

# Fish marketing and trading in Croatia

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## Abstract

An overview of the current situation (2002) of the Croatian fishery sector is presented. Data are given on employment, investments, legislation, the fish processing industry, import/export and fish market aspects (prices, facilities, agents). In particular aspects on the regulation and organization of fish markets and trading are discussed and the Croatian strategy for marine fishery development is highlighted.

## 1. Introduction

The Republic of Croatia covers 56,000 sq. km and has a population of 4.5 million. Its coastal length is approximately 6,000 km since it comprises more than 1,000 islands which account for nearly 9% of the total Mediterranean coastline.

Fishing has always been an important economic activity in the coastal area. However, the position of fishery in the national economy as a whole has not been as important as one might expect. In addition, due to the transition from the socialist to the market-oriented economy and consequent reform processes (privatisation, restructuring) as well as attempts to join the international market (especially EU), the fishery sector has experienced profound changes. These include changes of legislation, institutional framework, as well as changes in ownership structure, organization of administration and management, and also those regarding the development of new economic activities within the fishing sector.

## 2. The position of fishery industry within the Croatian economy

### 2.1 Fishery sector and GDP

The average annual contribution of the marine and freshwater fishery sector to the national economy amounted to US\$ 180 million over the last decade.

In terms of the GDP structure, the share of fisheries is shown in Table 1, while the growth trend is shown in Table 2.

Table 1. GDP Structure (%).

Year	(current prices)			
	1996	1997	1998	1999

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Table 2. GDP of fishery sector (constant prices).

Year	1996	1997	1998	1999
Indices (previous year =100)	79.6	96.6	96.8	91.4
Growth rates (%)	-20.4	-3.4	-3.2	-8.6

Source: Croatian Bureau of Statistics

In fact, the Croatian fishery sector suffered a serious downfall during the years of war. The consequences of the war conditions can be seen even in the 1996 results, when the growth rate was still enormously low. However, the fishery sector started to recover its position in the Croatian economy by the end of 1990s, which can be seen through its stable share in the GDP. The 1999 drop follows the decreasing significance of the agriculture sector in the Croatian economy in general.

## 2.2 Legal entities in the fishery sector

Analysing the number and structure of the legal entities (enterprises) involved in the fishery sector of Croatia points out some significant indicators (Table 3).

Table 3. Registered legal entities in the Croatian fishery sector.

Entities Year	Registered legal entities		Active legal entities		Crafts & trades	
	Number	Structure (% CRO)	Number	Structure (% CRO)	Number	Structure (% CRO)
1997	468	0,27	-	-	-	-
1998	485	0,27	-	-	-	-
1999	500	0,27	-	-	-	-
2000	511	0,269	-	-	2.449	1,20
2001 (March)	520	0,30	231	0,30	1.535	1,75
2002 (March)	536	0,30	221	0,30	1.609	1,79

Source: Croatian Bureau of Statistics

As far as the number of registered legal entities is concerned, this number has been increasing, while the share of the fishery companies in the overall structure of the Croatian firms is quite steady. However, it has to be noted that the number of actually active registered legal entities is decreasing (still maintaining the same percentage of the total number of active legal entities). The significant indicator is by all means the number of craftsmen engaged in the fishery sector, which is rising, both in absolute values and in relative terms.

Table 4. Active legal entities according to ownership in March 2002.

	Forms of ownership								Total
	state		private		collectives		mixed		
	No.	%	No.	%	No.	%	No.	%	
<b>Entities</b>	5	2,3	198	89,6	11	5,0	7	3,2	221

Source: Croatian Bureau of Statistics

It is worth taking a look into the ownership structure of the active legal entities in Croatian fishery sector (Table 4). The important thing here is that the great majority of them are privately owned (89,6%). This is a profound change compared to the situation a decade ago.

Another rather interesting point is the territorial distribution of these entities (data in Table 5 are from 2001, but the structure has not significantly changed).

Table 5. Legal entities in March 2001 – territorial distribution.

County	Registered entities		Active entities	
	Number	%	Number	%
Zagreb	7	1,35	5	2,16
Krapina & Zagorje	1	0,19	1	0,43
Sisak & Moslavina	2	0,38	1	0,43
Karlovac	1	0,19	-	0,00
Varaždin	3	0,57	2	0,86
Koprivnica & Križevci	1	0,19	1	0,43
Bjelovar & Bilogora	9	1,73	7	3,03
Virovitica & Podravlje	-	0,00	-	0,00
Požega & Slavonija	2	0,38	1	0,43
Brod & Posavina	2	0,38	2	0,86
Osijek & Baranja	10	1,92	7	3,03
Vukovar & Srijem	1	0,19	-	0,00
Međimurje	2	0,38	2	0,86
City of Zagreb	19	3,65	7	3,03
<i>Continental counties</i>	<i>60</i>	<i>11,54</i>	<i>36</i>	<i>15,58</i>
Primorsko-goranska	63	12,11	25	10,82
Ličko-senjska	5	0,96	2	0,86
Zadar	68	13,08	44	19,05
Šibenik & Knin	40	7,69	18	7,79
Split & Dalmatia	165	31,73	57	24,68
Istria	86	16,54	31	13,42
Dubrovnik & Neretva	33	6,35	18	7,79
<i>Coastal counties</i>	<i>460</i>	<i>88,46</i>	<i>195</i>	<i>84,42</i>
<b>Croatia</b>	<b>520</b>	<b>100,00</b>	<b>231</b>	<b>100,00</b>

Source: Croatian Bureau of Statistics

Assuming that the legal enterprises in the continental part of Croatia are involved in freshwater fishing and those in coastal counties in marine fisheries, it becomes quite clear that the marine fishery dominates in the Croatian fishery sector. However, it should be noticed that more than half (60%) of the continental entities are active, while only 42,39% of the entities registered in fishery in the coastal areas actually operate. They still make 84,42% of total active entities.

## 2.3 Employment

The data on employment in the fishery sector in Croatia are shown in Table 6.

Table 6. Employment in legal entities in fishery sector in Croatia 1999-2002.

	1999		2000		2001		2002 (March)	
	Total	Women	Total	Women	Total	Women	Total	Women
<b>Fishery</b>	1.140	212	1.137	201	1.214	231	1.239	221
<b>% CRO</b>	0,11	0,04	0,11	0,04	0,11	0,05	0,12	0,05

Source: Croatian Bureau of Statistics

Thus, it can be concluded, that employment in the Croatian fishery sector is low but its share in total employment is stable. Moreover, the distribution of employment over the legal entities in the counties is rather interesting to analyse (Table 7).

Table 7. Employment in the legal entities in fishery sector in Croatia (March) 2000 – territorial distribution.

County	Employment		Women	
	Number	%	Number	%
<i>Continental counties</i>	442	38,80	60	29,56
Primorsko-goranska	115	10,10	43	21,18
Ličko-senjska	31	2,72	3	0,49
Zadar	290	25,46	40	19,70
Šibenik & Knin	24	2,11	5	2,46
Split & Dalmatia	91	7,99	13	6,40
Istria	97	8,52	35	17,24
Dubrovnik & Neretva	49	4,30	4	1,97
<i>Coastal counties</i>	697	61,20	143	70,44
<b>Croatia</b>	<b>1.139</b>	<b>100,00</b>	<b>203</b>	<b>100,00</b>

Source: Croatian Bureau of Statistics

It should be noted that ca 85% of total number of total legal entities, those registered in the coastal areas, refers to only 61,20% of total employment in the fishery sector. The largest percentage of the employment is found in the Zadar County. Other data show that more than half of the people employed were engaged in the private sector at the time.

Moreover, the analysis of employment in crafts and trades related to the fishery sector in the year 2000 shows that this part employed 2.449 people, which is more than double compared to the legal entities. 62,23% of all those employed were the owners themselves, and the remaining 37,77% were employees. Therefore, the Croatian fishery sector employed 3.588 persons in 2000, out of which only 31,74% in the registered legal entities.

Two thirds of total employment in fishery refers to the crafts and trade sector. Data on employment, however, are not very dependable, since they include a rather high level of estimation.

Nonetheless, the percentage of those employed in the fishery sector in total employment figures in Croatia in 2000 was 0,4% on average, while it tended to grow to 0,7% in the private sector. As far as employment is concerned, it would be interesting to take a brief look

at the data on the structure of legal entities according to the number of people employed (Table 8).

Table 8. Active registered legal entities according to the number of employed persons (March 2002).

Number of employed													
0		1 - 9		10 - 49		50 - 249		250 - 499		500 >		Total	
No	%	No	%	No	%	No	%	No	%	No	%	No	%
84	38,01	106	47,96	27	12,22	3	1,36	1	0,45	-	-	221	100,00

Source: Croatian Bureau of Statistics

As seen, the largest part (85,97%) of the active entities refers to the small firms with up to 9 people employed. The remaining 4 legal entities are presented in Table 9.

Table 9. Legal entities with more than 50 employed persons (March 2002).

Name of the entity	Place	County	No. of employed
“Neptun”	Komiza (Vis)	Split-Dalmatia	79
“Mardešić”	Zadar	Zadar	185
“Sardina”	Postira (Brač)	Split-Dalmatia	218
“Adria”	Zadar	Zadar	254

Source: Croatian Chamber of Commerce

It seems quite intriguing that the largest legal entities of the fishery sector involve both marine fishing and fish processing. Two of them are located on the islands of the Split-Dalmatia County, and two of them are in Zadar, on the coast. Data on the salaries in the fishery sector are shown in Table 10.

Table 10. Monthly paid (net) salaries in the fishery sector.

Month / Year	Average net salary (Kn)		Real index (previous year)	
	Croatia	Fishery	Croatia	Fishery
November 2000	3.503	2.321	100,9	103,6
May 2001	3.625	2.393	100,7	92,2
October 2001	3.538	2.677	102,5	134,6
March 2002	3.622	2.603	99,6	100,2

Source: Croatian Bureau of Statistics

So, the average net salary in the fishery sector varies a bit, but it has always been, at average, ca 71-72% of the average salary in Croatia, which is rather low salary compared to the costs of living and certainly is not an encouragement to get involved in the fishery sector.

Data on the reported vacancies in the fishery sector speak in favour of this statement (Table 11).

Table 11. Reported vacancies in the fishery sector in Croatia.

	1998		1999		2000	
	Croatia	Fishery	Croatia	Fishery	Croatia	Fishery
<b>Vacancies</b>	131.498	226	134.655	182	148.186	290

Source: Croatian Bureau of Statistics

## 2.4 Grey economy

The above-listed data are based on official statistics. It relies on the business records and statistical reports by the legal entities and craftsmen. However, the administration is very well aware that official reports do not represent a complete and/or accurate reflection of what is actually going on in the fishery sector. Therefore, a study was done so as to estimate the extent of grey economy (unregistered employment, unreported income etc.) in the Croatian economy. As far as the fishery sector is concerned, it was estimated that the unregistered added value was about 13,77% of the registered added value in 1998 and about 11,63% in 1999.

## 2.5 Investments

There have been some substantial investments in the Croatian fishery sector recently. In fact, according to the statistics, there were investments not only in fixed but also in new fixed assets in the fishery sector. Following is the data for the year of 1999.

Table 12. Gross fixed capital formation in fixed assets by technical composition.

(000 Kn)

Sector	Technical composition				Total
	Construction works	Equipment		Other	
		domestic	imported		
Croatia	17,741.029	4,358.002	7,464.453	1,765.829	31,329.313
Fishery	888	2.209	1.897	365	5.359

Source: Croatian Bureau of Statistics

Obviously, investments in the fishery sector (0,02% of total) were dedicated mainly to the acquisition of equipment (76,62%), while only a modest part of them was directed to construction works (16,57%), Table 12.

Table 13. Payments for gross fixed capital formation by main forms of investment.

Payments for gross fixed capital formation in fixed assets				
own assets	joint assets	financial credits	funds & budgets	total
70,51	-	29,49	-	100,00

Source: Croatian Bureau of Statistics

It can thus be concluded that the Croatian fishery sector is self-dependent. All the investments were financed by privately owned assets or through financial credits (Table 13).

It is interesting to notice that the investments in this sector were not encouraged or co-financed by any fund or budget whatsoever. However, there were also some investments in new fixed assets in 1999 (Table 14).

Table 14. Gross fixed capital formation in new fixed assets.

(000 Kn)

Sector	Technical composition				Total
	Construction works	Equipment		Other	
		domestic	imported		
Croatia	16,656.592	4,213.698	7,213.980	1,171.522	29,255.792
Fishery	900	2.053	1.830	1.129	5.912

Source: Croatian Bureau of Statistics

Although the share of fishery sector in the investments in new fixed assets is the same as above, the data on the kind of construction works are rather optimistic: 27,22% of the new investments refers to the construction of new capacities, 45,74% to the expansion, reconstruction and renovation, while the rest went to the replacement. To get a more detailed insight into the investments in new fixed assets in 1999, let us mention that most (81,38%) of the total investment came from the fishery sector itself, while the remaining part was invested by the companies registered in the sectors of agriculture (3,08%), food processing industry (13,08%) and production of transportation equipment (2,47%). At the same time, companies registered within the fishery sector invested in that very sector (97,09%) and also in the sector of wholesale and retail trade (2,91%). It can thus be concluded that the fishery sector becomes attractive to the trade and food processing sectors on one hand, and that companies involved in fishing expand their activities to the trade industry on the other hand. Another interesting aspect of investment analysis regards the territorial distribution of the investments in new fixed assets in the same year.

Table 15. Gross fixed capital formation in new fixed assets by location.

County	%
Zagreb	13,31
Bjelovar & Bilogora	1,42
Virovitica & Podravina	3,08
Osijek & Baranja	4,70
<i>Continental counties</i>	<i>22,51</i>
Primorje & Gorski Kotar	2,33
Ličko-Senjska	-
Šibenik & Knin	-
Zadar	32,70
Split & Dalmatia	16,28
Istria	4,82
Dubrovnik & Neretva	21,32
<i>Coastal counties</i>	<i>77,49</i>
<i>Croatia</i>	<i>100,00</i>

Source: Croatian Bureau of Statistics

Obviously, structure of the investments in new fixed assets by the territory largely corresponds to the structure of the legal entities involved in fishery sector (Table 15).

### 3. Legislation

Marine fishery in Croatia is regulated by two major laws: Law on Marine Fishery (1997) and the Code on Professional fishing on the sea (2000).

Nevertheless, the Croatian Parliament is about to enact the Strategy of the Development of the marine fishery in Croatia, which imposes some specific tasks and objectives to the fishery sector. As far as marine fishing is concerned, it would imply balanced long-term catch of fish and other marine organisms. In the area of mariculture, it implies an increase in production of fish and shellfish, with high quality standards and obeying ecological principles. In the terms of fish processing industry, it would mean better utilisation of the small pelagic fish as the most important resource. Finally, in the framework of fish markets, it would imply the set up of the system of fish trade and distribution, probably in the form of organized fish markets and auctions.

There are also several by-laws and directives regulating various aspects of fishery (incentives and subventions; compensation for damages; fishing quotas etc).

As far as the fish marketing, distribution and control are concerned, there are some basic laws and directives regulating not particular this area, but food in general. They address standards of quality (controlled by authorised institutions), standards referring to the quantities of metals and non-metal compounds in the fresh fish and fish products, standards of transportation as well as the standards of sale of fish, other marine organisms and their products.

At last, there are a few directives defining foreign trade in terms of fish, marine organisms and their products (import – export quotas, duties regime etc.).

### 4. Marine fishery

Marine fishery has always played an important role in the Croatian coastal zone. Although a traditional economic activity, marine fishing was modernised after the World War II, and the catches kept on rising (Table 16).

Table 16. Catches of sea fish.

	(tonnes)									
Year	1947	1952	1957	1962	1967	1972	1977	1982	1987	1989
Catch	11.766	14.776	17.320	16.401	26.574	25.981	31.006	35.368	46.324	41.210

Source: Buturić, Š.: “Tisuću godina prvog spomena ribarstva u Hrvata”, HAZU

In the nineties, fishing efforts were redirected resulting in a doubling of the number of trawlers and boosting the catch of demersal species. The increased catch of demersal fish

over the period coincided with decreased catch of pelagic fish. In reaction to the significant increase of demersal catch fish, Croatia prohibited the introduction of new trawlers.

At the same time, emphasis was laid on the small pelagic fish and their processing in view of the fact that this species is insufficiently exploited and that its catch may provide new jobs in the fish processing industry (Table 17).

Table 17. Catches of sea fish and shellfish.

Year	Catch			
	Pelagic	Demersal	Other	Total
1990	26.440	6.049	2.412	34.901
1991	13.678	3.624	1.474	18.776
1992	18.620	5.892	1.951	26.463
1993	16.583	6.694	2.490	25.767
1994	9.395	5.090	2.075	16.560
1995	8.524	4.974	1.866	15.364
1996	11.322	4.189	1.836	17.347
1997	10.071	3.901	2.054	16.034
1998	15.659	4.101	2.155	21.915
1999	17.518	2.498	1.348	18.866
2000	19.447	2.365	1.524	20.971

Source: Croatian Chamber of Economy, Croatian Bureau of Statistics

## 5. Mariculture

Sea bass and sea bream are the dominant farmed species in Croatia. Owing to Croatia's marine ecological setting, sea bass is deemed the more suitable of the two. Additionally, tuna are ranched in the Central Adriatic, and there is a very small production of several other commercial species. The two main shellfish species cultivated in Croatia are the European flat oyster and *Mytilus* (Table 18).

Table 18. Production of sea fish, oysters and mussels.

Year	Production					
	seabass	sea bream	other fish	oysters	mussels	total
1989	1.152	595	53	53	900	2.753
1999	1.300	450	19	52	1.100	2.921
2000	1.300	800	35	37	1.111	3.283

Source: Croatian Bureau of Statistics

Thirty-one companies farm sea bass and/or sea bream along the Croatian Adriatic and seven ranch tuna. Tuna production, according to export data, has increased dramatically from 39 t in 1996 to 1.100 t in 2000.

Nevertheless, it is the goal of the Croatian Government to increase annual mariculture production of fish to 10.000 t and that of shellfish to 20.000 t within next decade.

Currently, there is insufficient hatchery capacity in Croatia to support the demand of the grow-out sector. The shortfall of ca 8 million fingerlings for the 2000 stocking season was supplied through imports (mainly Sicily). Moreover, the labour force engaged is also rather low. Thus, it is necessary to set up 3-4 modern hatcheries, each of 12-15 million fingerlings annual capacity to meet the requirements of the mariculture sector. In addition, appropriate shellfish hatchery facilities should also be established. In the terms of feed, it would mean 22.000 to 28.000 T per year. The rapidly growing sector of mariculture demands extra labour force as well. The demand is estimated at 500 – 800 trained persons within the next ten years.

However, there are some problems regarding the range of the farming areas and the concessions needed to this end. Next issue will be the phasing out of the government incentives currently available for mariculture as well as the lowering of the import duties.

## **6. Fish processing industry**

Of the 59 fish processing plants operating after the World War II only 7 are still in business. These have enlarged their production capacities in the meantime, but the overall national output has fallen to the present 30.000 T a year. There is also 14.800 T of available refrigeration capacity, which provides about 2.500 jobs.

The Croatian processing industry has traditionally been canning small pelagics, mainly sardines, anchovies, etc., and the bluefin tuna. A typical product is canned sardine in vegetable oil, both in steel and aluminium cans. Other products include mackerel, sardines and sprat in vegetable sauce, smoked fillets in oil, etc.

Some of the companies are trying to diversify production to value-added products, such as marinated fish, frozen fish fillets, salted and smoked delicacies etc., yet with limited success compared with the less expensive imports.

Other companies have specialised in frozen fish products from both domestic and imported fish, developing a range of ready-to-serve products for supermarkets as well as restaurants. This pattern is particularly followed by the small entrepreneurs emerging over the past few years in the tourism sector.

Sterilized canned fish accounts for more than 90% of the total output of the fish processing industry. This narrow structured production needs to adapt to the markets that show an increasing preference for fresh fish rather than canned fish. Some traditional fish products, such as salted and smoked fish are much in demand on the limited but prosperous end of the consumer market. Only recently some small business are emerging, specialized in this type of production.

While sterilized canned fish accounts for more than 90% of the total output of fish processing industry, pilchard has by far the biggest share in it, while others (anchovy, bluefin tuna, mackerel) lag behind. The production assortment therefore has to be enriched and diversified as to meet different market requirements.

## 7. Export and import

Foreign trade has always been an exceptionally interesting feature of the Croatian fishery. In fact, fishery is the only sector within the Croatian food production industry that has maintained a positive balance of trade. The following tables contain data for the last three years (Tables 19 and 20).

Table 19. Export of fish and fish products by volume and value.

1998		1999		2000	
T	USD	T	USD	T	USD
19,11	43,374.795	17,70	35,059.348	18,25	43,977.357

Source: EUROFISH 1/2002, pp. 60

Table 20. Import of fish and fish products by volume and value.

1998		1999		2000	
T	USD	T	USD	T	USD
12,88	29,930.756	14,56	28,567.309	25,53	33,098.275

Source: EUROFISH 1/2002, pp. 60

There were, of course, certain oscillations in the foreign trade figures over the years. These can be explained by the amounts of stocks of particular species as well as the crisis in the fish processing industry (as one of the most important segments of the Croatian fishery). However, one should consider the fact that the imports have been on constant increase regardless of the fact that the purchasing power of the average Croatian family has not increased at all during the last decade.

The comparison between the quantity and value of the imports and exports points out that the differences between the imported/exported quantities are lower than those in values. It can therefore be concluded that the fish of lower prices and (presumably) quality is imported to the Croatia while the export consists of fish of higher price.

That would be in absolute concordance with the purchasing power of the average clients in Croatia and in the countries importing Croatian fish and fish products. Such a trend will continue until the purchasing powers become equal or until importing countries raise their import barriers.

### 7.1 Imports of fish and fish products

Although the imports of the fish and fish products do not make a significant part of the total imports of food, it seems worthwhile to analyse the structure of the imports in terms of possible substitution of at least some items by domestic products (Table 21).

The analysis shows that the structure of imports is stable. The following is the imports structure for the period between 1994 and 1998.

Table 21. Imports structure 1994-1998.

Year Import	1994		1995		1996		1997		1998	
	ton	000 USD	ton	000 USD	ton	000 USD	ton	000 USD	ton	000 USD
Fish	7.268	17.616	8.755	18.137	10.326	21.287	12.083	26.162	10.653	23.999
Fish products	1.707	3.418	1.881	5.138	2.789	6.814	1.371	4.109	2.201	5.931
Total	8.975	21.034	10.636	23.275	13.115	28.101	13.454	30.271	12.854	29.930

Source: Ministry of Finance; Ministry of Agriculture and Forestry

The quantities and types of imported fish change from year to year. However, most imports involve the following fish products: fish fillets (frozen), frozen molluscs as well as dried and salted fish. Moreover, it has to be noticed that Croatia imports products of low-priced fish, as well as that there is rather low consumption of fresh fish (of highest quality and price). It is quite obvious that Croatians import and consume fish and fish products of a lower price and lower quality, which corresponds to their purchasing power. However, it should also be stressed that a considerable part of the imported frozen fish goes to the fish processing industry. Moreover, another important issue is the import of "raw materials". For example, almost 2 million USD of imports in 1998 related to the live sea fish dedicated to fish production. Another interesting issue is that the foreign trade balance is negative in the cases of crustaceans, fish fillets and dried fish. As far as the countries exporting to Croatia are concerned, their structure is shown in Table 22.

Table 22. Countries exporting fish and fish products to Croatia (1998-2000).

Year Country	1998		1999		2000	
	000 USD	%	000 USD	%	000 USD	%
Argentina	3.698	12,35	2.813	9,85	1.688	5,10
Austria	1.688	5,64	548	1,92	1.034	3,12
China	468	1,56	843	2,95	1.837	5,55
Denmark	993	3,32	910	3,19	1.464	4,42
Germany	1.891	6,32	1.212	4,24	1.127	3,40
Iceland	573	1,91	1.061	3,71	992	3,00
Italy	6.018	20,10	4.163	14,57	4.527	13,67
The Netherlands	1.586	5,30	1.341	4,69	681	2,06
Norway	1.497	5,00	2.279	7,98	1.843	5,57
Poland	242	0,81	250	0,88	1.642	4,96
Slovenia	949	3,17	1.103	3,86	1.122	3,39
Spain	5.980	19,97	7.288	25,51	7.540	22,77
Sweden	46	0,15	847	2,96	1.420	4,29
USA	183	0,61	603	2,11	1.135	3,43
Other	4.119	13,76	3.306	11,57	5.046	15,24
Total	29.931	100,00	28.567	100,00	33.098	100,00

Source: Ministry of Agriculture and Forestry, Fishery Directorate

As it may be seen from the Table 22, the main exporters to Croatia are Spain and Italy, followed by Argentina. However, some new countries are entering Croatian market, such as China, Denmark, Poland, Sweden or USA. The main imported product from these countries is frozen fish (different species).

## 7.2 Exports of fish and fish products

In spite of a kind of trade isolation Croatian fishery faces, with exports of fish and fish products is stable and significant. At the moment, there is ca USD 25 million of surplus in the trade balance each year. Nevertheless, this situation can be further improved, based on the natural advantages and biological potentials.

To this end, it seems necessary to join international trade integrations and organizations. In that case, the Croatian fish export would certainly exceed the imports even more, especially regarding some traditional fish products (such as canned sardine, cultivated sea fish, some freshwater species etc).

According to the data provided by the Croatian Bureau of Statistics, export of fish and fish products represents 1,0-1,5% of total Croatian exports. The following Table, Table 23, contains data on exports for the period between 1994 and 1998.

Table 23. Exports of fish and fish products between 1994 and 1998.

Year Export	1994		1995		1996		1997		1998	
	ton	000 USD	ton	000 USD	ton	000 USD	ton	000 USD	ton	000 USD
Fish	10.705	31.837	8.230	25.917	7.336	27.078	11.806	33.807	7.989	21.205
Fish products	10.091	18.943	8.214	19.766	9.795	22.518	12.954	26.797	11.124	22.168
Total	20.796	50.780	16.444	45.683	17.131	49.596	24.760	60.604	19.113	43.373

Source: Ministry of Finance; Ministry of Agriculture and Forestry

It is quite obvious, though, that the prices of fish are much higher than for the fish products. Consequently, the fresh demersal species are most frequently exported.

On the other hand, most of the fish processed in the food industry in Croatia refers to the cheap small pelagic. Moreover, according to the same source, the highest revenue (ca USD 6 million) was gained through the tuna export (ca 600 tonnes). As far as fish products are concerned, the highest revenue (ca USD 20 million) is associated with the exports of ca 10.000 tonnes of canned sardine.

The differences in prices and their trends point out, beyond a shadow of doubt, that both biological and economic regularities have to be taken into account when creating development policy for the fishery sector. Naturally, they have to be expressed through the laws and regulations.

As stated before, there are two main parts of exports. The first refers to fresh fish and the other to canned sardines. Principal importers of the first group are Italy and Slovenia (almost

90% of total export), while the canned products go to the CEFTA countries, Austria, Czech Republic, Bosnia and Herzegovina, Macedonia and Slovakia. It seems reasonable to expect that such a structure of countries importing Croatian fish and fish products (as shown in Table 24) would remain the same during the next few years.

Table 24. Countries importing Croatian fish and fish products (1998-2000).

Year Country	1998		1999		2000	
	000 USD	%	000 USD	%	000 USD	%
Austria	4.117	9,47	2.225	6,34	1.835	4,17
Bosnia&Herzeg.	6.897	15,86	4.778	13,62	4.320	9,81
Czech Republic	4.324	9,95	2.529	7,21	761	1,73
Italy	11.940	27,46	11.259	32,09	10.017	22,74
Japan	6.012	13,83	5.075	14,46	13.349	30,30
Macedonia	2.343	5,39	3.008	8,57	1.905	4,32
The Netherlands	300	0,69	146	0,42	1.070	2,43
Slovakia	1.789	4,11	1.198	3,41	603	1,37
Slovenia	3.150	7,25	3.418	9,74	2.624	5,96
Spain	102	0,24	9	0,03	3.785	8,59
Serbia and Montenegro	-	-	664	1,89	2.119	4,81
Other	2.401	5,52	750	2,14	1,609	3,65
Total	43.375	100,00	35.059	100,00	43.977	100,00

Source: Ministry of Agriculture and Forestry, Fishery Directorate

Some changes, however, could happen due to the integration processes. In fact, the EU market used to be a main export market of the Croatian fishery sector up to the end of the eighties. Introduction of high import barriers (15-25% duty tax) in these countries resulted in a shift to the export destination countries' structure. However, they are still main importers of the fresh fish. At the same time, there were no such problems with the countries of the Central and Eastern Europe, which import fish products from Croatia.

Presently, there are some quotas and import duties imposed on the imported fish and fish products. However, having joined the WTO, Croatia has initiated the process of phasing out the import duties and quotas, especially those relating trade with the EU and CEFTA, as well as implementation of bilateral agreements (e.g. Slovenian case). Still, some products are and will not be allowed in Croatia, for example the meat and product of whales.

## 8. Croatian sea fish market

### 8.1 Fish prices

Croatian Ministry of Agriculture and Forestry set up the Agriculture Market Information System (TISUP) in 1998. It collects the prices (at county level as well as national level) of

various agricultural products, including sea fish (catch and mariculture) on monthly basis (since January 1998).

### **8.1.1 Prices of sea fish from fish production**

The prices indicated below (Table 25) are collected from the producers (fish farms).

Table 25. Average prices for sea fish from fish farms (Croatia).

(Kn; 1Euro= 7.60 Croatian Kuna)

<b>Fish/Year</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Mussels	6,43	13,37	-	-
Oysters	9,60	9,76	-	-
Sea bream (120-200 gr)	45,30	49,13	35,37	32,50
Sea bream (200 - 250 gr)	49,48	50,28	35,37	37,42
Sea bream (250 – 350 gr)	54,17	53,50	45,86	45,60
Sea bream (350 – 450 gr)	60,61	58,93	50,12	45,60
Sea bream (450 gr >)	67,97	65,34	58,87	51,40
Sea bass (150 – 200 gr)	43,77	44,45	34,04	36,25
Sea bass (200 – 250 gr)	48,28	48,02	39,06	41,30
Sea bass (250 – 350 gr)	54,25	52,14	45,35	57,40
Sea bass (350 – 450 gr)	60,03	56,69	49,79	57,40
Sea bass (450 gr >)	67,93	63,91	57,68	70,00

Source: TISUP

There is obviously a constant demand for sea fish from fish farms on the Croatian fish market. Comparing the two main fish sorts, sea bass and sea bream, and keeping in mind the natural conditions for their production (resulting in the quality of fish), it seems quite reasonable to expect somewhat higher prices of sea bass, regardless of its increasing supply. The sea bass price has been stable at 70,00 Kn/kg for a year and half.

### **8.1.2 Prices for sea fish catch**

The prices indicated below are collected at the purchase stations (Table 26).

Table 26. Average prices for sea fish catch (Croatia).

(Kn)

<b>Fish/Year</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Seabream I	59,76	29,00	44,00	40,50
Seabream II	18,00	14,33	26,15	28,00
Bogue	6,57	3,13	5,71	5,17
Monk fish	45,13	-	30,05	55,00
Silverisdes	16,53	7,97	5,50	6,92
Picarels	7,26	4,88	3,00	6,00
Amber-jack	23,00	12,95	15,00	14,00
Sting-ray	13,14	4,61	4,99	4,67
Angler-fish	21,23	24,72	30,45	25,67
Lobster	125,00	-	-	150,00

Octopus	23,38	21,85	21,00	21,15
Mussels	8,88	8,00	6,00	-
Soles II	19,80	25,33	14,78	33,67
Mackerel	6,80	5,67	5,00	6,19
Sea bass I	59,29	73,75	56,00	24,00
Sharks	17,12	16,73	20,42	19,30
Musky octopus	10,89	10,58	9,61	9,49
Cuttle fish	25,22	18,83	20,40	21,00
Pilchard	2,46	2,48	3,17	3,63
Horse mackerel	5,41	4,33	5,83	6,02
Norway lobster category I	80,45	79,96	85,91	102,44
Norway lobster category II	60,79	71,35	73,56	78,70
Norway lobster category III	20,04	27,77	28,18	34,07

Source: TISUP

These prices really do reflect the changes in the supply; there is virtually no rule, but the price depends upon the season and the catch volume. These are average prices for Croatia as a whole, but the prices across the counties also vary. However, these are the prices at the purchasing stations. These are also very specific and act as a wholesale stations. It should be pointed out that not all the catch is brought to these stations, and thus the data are not complete (e.g. previously contracted catches, direct sale, sale abroad etc.).

## 8.2 Available facilities

It can be claimed that the very basic precondition for fish and fish product trading are available refrigeration capacity. According to the data provided by the Ministry of Agriculture and Forestry of the Republic of Croatia, there are 66 production and crafts constructions registered for the storage of fish and fish products. In addition, there are 21 facilities registered for some other kind of food processing industry or trading that is, at the same time, licensed for the storage of fish and fish products.

Taking into consideration the number of these facilities, it can be argued that there are enough refrigeration capacities in each important fishing port or settlement to meet the needs of fish processing and trading. It should be stressed again that these capacities meet the EU standards.

However, since some of the facilities are multipurpose, it is rather hard to estimate precisely total capacity of refrigeration facilities dedicated to fish and other sea organisms. Nevertheless, it undoubtedly meets the needs of processing industry. In some cases there is even a surplus of the refrigeration capacities for a large number of enterprises operates below their real production capacity.

### 8.3 Agents at the Croatian fish market

At the very beginning, it should be clearly stated that the fishery sector marketing as well as fish markets are rather undefined, unorganised and therefore changeable depending upon the occurrences in the environment. Fish and other sea and freshwater organisms are sold mainly at wholesale level (purchasing stations in the case of marine catches; sometimes illegal/non-registered), while only a minimum part of them are sold at local fish markets. A substantial part of the total fish quantity is exported.

#### 8.3.1 Fishers

The very first agents in the “fish market chain” are fishers, i.e. those who possess the fishing licences (licences for professional fishing). Their number is recorded by the Ministry of Agriculture and Forestry, Directorate of Fishery (Table 27).

Table 27. Number of licences issued by the offices of the Directorate of Fishery (2001).

Office	No. of licences
Pula	707
Rijeka	520
Senj	55
Zadar	270
Šibenik	275
Split	650
Ploče	15
Dubrovnik	195
<b>Croatia total</b>	<b>2.687</b>

Source: Ministry of Agriculture and Forestry of the Republic of Croatia

The volume and structure of the Croatian fishing fleet is not the issue here, let us just point out that it is rather old and obsolete and therefore quite inefficient.

#### 8.3.2 Wholesale level

There are no fish markets in the Republic of Croatia. Thus, the fish distribution and trading system is not similar to those in the West European countries at all. In fact, fish and other sea organisms are usually sold directly from vessels or hatcheries to the wholesalers. They distribute the products to the market. Producer's distribution/sales network is rather rare.

The wholesale level comprises two kinds of enterprise. The first refers to the private wholesalers who purchase fish and other sea organisms directly from the fishermen/producers and then distribute them through the retail network. They operate through the so called “purchasing stations”. In fact, they are either independent firms or part of a larger company. In any case they are registered for export and must possess certificates issued by sanitary and veterinary authorities. There are 54 such stations in Croatia. Their territorial distribution along the coastal counties is shown in Table 28.

Table 28. “Purchasing stations” – territorial distribution.

<b>Coastal County</b>	<b>No. of stations</b>
Istria	18
Primorje & Gorski Kotar	7
Zadar	8
Šibenik – Knin	4
Split – Dalmatia	5
Dubrovnik - Neretva	2
<b>Total</b>	<b>39</b>

Source: D. Skoko; Croatian Chamber of Trades and Crafts

It seems necessary to stress here that none of these stations meet completely basic preconditions as wholesale marketplaces. In fact, in most cases the infrastructure (if any, especially on the islands), i.e. piers, warehouses, fridges etc., was constructed according to the needs of the fish processing industry. The collapse of the industry was not accompanied by the adequate state policy so that the facilities and the initiative were left to those with entrepreneurial spirit but with little or no capital, experience or knowledge of the matter.

The second kind of enterprise concerns those specialized in trade and/or processing of fish and other sea organisms. They also buy directly from the fishermen/producers and then channel the fish either to their own production or selling facilities. All those enterprise do not succeed in substituting fish markets, influencing a great deal trade, fish supply and price as well as fish consumption.

### **8.3.3 Retail network**

Retail trade is mainly based on small private shops. According to the Croatian Chamber of Trades and Crafts there are 108 traders registered to sell fish within the retail network. They i.e. their small shops make the basis of the retail network for fish and fish products.

At the same time, large companies involved in the fish and fish products retail sale are almost non-existent. In fact, large enterprises are focused on wholesale or exports.

It should also be noted that there are two additional ways of fish trading (retail sale). One of them is typical for the settlements along the coast and is based on local, public fish markets. Fishermen rent a post within the fish market for a day or longer and sell their fish and other sea organisms there. The second refers to the continental part of the country where fishermen supply their own or rented shops and fish markets. The supplies consist of the catches of their own and/or other acquired species and goods.

### **8.3.4 Supply of fish and fish products at the Croatian fish market**

Supply of fish and fish products reflects the conditions in the overall fish trading system. In short, it is rather small in comparison with the production and consumers potentials.

Brief analysis of the market shows that the levels of supply differ in terms of various fish products:

- The best is the supply of the products of the fish processing industry (cans). These products are mainly domestic but also imported and sold throughout the retail network (a large number of food stores and markets). Their advantages are duration and affordability.
- The supply of the "fast food" products is somewhat worse, although it implies various sources and distribution channels. These products encompass dried, smoked or salted fish. Actually, the demand for these articles is always higher than the offer, especially considering diversified assortment.
- The worst is the situation regarding the supply of fresh fish. The reasons are not to be found in small catches or production, but poor organization of fish trading and sales as well as consumers' preferences to meat over fish. Therefore, concerning new trends towards natural and healthy food, it could be expected that demand for fresh fish would increase. The supply side would have to accommodate changing demand.

On the other hand, analysing the supply from the standpoint of domestic/imported products, the following can be concluded:

- Most cans are produced in Croatia;
- The largest portion of the frozen and "fast food" fish products comes from imports, especially referring to the species not caught in the Adriatic Sea;
- Domestic catch/production meet the demand for fresh fish almost entirely. Imports are not significant in the terms of either quantity or value.

Consumption of fish and fish products is significantly influenced by the traditional attitudes and habits in different regions of Croatia. In general, it can be stated that the population in coastal zone consumes far more fish and fish products than the population in the hinterland.

There are numerous estimations of fish consumption in Croatia. They point out that the average Croatian consumes 5-9 kg of fish per year. However, it must be observed that almost all of them were based on total catches, enlarged by imports and diminished by exports. Taking into account rather unrealistic data on total catch, these estimations are not concerned reliable. Moreover, analyses show that real total catch is ca 20-30% higher than official figures, so that the average fish consumption should be corrected by the same percentage.

### **8.3.5 New initiatives**

The Croatian fish market is not organized and is weakly regulated. Distribution and trade channels need to be improved and made more efficient so as to make fish trading simpler and cheaper. Within such a framework, the discussion on fish market has been going on for some time now, but the agreement on what should be done has not been achieved.

According to the recent national strategy of the marine fishery development, several new fish markets should be established. "Fish market" implies a wholesale fish market with auctions.

It is the firm belief of the Ministry of Agriculture and Forestry that such a type of fish market would efficiently regulate the supply and demand. First, fishers would benefit from it since they would no longer depend on traders and would be able to sell their catch directly at the market. At the same time, such a market guarantees the quality of fish. Secondly, this fact is

beneficial for the customers. Thirdly, state administration can pursue an accurate and efficient monitoring system over the sea resources as well as over the market prices, supply and demand. This would be of ultimate importance when deciding upon the policies towards the fishery sector. Fourthly, the number of “mediators” at the fish market would be significantly reduced, ultimately resulting in real prices of fish.

The state is willing to take some steps in this direction. Besides the strategy of fishery development and some consequent directives, it approved the two fish market projects, one in Pula (Istria) and the second in Komiža (island of Vis). The designs are completed, financial sources found and the realisation should begin soon.

## **9. Notes on data collection methodology**

### **9.1 Data and methods of data collection**

For the purpose of fishing surveys and basic indicators in the area of freshwater and marine fishing, data are collected on personnel, basic fishing means, vessels, fishing equipment, catches and production of sea and freshwater fish, crustaceans, oysters and shell-fish, production of milt, consumption of food and fertilisers in fishponds.

Data are collected separately for legal entities and their parts, as well as for private independent fishermen engaged in professional fishing (the Law on Marine Fishing, Narodne novine, official gazette of the Republic of Croatia, No. 74/94) or in production of sea fish and other sea creatures. Data for legal entities and their parts in fishing are collected through regular annual reports.

Data on fishermen, vessels and their equipment were obtained from the Office of Economy until 1997, and since 1998 the Ministry of Agriculture and Forestry - Administration Office for Marine Fishing Industry has taken responsibility for the records on the number of fishermen, fishing vessels and their equipment, which are based on the licences issued for engagement in professional fishing. Data are collected once a year.

Data on catch and production of sea fish are given by major groups through presentation of the total unloaded catch weight including all fishing means used in the respective quarter, irrespective of the catching area. It comprises the quantity of fresh fish unloaded, i.e. actual catch lessened by the quantity of fish that was, for no matter what reason, discarded from the total quantity in the period from the moment of catch until unloading. Data on crustaceans and shellfish refer both to edible and non-edible catch weight.

Data on fishermen, vessels and fishing crafts, fishing equipment, quantity of food, fertilisers, energy and fuel consumed, value of material used and services done are collected once a year.

## 9.2 Coverage and comparability

Reports comprise legal entities and their parts as well as independent fishermen engaged in the activity defined in the NCEA under section B Fishing and other legal entities and independent fishermen engaged in the above said activity but classified somewhere else. The coverage of legal entities and their parts is full, while that of independent fishermen engaged in marine fishing is selective, that is, it is defined by the turnover realised in professional catches.

## 10. Definitions

*Fishery sector* comprises marine and freshwater professional fishing and aquaculture as well as the fish processing industry.

*Professional fishing* is an activity of catching fish and other sea creatures for profit (the Law on Marine Fishing - purified text, Narodne novine, official gazette of the Republic of Croatia, No. 47/97).

Besides professional fishing, there is also *small-scale fishery* as well as *sports and recreational fishery*. The data on these activities are not outlined in the analysis.

*Crustaceans* are lobster, shrimps and other crustaceans. *Other molluscs* and *shellfish* are: mussels and other shellfish, squid, cuttlefish, octopus and musky octopus.

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Croatian Chamber of Trades and Crafts -- [www.hok.hr](http://www.hok.hr)  
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