITALY	1988	1989	1990	1991	1992	1993	1994	1995	1996
	99.8	100.1	100.0	100.4	101.1	101.2	101.5	102.7	103.0

Table 18. Consumption of bread and cereals in Italy. Volume indices – 1990 = 100 (source: EUROSTAT, 2000)

ITALY	1988	1989	1990	1991	1992	1993	1994	1995	1996
	99.0	100.0	100.0	101.0	102.0	102.0	102.0	102.0	103.0

Figure 3 shows Italian's habits of food consumption: in the year 1999 only 7% of Italians prefer seafood. In the last ten years the consumption of seafood increased about 1.8%. According to FAO Globefish, in Italy 70.5% of men prefer seafood products, in comparison to 68% of women. New position of women is important for seafood consumption, in particular for preserved ones.

General information about Italian food habits and purchase for food

The setting of seafood consumption is characterised from important changes in the alimentary habits; the innovation and the safety are the main requirements that consumers demand and need.

From analysing the annual trend for geographic area, it turns out that the decrease in the domestic consumption is generalised in the national territory: Centre –4.6%; Northwest –5.2%; Northeast –4%[2]. Only exception is the South, where the question is maintained on the same levels of the previous year. The purchase registered positive variations in the South (+3.1%), stable in the North and light decrease to Centre (–0.6%). Analysing the annual dynamics for product macro-aggregates, it turns out

[2]Source: ISMEA/AcNielsen Database, 2001.

that in the South there is strong increase of the consumption of Fish (+5.6%), mainly in the last three months of the year. Contained increments are recorded for alcoholic drinks (+2%), paste and rice (+1.3%) and biscuit before breakfast and sweets (+1.1%). In decrease are oils and fats (–4.2%), meat, derive and eggs (–3.2%), wines (–5.3%) and sugar, coffee (–1.3%). Both North and the Centre showed a substantially similar attitude.

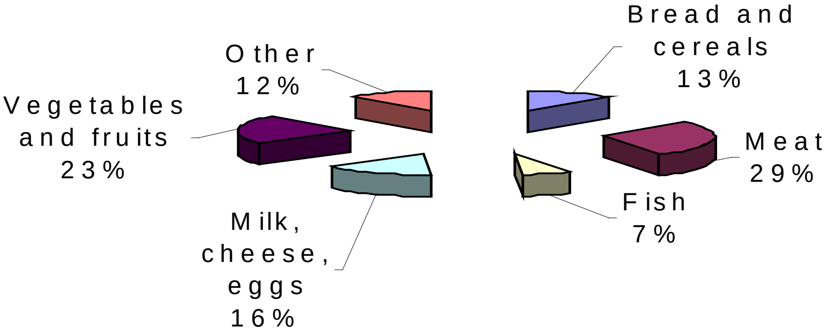

Fig. 3. Household purchase (%).

Socio-demographic factors (ageing of the population, feminine occupation, de-structuring of meal, etc.) and economic (slowing down of the rate of growth of Gross Domestic Product) have pushed the Italian families to make various choices in the household expenditure of food products. The choice has been oriented to those products with good performance in quality-price and towards seafood products with added value in terms of innovation and alimentary safety. The modern consumer has little time and prefers to purchase seafood produced with a high content of service: easy to use, short times of preparation, pre-cooked, ready plates, snack, deep freeze.

The new products were recorded in the field of the products seafood, through the offer of an increasing number of preferences in the fresh fish sector (eviscerated, cleaned up, in mono-portion, *cotolette*, rods, stickers, etc.) of the dept freeze one prepared and natural (threads, rods and stickers, shells, *cotolette*) and of the conserves and sauces made up of fish, mollusc and crustaceans.

Tables 19 and 20 show the monthly and yearly expenditure for family according to number of persons.

According to consumption data in year 2000, monthly average purchase of Italian family is around 2177.81 €, 4.3% more than year 1999 (2088.11 €). The share for food and beverage in the year 2000 decreased, in fact in 1999 it was 198.1% (399.45 € per month) and in the year 2000 it was 18.6% (404.30 € per month).

Food expenditure rose in 1998 and 1999 about 2.6% and 1.7% respectively, while in 2000, it rose more than 3% for food products in strict sense and by 5.2% for non-alcoholic beverage, consumption of which expanded further, about 4%. On the contrary, consumption of alcoholic beverages fell by 1.6%. In contrast with previous years, food products in strict sense are those which have recorded the greatest increases in average prices (1.9%) in 2000, an increase of one percentage point more than the previous year.

In the 2000 domestic purchase of fish were beyond 456,000 tonnes, for a value of 3523 million of €. The recorded increase is of 1.5% in volume and 1.2% in value regarding 1999. Currently national food consumption records a phase of economic stagnation. The average prices of the seafood products consumption decreased of the 0.2%. The lessening is meaningful if it is confronted with the annual rate inflation which in year 2000 was 2.5%.

Table 21 shows the economic ratio of income, per region and macro-areas.

The average monthly purchase increased in relation to the increase of family number of persons; in year 2000 the monthly average purchase was € 1366.38 for families with one person, and it was around € 2817.55 for families with 5 and more person, thus the registered increase was less than proportional.

Table 19. Family monthly expenditures for (according to number of persons) (1998) (in €) (source: ISTAT, 1999)

	Number of persons					
	1	2	3	4	5 and more	Total
Total expenditure	1,290.39	1,875.12	2,398.32	2,602.52	2,739.06	2,076.65
Food and beverage	246.40	36.94	446.02	511.47	580.96	403.63
No food	1,043.99	1,505.71	1,952.30	2,091.05	2,158.10	1,673.02
Bread and cereals	39.00	57.90	73.81	87.26	100.66	66.33
Meat	52.64	83.89	106.07	12.31	143.60	94.25
Fish	16.88	29.54	34.99	40.63	44.75	31.33
Milk, cheese, eggs	35.12	50.42	62.93	73.72	84.08	57.00
Oil and fats	13.13	17.58	18.13	19.82	23.95	17.63
Potatoes, fruit, vegetable	4.66	66.80	76.52	84.57	93.46	70.08
Sugar, coffee	20.49	28.66	31.88	37.24	4.06	30.17
Beverages	2.26	34.61	41.69	45.15	49.91	36.83

Table 20. Yearly family expenditures (according to number of persons) (2000) (in €) (source: ISTAT, 2001)

	Number of persons					
	1	2	3	4	5 and more	Total
Total expenditure	16,396.59	23,885.70	30,687.78	33,233.76	33,810.64	26,133.81
Food and beverage	2,969.19	4,475.77	5,527.24	6,139.36	7,030.01	4,851.63
No food	13,427.37	19,409.92	25,160.53	27,094.38	26,780.64	21,282.18
Bread and cereals	480.55	724.33	935.22	1,068.22	1,204.15	813.91
Meat	641.72	1,011.06	1,310.88	1,470.32	1,731.52	1,129.40
Fish	223.05	386.10	465.81	529.51	580.90	406.22
Milk, cheese, eggs	410.61	601.31	758.94	859.40	982.47	667.93
Oil and fats	138.15	189.85	207.58	217.33	261.28	191.55
Potatoes, fruit, vegetable	551.92	802.57	935.42	1,001.02	1,132.18	833.35
Sugar, coffee	250.74	336.03	401.86	446.43	514.39	364.30
Beverages	272.38	424.46	547.06	547.06	623.02	444.91

Table 21. Monthly household income average by region and geographical area (€) (source: ISTAT)

Regions and geographical areas	1992		1993		1994		1995		1996	
	Household (%)	Average income	Household (%)	Average income	Household (%)	Average income	Household (%)	Average income	Household (%)	Average income
Italy	100.0	1,612.89	100.0	1,626.32	100.0	1,746.65	100.0	1,824.64	100	1,895.39
North west	28.6	1,768,86	28.6	1,766.28	28.7	1,946.01	28.7	2,014.18	28.7	2,131.41
Piemonte	8.4	1,685.19	8.4	1,689.33	8.6	1,801.40	8.5	1,857.17	8.5	2,045.68
Valle d'Aosta	0.2	1,606.69	0.2	1,599.46	0.2	1,801.91	0.2	1,762.15	0.2	1,906.75
Lombardia	16.3	1,880.93	16.3	1,875.25	16.5	2,072.02	16.5	2,148.46	16.5	2,234.71
Liguria	3.6	1,471.38	3.6	1,464.15	3.4	1,713.08	3.4	1,777.12	3.4	1,965.19
North east	18.3	1,785.91	18.4	1,858.21	18.9	1,936.19	18.9	2,068.92	18.9	2,156.72
Veneto	7.3	1,878.35	7.3	1,919.67	7.5	1,998.68	7.5	2,096.29	7.6	2,207.33
Trentino Alto Adige	1.5	1,753.37	1.5	1,808.63	1.6	1,865.95	1.6	2,028.12	1.6	2,133,99
Friuli Venezia Giulia	2.3	1,622.71	2.3	1,665.05	2.3	1,746.65	2.3	1,865.44	2.3	1,883.51
Emilia Romagna	7.3	1,751.30	7.3	1,868.02	7.4	1,947.55	7.4	2,113.85	7.4	2,195.45
Center	19.4	1,676.41	19.5	1,664.02	19.4	1,819.94	19.0	1,878.87	19.4	1,937.23
Tuscany	6.4	1,669.18	6.5	1,717.21	6.3	1,906.75	4.0	1,929.48	6.3	2,042.07
Umbria	1.5	1,640.78	1.5	1,565.89	1.4	1,761.63	6.3	1,896.94	1.4	2,032.77
The Marches	2.4	1,578.29	2.4	1,653.69	2.5	1,752.33	2.4	1,829.81	2.4	1,950.14
Lazium	9.1	1,713.60	9.1	1,644.39	9.2	1,787.97	9.2	1,854.08	9.2	1,847.88
South	33.6	1,348.98	33.4	1,356.21	33.0	1,421.80	33.1	1,489.46	33.1	1,517.35
Abruzzo	2.1	1,493.59	2.1	1,419.22	2.1	1,471.38	2.1	1,595.85	2.1	1,705.85
Molise	0.6	1,315.41	0.6	1,392.36	0.6	1,489.46	0.6	1,502.37	0.6	1,470.35
Campania	9.1	1,309.73	9.0	1,322.12	8.5	1,442.98	8.5	1,486.36	8.6	1,554.53
Apulia	6.2	1,394.43	6.2	1,409.41	6.4	1,508.57	6.4	1,606.18	6.4	1,572.61
Basilicata	1.0	1,320.58	1.0	1,266.35	1.0	1,298.88	1.0	1,421.28	1	1,442.98
Calabria	3.4	1,249.82	3.4	1,296.30	3.4	1,327.81	3.4	1,357.76	3.4	1,381.52
Sicily	8.6	1,354.66	8.5	1,336.59	8.4	1,364.99	8.4	1,431.11	8.4	1,440.39
Sardinia	2.7	1,389.78	2.7	1,475.52	2.6	1,437.82	2.6	1,509.08	2.6	1,568.47

Families with more person chose mainly food goods (around 21% of total expenditure), meanwhile the families with one person utilised mainly share of their total expenditure for their house. Obviously other factors characterised the purchase of Italian family, such as the age of chief of family and the relationship between the person of the same family. The old people of more 65 years old registered monthly average purchase less than young people. The old people purchase is represented mainly by food goods, around 22% of total expenditure, for house around 35% and for sanitary around 6%. Young people, instead, registered more purchase for transport and communications (around 20%) and for "other good and services" (more than 15%).

Italian food distribution is fragmented (Table 22), with super and hypermarkets playing a smaller role than other European markets. This situation is due to strict zoning laws and tough resistance from well organised smaller retailers, from 1st of January 1998 the Italian Government proposed complete liberalisation of shop opening up to 300 m^2 surface area.

Table 22. The Italian distribution network (source: Confcommercio)

Category (units)	January 1997	January 1996	Trend units
Wholesalers	101,344	115,901	Negative
Retailers: Total	508,922	575,320	Negative
Food	180,951	203,085	Negative
Non-food	327,971	372,145	Negative
Hotel/restaurant/bars	184,009	197,365	Negative
Supermarkets	5,207	4,787	Positive
Department	902	841	Positive
Hypermarkets	230	225	Positive
Cash and carry	288	293	Negative
Malls	309	n.a.	n.a.

The downward trend in the number of retail outlets recorded in recent years continued in the year 2000. Hypermarkets and supermarkets alone accounted for 50% of overall turnover, while sales of the entire modern retailing sector represented over 70% of total grocery sales, 33.4% of which is due to associations of retailers and 37.8% to hyper/supermarkets chains. The expansion in the number of hypermarkets was significant, although the rate of growth slowed (10.7%) as compared to the previous period (+15% to +16% yearly). The number of supermarkets also increased in 2000, compared to 1999, although the rate of growth was more modest (+5%). Following the fall in the number of hard discount stores in 1998 (–7.7), the category recovered slightly, coming back to levels of 1997, with 2564 outlets, despite a contraction in the North-west (–1.6%). Department stores increased little more than 1% in 2000, following considerable expansion the previous year. In contrast, the steady downward trend also affected the sales area and number of employees.

Examining the purchase channel, it turns out that dynamics of national household demand had negative influence on the turnover of traditional detail (–3.1%) and of discounts (–4.5%), confirming the tendency already recorded in previous year (Var % 00/99 corresponding to –8.3% for traditional detail; –1.3% for discounts). These channels discount the effects of the decrease of the demanded volumes (traditional detail –6.7%; discounts –10.1%), in spite of the increase recorded in the average prices of the consumption.

Super+hypermarkets, free services and stalls registered, on the contrary, a positive trend, with rates of growth equal to turnover, respectively, +3.1%, +4.1% and +4.4%. Such dynamic is the result of the increase of the consumption average prices, that compensated, for Super+hyper and stalls, the contraction recorded in the purchase volumes (respective, –1.5% and –3.4%). In light increase, instead, are the amounts asked near "free services" – traditional shops – (+1.1%).

In the 2001 ISMEA and Nielsen analysed the dynamic of household purchase for food products for each representative distribution channel. Table 23 shows the results.

Table 23. Household purchase for food products per distribution channel (Var. %) (source: ISMEA-Nielsen, 2001)

	Super+hyper		Traditional shop		Free shop		Discounts		Stall		Other shops	
	01/00	00/99	01/00	00/99	01/00	00/99	01/00	00/99	01/00	00/99	01/00	00/99
Total food purchase	3.1	6.9	–3.0	–8.3	4.1	–10.2	–4.3	–1.3	4.4	–1.3	1.6	4.6
Pasta and rice	1.8	4.3	–3.7	–12.1	0.7	–18.6	–9.7	–8.4	25.4	10.4	–24.2	–13.1
Meat and eggs	0.3	8.0	–4.8	–8.4	5.3	–4.4	–1.8	4.6	–2.1	5.6	8.9	3.7
Milk and by-product of milk	3.3	4.9	1.4	–13.1	9.4	–12.4	1.8	2.7	2.5	–5.6	6.8	1.8
Fish	6.6	7.4	–2.3	–3.5	1.0	–8.1	2.7	1.1	7.0	–9.6	50.8	1.2
Vegetable and fruit	3.9	8.4	1.2	–10.5	–1.3	–9.6	–3.7	0.6	4.6	–0.5	4.2	12.9
Bread, cereals, and by-product	1.8	9.0	–7.0	–5.6	6.5	–13.0	–1.1	5.5	–7.3	8.2	12.8	–13.8
Oil and fats	4.3	0.4	2.3	–2.0	–5.7	–17.8	–17.4	–14.5	81.2	53.4	–6.2	–8.5
Biscuits and sweets	4.0	4.7	–7.3	–14.6	–6.7	–13.6	–7.8	–8.7	9.7	9.1	–0.5	–3.4
Sugar, salt, coffee	1.0	2.8	2.3	–15.6	2.2	–14.7	–21.4	–9.9	2.6	12.6	2.9	–1.4
Alcohol and beverage	6.3	10.9	–7.3	–1.3	11.8	0.2	–3.4	–1.6	0.9	0.8	–9.1	12.8
Wine	2.5	8.1	–10.1	–10.6	–1.8	–23.7	–15.4	–10.6	64.3	–42.8	–13.9	20.4

National seafood production: aquaculture and fishing

World aquaculture production continued to expand, rising to 42.7 million tonnes in 1999, increasing around 8.5%, respect to 1998; in value terms, it rose by 2.1%, equal to 53.5 billion dollars.

In Italy production rose to 240,715 tonnes (+7.5%) in 2000. In particular, production of sea bream and sea bass increased (14,100 tonnes overall, +9%), confirming the positive trend of the last decade. Rising level of production were still not sufficient, however, to satisfy domestic demand, Italy continues to be the main outlet for sea bream and sea bass in Mediterranean basin. Eel farming made a remarkable recovery: after the crisis in 1998, production increased by more than 100%.

The value of output aquaculture rose to € 552.09 million, due to the increasing output of marine species and clams as in 1999, which offset the stagnation in the freshwater fish sector, both in terms of quantity and value. Farming of marine species (sea bream and sea bass and diplodus) represented 17.2% of saleable output for the whole aquaculture sector.

In 2000, three new cages farms were installed (one in Liguria and two in Puglia) and one land based plant was built in Sicily. Consequently, there are 95 intensive production plants for three species, 30 of which are in cages.

Farming red tuna is currently experimented, an initiative which integrates fishing and sea-farming, since fished small tuna of no commercial value is allowed to grow in cages. The Ministry of Agriculture decree of 25th May 2000 approved the Sixth National Plan for Fishing and Aquaculture 2000-2002. The adopted principles and measures are based on policy implementation for safeguarding resources on the one hand (sustainable development, control of fishing activity, safeguarding bio-diversity and ecosystems), and on the other, practical implementation of plants jointly agreed by the various bodies interested in the sector (Regional Government, local private initiatives, trade organisations, scientific research and environmental associations).

The first semester of 2000 registered an increase for fish production in general, due mainly to consumers looking for alternatives to beef. Although there was an increase in quantity exported in 2000 and a reduction in imports, the deficit in value terms worsened, increasing from about € 2065.83 million in 1999 to over € 2324.07 million. Regarding aquaculture, an increase in volume exported and a contraction in imports brought to a reduction in the trade deficit, although the terms of trade worsened. The reduction in the deficit was due mainly to the trade improvement of farmed mussels, both in terms of quantity and value. The EU is still the main reference market (Austria, Germany, France, Spain) while most imported products come from the Mediterranean basin (Greece, Spain, Malta and Turkey).

Italian fish production, in 2000, amounted to 392,000 tonnes, for a value of € 1,549.37 million, registering a value contraction of 6%, and about 24,000 tonnes in quantity. Regarding product value, the trend showed substantial stability as compared with previous years, due to an increase in average prices, which rose to € 3.98 per kg, as compared to € 3.87 per kg in 1998. The preserved fish sector recorded a trend inversion respect to the previous year. Imports fell slightly in volume and exports increased significantly; imports of live, fresh and de-frozen fish contracted about 3%; in contrast, there was a slight increase in preserved products (+3%), which amounted to 171,000 tonnes. In terms of quantity, imports fell 2% overall, amounting to 713,000 tonnes. Exports increased to 109,000 tonnes, equal to € 93 millions.

National seafood demand

In 1999 after the growth of 7.3% in quantity and 9.1% in value, in 2000 the positive performance of fresh and defrosted fish was negative (Table 24). The modern families preferred to buy new products with added value in term of fast cookies, "cutlets", stickers, crunchy, etc.

During year 2000 the consumption of freshwater goods decreased for salmons and salmon trout, in particular for cuts and whole, but Italian families preferred to buy the white trout (+16.1%), a particular species that had a good perception from consumers, with a low price in comparison to the price of other salmonids. The index of penetration, among Italian families, for white trout was, in 2000, around 90% and the share for this specie on the household purchase was 6.8%.

During year 2000 the consumption of transformed and canned fish increased. The demand of seafood increased 1.8%, in volume and value. The index of penetration decreased to 76%. Each family had a higher average purchase in comparison to 1999. In North East Regions the consumption of fresh seafood increased (+8.7% in quantity), in South Regions the consumption for fresh increased of 5.1%, while it decreased in North West and Centre (–0.9%, –6.1%, respectively).

Table 24. Economic ratios (1999-2000) (source: ICRAM on Nielsen, 2000)

Economic indicators	1999	2000	Var.% 2000-1999
Quantity (t)	449,924	456,567	1.5
Value (thousand €)	3,479.17	3,521.95	1.2
Average price (€/kg)	7.73	7.71	–0.2
Yearly purchase for family (kg)	21.8	22.1	1.5
Yearly purchase per capita (kg)	7.8	7.9	1.5
Yearly purchase for family (€)	168.66	170.74	1.2
Yearly purchase per capita (€)	60.01	60.76	1.2
Purchase for each family buyer (kg)	21.9	22.3	1.8
Penetration index (%)	99.3	99,1	–0.2
Buyer family in promotional period (%)	63.8	67.3	5.5
Average purchase for each act (kg)	0.86	0.89	3.4
Average number of purchase acts	25.5	25.1	–1.7
Interval of purchase (days)	14.3	14.6	2.1

Chilled, frozen, deep-frozen seafood products, in 1999 and 2000, had positive performance, since the habits of consumers modified: in 2000 the share of growth was positive in all Italian Regions, lesser in Southern ones, but always positive (+10.7% in volume, +7.8% in value).

The same performances were registered for canned and processed seafood, in particular in the Central and Northern Regions. The market share was 19% in volume and 19.6% in value. The penetration index was very high, 92.8%. The positive trend was influenced by price policy: low price for new products based on fish and seafood with added value. For example, the price of canned tuna was lower than the price in 1999, registering a decrease of –4.6%. A particular information comes from promotional period and promotional products; in 2000, 55% of Italian families increased household purchase in promotional time. The household purchase of salted, dried and smoked seafood product still had negative trend. In 2000, the purchase was around 17,000 tonnes, decreasing 6.7% in volume and 3.1% in value in comparison to 1999. The penetration index for dried, salted and smoked seafood was 39%, representing the lower of all categories of seafood products. For this aggregate of seafood goods the yearly average number of purchase acts was less than 3.

The growth of the domestic consumption is due to an increase of the acquired quantity from each buying family, climbing from 21.9 kg to 22.3 kg, while the families contracted their habit to the consumption of the seafood products: the penetration ratio recorded a light decrease, still remaining to a considerable elevated level, equal to 99.1%. More than 60% of Italian families chose to buy seafood products in promotional time, consequently in those periods an increase of demand of processed and fresh products was registered.

The average purchase for each "act of buy" increased in 2000, while the interval between each purchase decreased, so, in the last year, each family did 25 acts of seafood purchase with an interval of two weeks between each buy and another one. The total per capita consumption was 22.4 kg, the incidence of household consumption was around 35. In Italy there is a high perception of the importance of seafood in the food diet, but there is also a general perception of not easing to cook fish.

Imported aquaculture species such as seabass, turbot, seabream or salmon are also being consumed in increasing amounts by Italian consumers (Table 25). Consumption of value-added products is growing, but the Italian preference is still for the fresh natural products.

According to territorial analysis of the fish consumption it has turned out that the main consumers of seafood are the inhabitants of Southern Italy, and their incidence on total seafood consumption is around 38.9% in volume and 34.7% in value. Household purchase in South of Country increased +4% in volume and 2.9% in value versus total national data. Positive trend, in the considered two years, are registered in Northeast, too; while household purchase was stationary in the Northwest. The national growth in 2000 decreased, because in the Centre Region the consumption of seafood decreased around –4% in volume and –3.7% in value.

Table 25. Total Italy imports (1995-1996) divided in 7 major groups (t) (source: FAO Globefish, 1998)

	1995	1996
Fish, fresh, chilled or frozen	248,195	263,972
Fish, dried, salted or smoked	32,995	38,258
Crustaceans and molluscs, fresh, chilled, etc.	193,900	212,945
Fish products and prepared	70,996	84,884
Crustaceans and molluscs, products and prep.	11,910	11,911
Oil and fats	28,211	22,070
Meals, solubles, etc.	97,506	86,891
Total	683,713	720,931

According to Italian seafood habits, Tables 26 and 27 show the species preferred by families and the Italian consumption habit, to note that a lot of species are consumed in fresh or frozen way.

Table 26. Breakdown of seafood consumption in Italy (1998) (source: ISMEA-Nielsen)

Products	Quantity (t)	%	Trend % 1998-1997
Fresh and chilled fish	230,661	55	–4.0
Fresh	218,306	52	–4.6
Chilled	12,355	3	8.2
Frozen fish	44,120	11	–10.2
Natural	40,216	10	–12.5
Prepared	3,904	1	22.2
Deep-frozen fish	49,663	12	14.4
Natural	32,110	8	11.1
Prepared	17,553	4	21.1
Preserved fish	75,924	18	–1.2
Preserved (bought)	73,400	18	–1.2
Prepared indoor	2,524	1	–0.3
Dried, salted and smoked	19,991	5	17.6
Total	420,359	100	–1.5

Half of Italian families (51%) consumes fish at least once a week, of which 55% prefer fresh fish or deep frozen, 23% frozen and dept freeze fish, 18% fish conserves and 4% filled with smoke or dry fish. In general, the Italian consumers prefer "convenient" seafood, already clean and easy to prepare. Distinction has to be done between the consumption in the Southern and Northern part of the country: the more expensive products are addressed to the North, while the most convenient ones are in the South. The fresh seafood products are consumed mostly in the South, where the easy access to the ports and the markets allows to maintain the traditional models of consumption. On the contrary, the frozen products are consumed in the North and in the inner areas.

A FAO Globefish[3] research has shown that the Italian fish market can still develop: the data say that around fifty one percent of families consume fish at least once a week; only two percent never eat

[3]Source: FAO Globefish: Vol. 53. The Italian Seafood Market, Audun Lem, February 1998.

fish. Average consumption of seafood is about 2 kg per capita monthly. In the same research, overall preferences are given as 41% for fresh fish, 32% for frozen fish and 27% for canned fish. About the habits to consume seafood indoor or in restaurant, 42% eat fish only at home compared to less than 1% which only eat fish in restaurant. This data is important if we read it together with demographic information, as shown in Table 28.

Table 27. Breakdown of household seafood consumption and per capita by type of preservation (1998) (source: ISMEA-Nielsen)

Products	Annual family consumption (kg)	Annual per capita consumption (kg)
Fresh and chilled fish	11.38	4.05
Fresh	10.77	3.84
Chilled	0.61	0.22
Frozen fish	2.18	0.78
Natural	1.98	0.71
Prepared	0.19	0.07
Deep-frozen fish	2.45	0.87
Natural	1.58	0.56
Prepared	0.87	0.31
Preserved fish	3.75	1.33
Preserved (bought)	3.62	1.29
Prepared indoor	0.12	0.04
Dried, salted and smoked	0.99	0.35
Total	20.74	7.39

Table 28. Seafood species consumed in Nielsen 4 macro-areas (t) (source: ICRAM/Nielsen database)

1999	Consumption in volume			
	Area 1	Area 2	Area 3	Area 4
Anchovy	2,641	925	3,388	7,906
Hake	1,271	972	2,258	7,155
Sole	1,991	1,381	1,900	2,703
Sardine	1,402	1,404	1,533	2,276
Swordfish	1,026	512	726	3,553
Mullets	229	291	696	1,084
Mackerel	645	678	679	2,399
Black spotted smoothhound	821	630	759	580
Groupers nei	333	348	796	598
Dentex nei	152	95	545	1,188
Seabream	3,194	1,789	5,482	8,369
Seabass	2,199	1,304	2,355	3,988
European hake	1,120	298	439	445
Red mullets	784	602	934	2,813
Monkfish nei	133	460	543	389
Other wild fish	5,853	5,623	7,372	18,634
Total	23,794	17,312	30,405	63,810

The frozen and chilled fish is at the second place in Italian preferences; the dried, salted and smoked fish has a marginal role for seafood consumption. The majority of fresh seafood is sold through traditional fish shops, including stalls at the local markets (Tables 29 and 30).

Table 29. Sales channel for fresh and frozen seafood (source: ICRAM/Nielsen)

Type of sales channel	Fresh seafood (%)	Frozen seafood (%)
Hyper and supermarkets	24	55
Fish shop	60	22
Fixed stalls in town markets	7	4
Mobile stalls in town markets	7	1
Cash and carry/discount	1	9
Normal food stores	0	4
Others	1	5
Total	100	100

Table 30. Fresh marine fish distribution by region (source: ICRAM/Nielsen)

Region	Hyper/Super/Discount	Traditional outlets
North	46%	54%
Centre	36%	64%
South	12%	88%

The role of supermarkets in the frozen seafood sales is much stronger than in fresh fish sales (Table 29). According to recent studies by Nielsen-ISMEA, more than 50% of frozen seafood is, now, distributed through these modern channels.

The seafood consumption data refer to AC Nielsen monitoring: ICRAM elaborated Nielsen database for years 1998 and 1999 to examine the trend and human habits in Italy for seafood products.

In the decade 1988-98, consumption of seafood goods increased, producing effects on the national production and on the imported amounts. Currently, Italy imports approximately 50% of fish, since the national production does not succeed in satisfying the demand. Aquaculture represents, in Italy, the answer to the increasing demand of fish, in fact from 1988 to 1998 the production of fish increased, above all for species like seabream and seabass. Other species, trout and eel, which have represented an important production, decreased. In the decade, the habits of the consumers changed. There has been an increase of singles, families in which the woman works and families with old people.

According to Nielsen monitoring, Italian Country is divided in 4 Macro-Areas, the Table 31 shows the consumption of freshwaters products. Figure 4 shows the percentage of trout consumers.

The growth of the domestic consumption is due to an increase of the acquired quantity from each buying family, climbing from 21.9 kg to 22.3 kg, while the families that have contracted their habit to consume seafood products have turned out in clean lessening: the penetration ratio has, in fact, recorded a light decrease, also remaining to a level still elevated, equal to 99.1%.

More than 60% of Italian families have chosen to buy seafood products in promotional time, and in those periods an increase of demand of processed and fresh products has been registered.

The average purchase for each "act of buy" increased in 2000, while the interval between each purchase decreased, so, in the last year, each family have done 25 acts of seafood purchase with an interval of two weeks between each buy and another one.

Table 31. Consumption of freshwater food in 4 Nielsen macro-areas (t) (source: ICRAM/Nielsen database, 2000)

1999	Area 1	Area 2	Area 3	Area 4
Total fresh fish by rivers	11,210	6,356	8,308	5,420
Eel	138	148	300	684
Salmon	2,200	1,116	2,386	1,689
Trout	1,965	785	1,931	970
Salmoned trout	6,158	3,779	3,223	1,851
Persico	332	387	212	99
Other by rivers	419	139	251	126
Total fresh waters by rivers	9,011	5,240	5,919	3,732

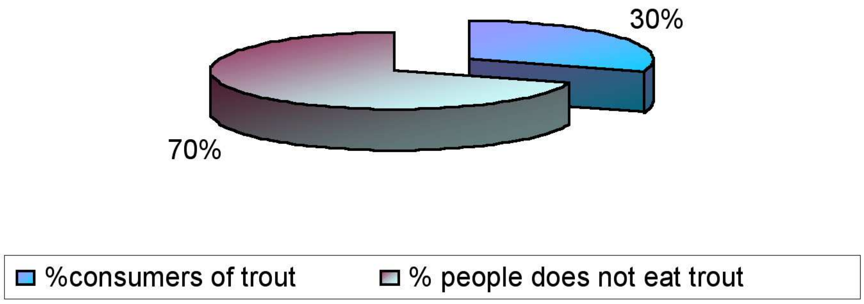

Fig. 4. Consumers of trout (%) – 1998 (source: AC Nielsen Database, 1999).

The trend on seafood consumption is showed in Table 32, where the different economic ratios per macro-area (Northwest, Northeast, Centre, South) are desegregated.

Table 33 shows the socio-demographic difference in the four areas of Italian consumption of seafood, with the products monitored by Nielsen related to four main Geographical Areas.

Table 34 shows the habit (purchase in Volume and value and its penetration ratio, the monthly frequency in purchase act) of Italian consumers monitored by Nielsen about their choice for freshwater seafood.

Thanks to elaboration on Nielsen database, we note the well appreciation of mussel; these families are considered "fish-lover", because they like to cook as well as to eat fish; those families consume fresh and frozen fish. Others species, seabass and seabream, trout, salmon trout, registered "extensive" consumption, in particular for families that consider themselves "traditionalists", because they consume fresh fish frequently, and families "hopefuls", because they would like to eat more fish, but are not confident enough to choose or prepare, and they are often young families.

Others products, as far as salmon, cod, sole, anchovy, represent a species with high penetration ratio, but the families that buy them are "low buyer": they buy frequently fresh fish, but they don't choose high commercial value products.

Regarding other species, i.e. for crustaceans, the consumption is very "particular": the Italian families purchase those products for "inquisitiveness", for "curiosity", but in general they prefer to consume the crustaceans in catering sector, for this reason in Nielsen database we have an underestimated information of real consumption of those species. In particular the families that purchase the crustaceans are defined as fish-lovers.

The demographic changes and the issue of little the time to disposition, caused the growth of the demand of range of seafood products of added value, especially in the great distribution, in hyper and supermarkets. The market surveys show the trend of the Italian consumers to spend more for a seafood product, traditional or new, especially if it is introduced in an innovative and comfortable shape.

Table 32. Ratios of household purchase of seafood products per macro-areas (source: ICRAM on Nielsen, 2000)

Ratio	1999	2000	Weight 2000 (%)	Var. 2000-1999 (%)
Northwest				
Volume (t)	99,765	100,525	22.0	0.8
Value (€)	860,968.77	861,145.40	24.4	0.0
Average price (€/kg)	8.63	8.57	–	–0.7
Annual family purchase (kg)	16.8	16.9	–	0.8
Annual per capita purchase (kg)	6.59	6.64	–	0.8
Purchase per family buyer (kg)	16.8	17.2	–	2.5
Penetration ratio (%)	100.0	98.3	–	–1.7
Northeast				
Volume (t)	67,498	71,065	15.6	5.3
Value (€)	566,402.93	607,143.12	17.2	7.2
Average price (€/kg)	8.39	8.54	–	5.3
Annual family purchase (kg)	17.3	18.2	–	5.3
Annual per capita purchase (kg)	6.4	6.7	–	5.6
Purchase per family buyer (kg)	17.3	18.2	–	5.6
Penetration ratio (%)	100.0	99.7	–	–0.3
Centre				
Volume (t)	111,695	107,249	23.5	–4.0
Value (€)	861,848.81	829,930.74	23.6	–3.7
Average price (€/kg)	7.72	7.74	–	0.3
Annual family purchase (kg)	24.6	23.6	–	–4.0
Annual per capita purchase (kg)	8.7	8.4	–	–4.0
Purchase per family buyer (kg)	24.7	23.9	–	–3.2
Penetration ratio (%)	99.8	98.9	–	–0.8
South				
Volume (t)	170,943	177,728	38.9	4.0
Value (€)	1,189,825.80	1,223,892.33	34.7	2.9
Average Price (€/kg)	6.96	6.89	–	–1.1
Annual family purchase (kg)	27.4	28.5	–	4.0
Annual per capita purchase (kg)	8.8	9.2	–	4.0
Purchase per family buyer (kg)	28.0	28.6	–	2.1
Penetration ratio (%)	97.9	99.7	–	1.9

The new habits of the consumers have recorded that 80% of the Italian consumers of fish consider very important the date of production; 50% consider very important the "origin" of the fish, 50% consider very important the packaging, 40% consider very important the brand, the label of the seafood product and relationship with environmental aspects.

Household purchase habits for seafood products

The consumption of fresh and defrosted fish is "strong": high penetration and purchase ratios stressed the family's habits as far as "high-buyer" of fish.

Table 33. Home consumption per region (t) in 1999 (source: ICRAM on Nielsen database)

	Area 1	Area 2	Area 3	Area 4
Total fresh and defrosted prepared seafood	47,809	34,621	58,259	106,730
Total fresh and defrosted seafood	2,427	1,771	891	353
Total fresh fish (seafish + freshwaterfish)	34,998	23,660	38,709	69,245
By catches	23,787	17,304	30,404	63,818
By freshwaters	11,211	6,356	8,305	5,427
Total fresh molluscs	8,604	71,717	15,858	32,080
Total fresh crustacean	1,781	2,012	2,800	5,051
Total frozen seafood	7,806	2,539	12,510	20,756
Total packaging seafood	18,741	9,901	16,465	12,372
Total canned seafood	21,512	18,043	19,406	23,044
Total salted, dried and smoked	3,117	2,082	4,709	7,986

Table 34. Seafood species by freshwater in household purchase (1999) (source: ICRAM on Nielsen database, 1999)

Freshwater species 1999	Purchase in volume (t)	Purchase in value (thousand of €)	Purchase in promotion (for year)	Monthly purchase acts
Eel	1,273.0	14,332.20	499,160.0	1,425,800.0
Others freshwater	937.0	6,541.44	456,853.0	959,262.0
Persico	1,031.0	10,727.84	3,316,166.0	1,588,138.0
Salmon	7,387.0	60,532.90	12,380,204.0	9,503,844.0
Trout	5,654.0	24,827.12	3,012,518.0	3,573,298.0
Salmon trout	15,014.0	89,094.01	11,949,572.0	9,716,641.0
Total fresh fish by freshwater	31,300.0	206,055.51	24,692,433.0	25,711,389.0

The "strong" consumer lives in the south (Area 4) (according to Nielsen's item), the typology of family is characterised by average monthly income per capita less than € 260.00 and the chief of purchase is more than 64 years old. Southern Italian families, in 2000, consumed around 18 kg of fresh fish: this data is higher than national average fresh-fish consumption, in fact the national consumption of fresh fish in the 2000 year is around 12.2 kg. Where the chief buyer is 64 years old the consumption of fresh fish is around 13.6 kg and where the average monthly income per capita is around € 260.00 the consumption is around 14.5 kg.

The consumption became "extensive" in the families living in Centre (Area 3), with four or five persons, where the age of chief of purchase is 55-64 years and the average monthly income is high € 410,00-620,00. Those families are not "strong" consumers of seafood products.

According to Nielsen monitoring, the consume is "intensive" for one-person family with average monthly income per capita more than € 620, while the consume of fresh fish is "weak" in Northern family characterised by three person and chief buyer is 44 years old.

In the Northwest area the consumption of fresh-defrosted fish is low, in particular for young person. In this area the families with high income per capita choose fresh products and their consumer is "intensive". The consumption of fresh fish increased in 2000 versus 1999 year: Northeast +8.7%, South +5.1%, while it decreased in Northwest –0.9% and in Centre –6.1%.

The increase of fresh fish has been registered in families with five person, where the chief buyer is more than 45 years old and has an average monthly income per capita less than € 260.00. This typology of family preferred crustaceans and molluscs, while in the Northeast the choice is for freshwater fish, in fact those species registered an increase around 16.2% that represent the 20% of total volume of fresh fish, bought by families in this geographic macro-area.

The consumption of frozen-defrosted fish increased in 2000, thanks to high technology innovation. The modern family prefer frozen products, due to the security for critical point (HACCP). In the 2000 year their consumption increased of 6.4% in volume and 6.2% in value. The consume in 1997 was around 43,000 tonnes, while in 2000 it was more than 61,000 tonnes: the total increase is 41%. The consumers preferred in particular frozen seafood with packaging, consequently the products sold without packaging decreased: in 2000 versus 1999 year, this typology of seafood products was less than 35,000 tonnes, with a decrease of 9.3% in volume and 9.2% in value. In the period between 1997-2000 the seafood without packaging decreased more than 22.7% in volume. Frozen and defrosted prepared products increased, but they represent a "niche" market. For frozen prepared products the main typologies are "mollame" and stickers of sole and hake. The consume is "extensive" and "frequent". The family choosing this product buys a low quantity and very frequently.

The main family has more than 4 person and chief buyer is 45-54 years old with average monthly income around € 260.00-420.00. In particular, in the 4 different macro-areas, Nielsen monitoring shows that in Northwest the consumption is "strong" mainly in young family; in Northeast area the consume is "extensive" in one person family, where the average monthly income is more than € 620.00.

The consumption of frozen products in "weak" in Southern regions, mainly in family where chief buyer is old (>64 years old) with income around €260.00-420.00. In the South family prefers the frozen-defrosted without packaging.

The consumption of canned seafood products monitored by Nielsen, regards mainly canned tuna in oil or natural. For canned products in oil the trend increased (+4.6%), while natural canned products decreased. According to Nielsen monitoring of canned tuna, the average price in 2000 versus 1999 decreased around 4.6%, while average purchase increased 5.4%. Around 55.3% of families bought products in promotion. The farms that produced canned tuna adopted a diversification of typology of canned product based on tuna: tuna and vegetables, tuna and pasta, etc. In general, the consumption of canned products is "extensive", high and strong. The consumers in Northeast area are strong, compared to national average.

In Centre and South the consumption of canned product is "weak", mainly in families with one-person and where the chief buyer is >64 years old. In the Northwest the consume is "intensive" mainly in young families. For all items of families the penetration ratio is always more than 90% and the purchase ratio is less than 23%. For others typologies of canned products (i.e. mussels, striped venus, salmon, etc.) in the 2000 a negative trend is registered: only salmon, during 1997-2000, had a positive trend, thanks to price policy of promotion. For canned anchovies, sardines, eel, sgomber, etc., the trend is positive thanks to "take away" marketing promotion, but these products represented a "niche" market, mainly in Northwest of Country, for families with high average monthly income and with young person as chief buyer.

For salted, dried and smoked seafood, the consume represents a 3.7% of total national consumption. In the 2000 "baccalà" registered a negative performance: volume –10.5% while in the period 1997-2000 the decrease was around 28%. In the 2000 the 9% of Italian families choose to "no buy" those products. In general, the consumers that prefer this typology of product has registered no more than 3 acts of yearly purchase. Consequently the consume is "intensive" and for "interested" person. Only for family with high income, the trend, in 2000, was positive. In percentage the consume of salted, dried and smoked fish products is more high in Centre and South than in Northwest and Northeast. In Centre and South the consume regards the families with high number of person, where the chief buyer is more than 55 years old: in these cases the penetration ratio is more than 50%.

General characteristics of the population

"Resident population" is: Italian and non-Italians citizens usually resident in Italy and enrolled in commune registry offices. Registry offices are the source of population estimates and changes. Population changes result from natural changes (births and death) and migration (enrolments minus changes of residence-within Italy or abroad).

Data about resident population are presented in Tables 35-37.

Table 35. Resident population by sex and geographical area (1997) (source: ISTAT)

	Male	Female	Total
North	12,381,732	13,185,298	25,567,030
Centre	5,339,347	5,713,258	11,052,605
South	10,229,513	10,714,206	20,943,719
Italy	27,950,592	29,612,762	57,563,354

Table 36. Structure of resident population by sex and age (% in volume) (1997) (source: ISTAT)

Age	Male	Female	Age	Male	Female
90	0.3	0.7	45	6.6	6.5
85	0.9	1.6	40	6.9	6.5
80	1.8	2.6	35	7.6	7.2
75	2.7	3.6	30	8.3	8
70	4.2	5.2	25	8.4	7.7
65	5.1	5.7	20	7.5	6.8
60	5.6	5.8	15	6	5.4
55	6.2	6.2	10	5.3	4.7
50	6.3	6.1	5	5.1	4.7
			0	4.9	4.4

Table 37. Household by members number (% in volume) (1961-1997) (source: ISTAT)

	Census				Current surveys	
	1961	1971	1981	1991	1995-96	1997
1	10.6	12.9	17.9	20.6	20.5	21.3
2	19.6	22	23.6	24.7	26.3	26.4
3	22.4	22.4	22.1	22.2	23.2	23.6
4	20.4	21.2	21.5	21.2	21.8	21.1
5	12.6	11.8	9.5	7.9	6.5	6.1
6 and more	14.4	9.7	5.4	3.4	1.7	1.6
Total (thousands)	13,747	15,981	18,632	19,909	20,855	21,193
Average size	3.63	3.35	3.01	2.8	2.81	2.69

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