

Pavel Salz
Erik Buisman
Jos Smit
Birgit de Vos

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Framian BV

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Employment in the fisheries sector: current situation (FISH/2004/4)

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LIST OF ABBREVIATIONS

AER	Annual Economic Report, Economic Performance of Selected European Fishing Fleets (various issues)
Drom	Département et région d'outre-mer
EU	European Union
F	Female
GMDSS	Global Marine Distress and Security System
GT	Gross tonnage
kW	kilowatt
M	Male
MoA	Ministry of Agriculture, Fisheries Department
MS	Member State(s)
NSO	National Statistical Office
STCW-F	Standard of Training, Certification and Watch keeping - Fishing

Countries

At	Austria
Be	Belgium
Cy	Cyprus
Cz	Czech Republic
Dk	Denmark
Ee	Estonia
Fi	Finland
Fr	France
De	Germany
Gr	Greece
Hu	Hungary
Ie	Ireland
It	Italy
Lv	Latvia
Lt	Lithuania
Mt	Malta
Nl	Netherlands
Pl	Poland
Pt	Portugal
Sk	Slovakia
Si	Slovenia
Es	Spain
Se	Sweden
Uk	United Kingdom

1. Objectives

The objectives of the study can be formulated as follows:

- to present a comprehensive ‘snapshot’ of the current structure of employment in the fisheries sector at country level and at NUTS II level in the coastal regions;
- to elaborate an analysis of employment situation in the four large European regions – Mediterranean, Baltic, North Sea and Western Waters;
- to identify main trends which have lead to the present situation; and
- to review the educational level of people working in the catching sector in relation to recent technological progress.

2. Terms of reference

The tender document specified the tasks as follows:

Task 1: Present situation of labour in the fisheries sector

1. Number of people (by gender) working in the sector and each of the sub-sectors, for each one of the coastal regions (NUTS II) and for each of the 25 MS, as well as totals for Europe;
2. At the same 3 levels (regional, national and European), data on the proportion of people working in the fisheries sector (as part of the total working population);
3. Age pyramids (by gender) of employment in the sector for each MS, and age pyramids for the whole working population of the MS (which will enable useful interpretation);
4. Earning levels per sub-sector and gender-related differential in earnings (national level);
5. Number of persons per vessel per type of vessel (distinguishing coastal fishing / deep sea), for each MS;
6. Number of foreigners employed by sub-sector, for every MS;
7. The proportion of boat owners / deckhands and the proportion of part-time jobs / full-time-equivalent jobs, for every MS;
8. Level of formal education and professional training of people working in the catching sub-sector, per MS; (this point is one of the crucial parts of this Task 1 and should be accompanied by an analysis of the main needs in this field, taking into account technical evolution in the recent past);
9. Number of people working in the sector, weight on the total working population and earning levels for each of the four big European fishing areas: Mediterranean, Western European Waters, North Sea and Baltic. The contractor should define these fishing areas, aggregating the relevant regions belonging to each of the areas, using a clear criteria.

Task 2: Evolution over the last 10 years

10. Describe the recent trends of evolution that lead to the situation described in Task 1. How the structure of employment in each sub-sector changed for the last 10 years. Interpret this evolution and relate it with the main factors that influenced it (weak resource basis, catching limitations, international agreements, technological evolution, increased imports of raw fish, other relevant factors). The approach to this task, although data should still be presented for each of the 25 MS (in a less detailed fashion than in Task 1), is likely to be more European as the factors explaining the evolution of the level and characteristics of employment in the sector are frequently supra-national.

3. Methodology

Data collection procedure

The data collection processing was based on the following steps:

- Compilation of directly available statistics and studies;
- Compilation of extensive lists of information sources (ministries, national statistical offices, national and regional professional organisations, chambers of commerce, etc.);
- Preparation of specific questionnaires per type of source;
- Direct contacts with the resource institutions and persons by telephone (some 20 native speakers contacted all possible sources of information by phone, carried out oral interviews, sent questionnaires by e-mail and re-called in order to receive answers back);
- Compilation of received data into standard tables and assessment of consistency and reliability.
- After the completion of the data collection, the national statistical appendices, as presented in the report, were submitted to ministries responsible for fisheries in each Member State for comments. Confirmations or comments were received from 23 MS¹. Proposed corrections were included in this final version of the report.

The details of the approach were presented to the Commission in the Inception Report of the project in May 2005.

General remarks regarding data

General

Employment in the fisheries sector has been structurally decreasing for many years. Consequently, also its role in terms of employment is becoming less pronounced, even in localities which are traditionally highly dependent on fishing.

Fisheries sector seldom contributes more than 0.2% of the employment in the coastal NUTS-2 regions. Availability of detailed statistics is therefore rather poor. National totals for employment in fishing, fish processing and aquaculture are mostly available, although not for all country/sub-sector combinations. Distinction by gender and regional distribution had to be estimated for many MS on the basis of historical data or national averages.

Some data is not available at all for most countries. This regards particularly quantitative information on nationality and educational level. Regarding these two topics an EU-wide assessment has been elaborated on the basis of scarce indications from a limited number of countries. For these two topics, not even estimates are feasible on national level.

¹ Spain was not able to respond. Luxembourg was not approached.

A general overview of data availability from national sources required for this study is presented in the following table.

Table 3.1 General indication of data availability regarding fisheries sub-sectors, excl proxies

	Fishing	Fish processing	Aquaculture
National level			
- Total	Most MS	Available in most MS	Available in most MS
- Gender	General indication for most MS	Some MS	Very few MS
Regional level			
- Total	Most MS	Some MS	Very few MS
- Gender	No	No	No
Income level			
- Total	Source: AER	Very few MS	No
- Gender	No	No	No
Age distribution			
- Total	Some MS	Very few MS	No
- Gender	No	Very few MS	No
Nationality			
- Total	Very few MS	No	No
- Gender	No	No	No
Education	Very few MS		
Ownership	No		
Full / Part time	Very few MS		
Coastal / Off-shore	EU fleet register		

Reference period

It was attempted to indicate as precisely as possible the year to which the data refer, relying on information obtained from the MS. However, the reference point in time may differ 12 months among the MS. The figure for a specific year can be taken on 1.1, 31.12 or an average of the two. It was not feasible within this study to determine these details.

Fishing

Total employment in marine fishing is available for most MS. This number includes people working on board fishing vessels. However, the definitions used by various MS are not necessarily comparable for the following reasons:

- Mostly the provided number does not refer to full time equivalents, but rather it is a sum of people working full time and part time in fishing. Definitions of FT/PT vary by country (see below);

- Fishing and collecting shellfish is in some countries included in marine fishing and in others not. Definitions are not always clear;
- Employment in fishing companies on shore is not included. This is considered correct, as otherwise secondary linkages to other activities, particularly administration and accounting would also have to be included. However, this approach obscures the role of women in small fishing companies.

Fish processing

Data on total employment in fish processing can be found in most MS. In most cases it is consistent with historical data available from earlier studies. However, the following comments must be made:

- It is not always possible to determine whether the data contains wholesale trade or not. The distinction is also not simple to make, as some kinds of primary processing do not require complex equipment and can be done in temporarily rented work spaces.
- Distinction between full time and part time is not made, while it is well known that many processors use ‘call-labour’, paid by hour. Seasonality of some processing activities is quite high. Employment in terms of full time equivalents could not be estimated.

For brevity of the text, the term ‘fish processing’ is defined in this report to include also the wholesale trade.

Aquaculture

Data is available on most member states. In most cases it seems consistent with historical data available from earlier studies. Similarly to fish processing, distinction between full time and part time employment can not be made, so that employment in full time equivalents cannot be estimated.

Inland fishing

Most MS could indicate the number of persons involved in commercial inland (fresh water) fishing, usually on the basis of the register of permits. The numbers of inland fishermen are small and little or no research has been carried out in this area. Interpretation of the figures faces therefore various problems.

Regional distribution

Regional distribution of employment on board could be obtained from most MS. In the countries where recent data was not available, the regional distribution was estimated either on the basis of historical data (1999 studies) or on the basis of the distribution of the fleet contained in the EU fleet register.

Regional distribution of the processing industry is available only for some MS. The national total was usually extrapolated on the basis of available historical data. A similar approach was followed for aquaculture.

In general it must be pointed out that out 120 coastal NUTS-2 regions, in only 35 regions employment in fishing, fish processing and aquaculture exceed 1,000 persons and contributes more than 0.5% to the total regional employment. Such small figures are inherently statistically unreliable, unless based on a well designed detailed survey.

Gender distribution

In general there are very few women employed in marine fishing. Most interviewed experts confirmed this. Figures for several countries (Italy, Greece and Portugal) show relatively high percentages of women. It is likely that these women are in fact involved in other activities, e.g. collecting shellfish, and are not on board vessels. Earlier study 'Women in fisheries' confirms that the number of women working directly in marine fishing is very low. Available statistics take the fishing fleet as a starting point and not the fishing firm. Consequently, activities of women on shore are disregarded.

Number of women in fish processing and aquaculture is mostly not available and had to be assumed on basis of rough or indirect indications. Although the estimates may not be precise, they offer a good indication in the sense of 'order of magnitude'.

Regional distribution by gender is not available for any MS or sub-sector. National ratios (macro or comparable sector level) were therefore used for all regions. There is little reason to expect that marked regional differences would occur in this respect.

Income levels

Income level in the marine fishing is based on the Annual Economic Reports (AER). The aggregate national crew share is divided by the number of people working on board. With the current level of knowledge this is the only estimation feasible. As by far most people in this sub-sector are males, a gender distinction was not considered relevant. The presented income levels in marine fishing are certainly affected by the fact that the distinction between full time and part time fishermen could not be applied to the income levels, without making far reaching assumptions. Therefore it can be expected that in some countries incomes of full time fishermen are in fact higher than those indicated and for part time fishermen (who may have other sources of income) it is lower.

It is important to stress that AER does not cover the total national fleet for all MS. It presents data on larger commercial fisheries, where earnings may be (substantially) higher than in small scale coastal fishing. Therefore it is not possible to calculate the total remuneration of crew in one MS by simply multiplying the indicated average wage with the number of crewmen, without detailed review of the data which lies on the basis of the presented figures.

Data of incomes in fish processing and aquaculture are not available for almost any country. Therefore Eurostat data was used relating to larger sectors or occupational groups:

- income in fish processing is based on manufacturing;
- income in aquaculture is based on the occupational group ‘craft and related trades workers’ (isco7).

This approach can be justified, considering that in an integrated economy, the income levels in comparable sectors are to a certain extent similar. The advantage of using Eurostat data is the consistency of definitions, incl. the gender distinction.

Age distribution

Only fragmentary data is available regarding age distribution in marine fishing, while almost none is available for fish processing and aquaculture. The available age distributions usually referred to different age classes than those required for the purpose of this study. This is not surprising in view of the small size of these sectors.

In order to provide a consistent picture, a general age distribution model was prepared, containing detailed distribution by sub-sector and gender. The available national data was re-estimated into the standard age classes. For sub-sectors for which data was not available, the assumed EU averages were used. For marine fishing no gender distribution was applied.

The aggregate age distribution of the total fisheries sector gives usually a slightly higher average age than the national average, obtained from Eurostat.

Coastal and off-shore fleet

Estimates of employment in coastal and off-shore fleet were derived as follows.

Coastal fleet was defined as vessels of less than 10m using towed gears and vessels of less than 12m using non-towed gears. Larger vessels are defined as off-shore fleet.

Data (number of vessels, kW and GT) was obtained from the EU fleet register (in April 2005) by port of registration for seven fleet segments:

- Non-towed gears, <10m
- Non-towed gears, 10-12m
- Towed gears, <10m
- Towed gears, 10-12m
- All gears, 12-24m
- All gears, 24-40m
- All gears, >40m

NUTS-2 and NUTS-3 codes were assigned to almost all ports of registration (over 2,100). Totals of the segments were determined for NUTS-3, NUTS-2 and country level.

Approximate average crews per size/type of vessel were derived from AER and applied to the data from the EU fleet. The average crews were subsequently adjusted in an iterative procedure in such way that the sum of the crew would equal (or at least approach) the regional and national employment obtained from other sources. Consequently employment for all seven above segments per NUTS-2 and NUTS-3 region was obtained, from which the sums of employment on board coastal and off-shore vessels could be derived.

Ownership of fishing vessels: owners and deckhands

Statistics on distinction between owners and deckhands do not exist. This is at least partly caused by the fact that there is not one single definition of ‘owner’, which may be a private person as well as a legal person, e.g. limited company, etc. Therefore, in most countries the number of owners was based on the assumptions of one-man-one-boat, which is consistent with the traditional skipper ownership. In this way it was possible to avoid the definition issue. However, in some countries the number of coastal vessels appeared to be larger than the estimated number of coastal fishermen. In those instances the latter number was used as the number of owners in that segment.

This procedure leads to an average number of crewmen (incl. owner) on off-shore vessels of 5.8, which is realistic.

Full time – part time employment in fishing

Most countries cannot provide any data on this item. The definitions of full time and part time are also very different. In some countries it refers to time spent at sea (e.g. France) in other countries to the level of income obtained from fishing (Denmark, Finland). For most countries therefore estimation was made on the basis of the EU fleet register. When no other data was available it was assumed that 50% of the men working in coastal fishing are part timers. Men working on board off-shore vessels and 50% of the coastal employment are then assumed to work full time in fisheries.

Nationality

Only a few countries were able to provide indications on the numbers of foreigners working in the fisheries sector. The information was so fragmented that only a general discussion on EU level can be presented.

Educational level

Only a few countries were able to provide indications on the level of education in the fishing sub-sector. Use was made of the REFOPE report and a large survey of fisheries schools was carried out by e-mail and telephone.

Historical data

Historical data on employment by sub-sector refers mostly to years 1988/90 and 1996/98. It is drawn from the 1991 and 1999 regional studies and from the Annual Economic Reports. For countries which were not covered in these sources (the new MS), FAO fishery country profiles were used, if the data was considered realistic.

Historical data on value of landings refers to 1997/98 for the old MS. For most new MS with marine fishing, long time series are not available.

Extrapolation to 2005

It was considered useful to bring the employment data for all countries to one base year. Therefore recent growth rates were extrapolated up to 2005. In countries or sub-sectors where additional information was available or the growth rates could not be calculated, an approximation based on expert judgement is presented.

Main fishing ports

In order to pinpoint in detail the main localities of concentration of fishing, the report presents for each country approximately 10 main fishing ports (based on registration), using engine power (kW) as the criterion. The share of these ports in the national fleet in terms of number of vessels, kW and GT is presented as well as location of the ports by NUTS-2 region. This information was drawn from the EU fleet register.

Definition of the four main regions

Chapter 5 presents main findings according to 4 main regions. Allocation of fleets and employment to those regions is based on the geographic location of the NUTS-2 regions. Only three NUTS-2 regions have a coastline in two different areas: Denmark and Schleswig-Holstein (both lie on North Sea and Baltic coast) and Andalusia (on Mediterranean and Atlantic coast). In these three cases fleet and employment were divided between the two areas according to location of the specific fishing ports. The Channel was included in the Atlantic (Western Waters) area.

The criterion used is the geographic location of the home ports of the fleets, not the sea area of their activity. This is appropriate as the study focuses on regional distribution of employment.

4. Presentation of the report

The Report is largely of statistical nature. Main conclusions on EU and regional level are presented in chapter 5. 'Main findings'. This chapter presents also main conclusions regarding the four regions.

Further chapters are dedicated to discussion of trends in the fisheries sector and its three sub-sectors (chapter 6), the educational level of fishermen (chapter 7) and employment of foreigners (chapter 8).

Finally, the 25 statistical country sections are all composed of 3 parts:

1. Summary, tables 1-6
 1. Trends in the fisheries sector, employment by sub-sector, incl. annual rates of change.
 2. Fisheries dependence, with employment in total fisheries sector and marine fishing by NUTS-2 region and the respective dependence rates.
 4. Average age in national economy and the fisheries sector, determined on the basis of table 9.
 5. Fleet and employment characteristics, shows the relation between employment and size of the fleet in coastal and off-shore fishing.
 6. Nominal and real (after inflation) value of landings (mln euro).
2. Details, tables 7-10
 - 7a. Employment by region and gender – national total and total fisheries sector.
 - 7b. Employment by fisheries sub-sector, region and gender.
 - 8a. Earning levels in the national economy and total fisheries sector.
 - 8b. Earning levels by fisheries sub-sectors.
 9. National and total fisheries sector employment by gender and age category
 10. Characteristics of employment in marine fishing
3. Sources and estimations
 - Presents for each type of data contained in tables 1-10 source and/or approach to estimation.
 - Data obtained from national sources or other published information is printed 'normal'. All estimations, i.e. data which was calculated by the project is printed in *'italics'*.

5. Main findings

The Report presents data on employment in the fisheries sector and its three sub-sectors (fishing, fish processing and aquaculture) in 25 EU Member States and the NUTS-2 regions. There are five land-locked countries. For the 20 coastal states data is presented for 121² coastal NUTS-2 regions.

The interpretation of dependence of the NUTS-2 regions on fisheries is complicated by the significant variation in the size and population of the NUTS-2 regions, which range from less than 20,000 inhabitants (Åland - Fi, Ceuta - Es) to over 4 million in Denmark. The average population is about 740,000 inhabitants.

Unless stated otherwise the presented figures refer to years 2002-2003.

5.1 EU overview

1. The total employment in the fisheries sector amounted in 2002/2003 to about 421.000³ persons, of whom 405,000 were active in the coastal regions of the EU and 16,600 in the inland areas and the French Drom. It is estimated that one third of this number are women, who are mostly employed in the fish processing industry.
2. In 2002/2003 there were some 209,000 persons working on board fishing vessels, of whom about 3,500 in the French Drom. The number of fishermen has been decreasing since 1996/1997 by 4-5% per year. This means that the number of fishermen in the EU-25 (excl. Drom) can be estimated at about 190-195,000 in 2005.
3. The number of people working in the fisheries sector is most numerous in the Atlantic and the Mediterranean areas, 42% and 28% of the total.
4. Spain, Greece and Italy account for almost 60% of all people working in the fishing sub-sector. The total numbers of fishermen are also substantial in France and Portugal, each representing about 10% of the EU total. The fish processing industry employs most people in Spain, France and the United Kingdom, and to lesser extent in Germany and Poland. Aquaculture is most pronounced in France and in Spain.
5. Some 99,000 fishermen work on board coastal vessels, while 110,000 fishermen are active on off-shore fleet. It is estimated that about 20% of the employment on board is part time, mainly in the coastal fisheries.
6. In the beginning of 2005 74,200 coastal vessels (of which 62,400 were less than 10m using non-towed gears) and 18,900 off-shore vessels were registered in the EU fleet register. In view of the traditional skipper-ownership in most fisheries, it is estimated that there are some 84,300 vessel owners and 124,600 deckhands.

² Two German regions were merged due TO lack of data, but will be separated in the final report.

³ This is sum of full time and part time, not full time equivalents.

7. The large population of many NUTS-2 regions reduces the relative dependence of these regions on fishing. Galicia is indisputably the most important fisheries region in the EU in terms of absolute number of people working in the fishing sector, showing also one of the highest dependency rates. Other regions, showing a dependency rate over 1% and with number of persons working in the fisheries sector in excess of 5,000 can be found in France (Bretagne, Poitou-Charente, Basse-Normandie), UK (N-E Scotland), Estonia, Latvia, Portugal (Algarve) and Poland (Pomorskie). Several relatively small NUTS-2 regions show high dependence in Greece. In order to pinpoint more precisely the locations of main concentration of the fishing industry the national chapters present the ten major fishing ports of each country (based on the fleet size in kW).
8. There are marked differences in the structure of employment in the fisheries sector in the four distinguished regions. In the North Sea and Baltic region about 30% of people working in the fisheries sector are on board fishing vessels, 65% work in the processing industry and about 5% in aquaculture. The role of aquaculture is little more pronounced in the Baltic, at the expense of processing. On the other hand, marine fishing is much more important in the Atlantic areas and in the Mediterranean, representing a relative share of 46% and 76% respectively. Atlantic areas have also a major fish processing industry (56,000 persons), with a share of 31% in employment of the fisheries sector. Processing in the Mediterranean represents only 14%. Finally, Atlantic aquaculture accounts for 22% of the in the fisheries sector and in Mediterranean this is 10%. About 50% of the employment in aquaculture can be found in the non-coastal NUTS-2 regions
9. The main problems facing the fishing industry are increasing fuel costs, crew shortages and limitations of quota and fishing effort.
10. The survey carried out in the course of the project has revealed the two following issues of concern to the aquaculture sector: increasing competition from imports and technological progress. Among the minor issues were: depressed prices, costs and risks of transportation, environmental legislation and user conflicts
11. The main problems facing the processing industry are supply of raw material, relatively high labor costs and increasing competition from extra-EU imports.

Table 5.1 EU overview – employment by country and fisheries sub-sector, 2002-2003

Member State	Total employment (*1000)	Total fisheries sector	Fisheries	Fishing	Processing	Aquaculture
			sector as % of total employment			
Austria a)	3,736	734	0.0%		234	500
Belgium a)	4,070	1,743	0.0%	666	993	84
Cyprus	327	1,175	0.4%	926	122	127
Czech Rep.	4,701	2,267	0.0%		100	2,167
Denmark	2,707	14,060	0.5%	4,258	8,948	854
Estonia	594	6,700	0.0%	2,500	4,100	100
Finland	2,365	2,740	0.5%	900	1,339	501
France b)	24,584	64,712	0.3%	21,436	21,676	21,600
Germany a)	35,927	16,409	0.1%	1,972	11,404	3,033
Greece	4,042	37,701	0.9%	30,196	3,360	4,145
Hungary a)	3,922	1,680	0.0%		150	1,530
Ireland	1,797	10,584	0.6%	5,147	3,439	1,998
Italy	22,054	47,957	0.2%	38,157	6,708	3,092
Latvia a)	1,007	10,580	1.1%	3,670	6,484	426
Lithuania	1,433	6,565	0.4%	2,550	3,700	315
Luxemburg						
Malta a)	148	1,441	1.0%	1,303	33	105
Netherlands	8,121	9,049	0.1%	2,547	6,382	120
Poland	13,617	19,923	0.1%	4,500	13,423	2,000
Portugal	5,118	33,229	0.6%	20,457	6,300	6,472
Slovak Rep.	2,162	1,180	0.1%		947	233
Slovenia	897	623	0.1%	132	237	254
Spain a)	16,695	92,777	0.5%	53,849	27,000	11,928
Sweden a)	4,314	3,955	0.1%	1,912	1,843	200
United Kingdom	28,696	33,534	0.1%	11,774	18,180	3,580
Total	193,034	421,318		208,852	147,102	65,365
- male		310,152		200,231	64,944	44,978
- female		111,165		8,621	82,158	20,386

a) 2004-2005; b) incl. Drom.

Table 5.2 Development of employment by sub-sector, 1997-2003⁴

Member State	Fishing		Processing		Aquaculture	
	1996-1998	2002-2003	1996-1998	2002-2003	1996-1998	2002-2003
Belgium	750	666	1,261	993	137	84
Denmark	4,600	4,258	8,600	8,948	800	854
France	19,395	21,436	11,258	21,676	10,761	21,600
Germany	2,932	1,972	11,282	11,404	2,865	3,033
Greece	41,125	30,196	2,409	3,360	3,157	4,145
Ireland	5,494	5,147	3,262	3,439	2,198	1,998
Italy	43,547	38,157	6,447	6,708	6,523	3,092
Luxemburg						
Netherlands	2,686	2,547	6,052	6,382	312	120
Portugal	32,178	20,457	6,475	6,300	6,400	6,472
Spain	68,275	53,849	23,945	27,000	23,761	11,928
United Kingdom	16,655	11,774	17,682	18,180	2,727	3,580
Austria			100	234	800	500
Finland	1,005	900	1,028	1,339	624	501
Sweden	2,648	1,912	1,993	1,843	364	200
Total EU-15	241,290	193,271	101,794	117,806	61,429	58,107
Cyprus	970	926	350	122		127
Czech Rep.				100	2,149	2,167
Estonia	6,070	2,500	6,200	4,100		100
Hungary				150		1,530
Latvia		3,670		6,484		426
Lithuania		2,550	3,400	3,700		315
Malta		1,303		33		105
Poland	9,400	4,500	17,400	13,423		2,000
Slovak Rep.				947		233
Slovenia	92	132		237	129	254
Total		208,852		147,102		65,365

⁴ The definitions of employment measurement may have changed between the two periods. See also statistical appendices on the various countries.

Table 5.3 Employment by main region and fisheries sub-sector, 2002-2003

Region name	National total				
	(*1000)	Fisheries total	Fishing	Processing	Aquaculture
North Sea	25,769	51,826	15,085	35,136	1,605
Baltic Sea	24,366	56,279	17,652	34,875	3,752
Atlantic areas	25,630	178,778	82,895	55,764	40,119
Mediterranean Sea	36,263	117,856	89,767	16,260	11,829
Other areas	80,986	16,580	3,453	5,067	8,060
Total	193,014	421,319	208,852	147,102	65,365

Table 5.4 Characteristics of employment in marine fishing, 2002-2003

Member State	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deckhands	Full time	Part time
Austria						
Belgium	0	666	50	616	666	0
Cyprus	657	269	549	377	926	0
Czech Rep.						
Denmark	1,262	2,996	2,143	2,115	3,788	470
Estonia	1,095	1,405	1,435	1,065	2,500	0
Finland	408	492	584	316	545	355
France	9,093	12,343	6,782	14,654	11,930	9,506
Germany	352	1,620	1,415	557	1,795	177
Greece	22,212	7,984	18,606	11,590	21,137	9,059
Hungary						
Ireland	2,430	2,717	1,425	3,722	3,932	1,215
Italy	12,692	25,465	14,945	23,212	32,103	6,054
Latvia	2,230	1,440	755	2,915	1,541	2,129
Lithuania	392	2,158	283	2,267	196	2,354
Luxemburg						
Malta	870	433	986	317	455	848
Netherlands	0	2,547	530	2,017	2,477	70
Poland	1,775	2,725	1,286	3,214	3,612	888
Portugal	14,250	6,207	10,332	10,125	13,332	7,125
Slovak Rep.						
Slovenia	52	80	92	40	81	51
Spain	22,849	31,000	13,505	40,344	53,311	538
Sweden	606	1,306	1,500	412	1,660	252
United Kingdom	6,013	5,761	7,068	4,706	9,242	2,532
Total	99,238	109,614	84,271	124,581	165,229	43,623

Table 5.5 Classification of the NUTS-2 regions according to the role of the total fisheries sector, 2002-2004

Fisheries sector as % of total employm.	Number of employed persons in the fisheries sector					
	> 10,000	7,500-10,000	5,000-7,500	2,500-5,000	1,000-2,500	< 1000
> 2.0%	es11 Galicia	pt15 Algarve	ukm1 NE Scotland	gr24 Sterea Ellada pt20 Açores gr41 Voreio Aigaio gr42 Notio Aigaio	gr22 Ionia Nisia	es63 Ceuta
1.0-2.0%	fr52 Bretagne lv Latvia	fr53 Poitou-Charentes	pl63 Pomorskie ee Estonia fr25 Basse-Normandie	ukm4 Highl. and Islands ie01 Border, Midl., West. uke1 E. Riding, N. Linc. es13 Cantabria de50 Bremen gr25 Peloponnisos gr11 An. Maked., Thraki	nl23 Flevoland fr92 Martinique gr21 Ipeiros fr91 Guadeloupe	fr93 Guyane fi20 Åland
0.5-1.0%	dk Denmark es61 Andalucia itg1 Sicilia		itf4 Puglia es21 Pais Vasco gr12 Kentriki Makedonia	pl42 Zach. Pomorskie es70 Canarias fr81 Lang.-Roussillon itg2 Sardegna itf6 Calabria es62 Murcia	es12 Asturias gr23 Dytiki Ellada gr43 Kriti gr14 Thessalia mt Malta ukd1 Cumbria ukk3 Cornwall, Isl. Scilly nl34 Zeeland	pt30 Madeira fr83 Corse
0,1-0,5%		pt11 Norte	es51 Cataluña lt Lithuania ie02 South. and Eastern es52 Valencia pt16 Centro fr30 Nord - Pas-de-Calais fr51 Pays de la Loire	gr30 Attiki fr61 Aquitaine itd3 Veneto itf3 Campania de93-4 Lüneb.-W. Ems itd5 Emilia-Romagna def0 Schleswig-Holstein pt17 Lisboa ite3 Marche ukm3 SW Scotland	fr23 Haute-Normandie se0a Västsverige itf1 Abruzzo fr82 Pr.-Alpes-C. d'Azur de80 Meck.-Vorpommern pt18 Alentejo ukh1 East Anglia nl32 Noord-Holland be25 West-Vlaanderen ite1 Toscana ukn0 Northern Ireland itc3 Liguria itd4 Friuli-Venezia Giulia ukk4 Devon es53 Illes Balears uke2 North., Tyne, Wear fi19 Länsi-Suomi cy Cyprus	ukl1 W. Wales, Valleys ukf3 Lincolnshire fr94 Reunion se04 Sydsverige nl12 Friesland nl11 Groningen fi1a Pohjois-Suomi uke2 North Yorkshire fi13 Itä-Suomi se08 Övre Norrland es64 Melilla

Table 5.6 Aggregate data in relation to table 5.5

Fisheries sector as % of total employm.		Number of employed persons in the fisheries sector						Total
		> 10,000	7,5-10,000	5,0-7,500	2,5-5,000	1,0-2,500	< 1000	
> 2%	No. regions	1	1	1	4	1	1	9
	Total sector	45,487	9,754	5,184	17,275	2,493	680	80,873
	Fishing	20,725	3,585	1,694	13,914	2,115	680	42,713
1-2%	No. regions	2	1	3	7	4	2	19
	Total sector	29,082	9,532	19,867	27,864	5,993	868	93,206
	Fishing	9,941	950	6,696	10,763	3,396	659	32,405
0.5-1.0%	No. regions	3	0	3	6	8	2	22
	Total sector	39,156		16,700	24,644	13,250	1,422	95,172
	Fishing	24,589		12,218	15,058	9,423	996	62,284
0,1-0,5%	No. regions	0	1	7	10	18	11	47
	Total sector		7,892	40,900	33,529	29,439	6,147	117,907
	Fishing		5,860	22,484	18,978	15,101	3,037	65,461
Total	No. regions	6	3	14	27	31	16	97
	Total sector	113,725	27,178	82,652	103,312	51,175	9,117	386,444
	Fishing	55,255	10,396	43,092	58,713	30,035	5,372	202,863

Table 5.7 Classification of the NUTS-2 regions according to the role of the fishing sub-sector, 2002-2004

Fishing sub-sector as % of total employm.	Number of employed persons in the fishing sub-sector					
	> 10,000	7,500-10,000	5,000-7,500	2,500-5,000	1,000-2,500	< 1000
> 2.0%				gr41 Voreio Aigaio pt20 Açores gr42 Notio Aigaio	gr22 Ionia Nisia	es63 Ceuta
1.0-2.0%	es11 Galicia			pt15 Algarve gr24 Sterea Ellada gr25 Peloponnisos		fr93 Guyane
0.5-1.0%	itg1 Sicilia	fr52 Bretagne		es70 Canarias gr12 Kentriki Makedonia itf6 Calabria itg2 Sardegna	ukm4 Highlands and Islands gr11 Anatol. Makedonia, Thraki gr43 Kriti ukm1 North Eastern Scotland es13 Cantabria gr23 Dytiki Ellada mt Malta ukk3 Cornwall and I. of Scilly fr91 Guadeloupe fr92 Martinique	gr21 Ipeiros pt30 Madeira
0,1-0,5%		es61 Andalucia	pt11 Norte itf4 Puglia es51 Cataluña	dk Denmark es52 Valencia gr30 Attiki pt16 Centro lv Latvia es21 Pais Vasco ie02 Southern and Eastern itf3 Campania lt Lithuania ee Estonia	itd3 Veneto ite3 Marche pl63 Pomorskie pt17 Lisboa ie01 Border, Midlands, Western pl42 Zachodnio Pomorskie fr25 Basse-Normandie es12 Asturias itd5 Emilia-Romagna fr51 Pays de la Loire fr81 Languedoc-Roussillon itf1 Abruzzo fr30 Nord - Pas-de-Calais fr61 Aquitaine gr14 Thessalia es62 Murcia itc3 Liguria es53 Illes Balears	fr53 Poitou-Charentes ukl1 West Wales and Valleys se0a Västsverige cy Cyprus itd4 Friuli-Venezia Giulia fr23 Haute-Normandie ukk4 Devon pt18 Alentejo be25 West-Vlaanderen fr94 Reunion nl34 Zeeland nl23 Flevoland fr83 Corse es64 Melilla fi20 Åland

Table 5.8 Aggregate data in relation to table 5.7

Fisheries sector as % of total employm.		Number of employed persons in the fisheries sector					Total	
		> 10,000	7,5-10,000	5,0-7,500	2,5-5,000	1,0-2,500		< 1000
> 2%	No. regions	0	0	0	4	0	1	5
	Total sector				15,156		680	15,836
	Fishing				12,974		680	13,654
1-2%	No. regions	1	0	0	3	0	1	5
	Total sector	40,020			17,520		676	58,216
	Fishing	20,725			9,502		614	30,841
0.5-1.0%	No. regions	1	0	1	4	10	2	18
	Total sector	12,005		18,502	17,314	25,948	2,226	75,995
	Fishing	10,487		6,271	13,549	15,204	1,464	46,975
0,1-0,5%	No. regions	0	1	3	10	18	15	47
	Total sector		13,091	21,134	67,386	66,921	27,459	195,991
	Fishing		9,844	16,656	34,380	32,001	9,507	102,388
Total	No. regions	2	2	7	27	28	19	75
	Total sector	52,025	13,091	39,636	117,376	92,869	35,582	346,039
	Fishing	31,212	9,844	22,927	70,406	47,205	12,264	193,858

Table 5.9 EU fleet, April 2005

	Coastal			Off-shore		
	Number of vessels	kW	GT	Number of vessels	kW	GT
Belgium	1	221	5	122	66,449	23,284
Cyprus	821	27,668	2,398	75	22,828	7,738
Germany	1,743	33,452	3,943	415	129,227	62,571
Denmark	2,531	89,225	9,801	877	264,700	87,759
Estonia	843	12,525	1,656	201	50,293	23,298
Spain	9,774	166,690	18,560	3,731	961,920	465,347
Finland	3,171	127,642	7,768	173	48,118	9,861
France	3,658	271,053	14,226	1,748	583,884	185,808
France (Drom)	2,374	182,822	5,305	92	30,001	10,069
Greece	17,284	324,020	33,482	1,322	225,674	61,492
Ireland	961	26,616	3,623	464	188,709	83,724
Italy	9,511	236,611	16,527	5,434	1,008,989	198,960
Lithuania	196	4,438	416	87	71,856	74,202
Latvia	743	7,444	1,281	192	64,460	40,331
Malta	1,242	61,571	2,704	117	36,080	16,020
Netherlands	244	6,989	501	613	448,250	189,993
Poland	811	33,191	3,810	475	117,923	42,728
Portugal	9,379	135,714	12,889	953	263,478	101,817
Sweden	1,249	72,093	5,185	357	144,497	38,916
Slovenia	117	3,665	227	25	4,804	620
United Kingdom	5,649	310,747	21,758	1,419	587,429	199,605
Total	72,302	2,134,398	166,063	18,892	5,319,568	1,924,143

Source: EU fleet register

5.2 North Sea

1. Some 51,800 persons are employed in the fisheries sector of the North Sea, of whom only 15,100 in fishing, 35,100 in fish processing and 1,600 in aquaculture.
2. 28 specific NUTS-2 regions are distinguished. Denmark and North Eastern Scotland have the largest number of people employed in the fisheries sector.
3. Denmark, N-E Scotland, Bremen and East Riding are the four areas with most people working in fish processing industry.

Table 5.10 Overview of the North Sea NUTS-2 regions, 2002-2003

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
be25 West-Vlaanderen	475	1,663	666	993	4	0.4%	0.1%
dk Denmark – North Sea	2,166	11,248	3,406	7,158	683	0.5%	0.2%
de50 Bremen	270	3,375	58	3,317	0	1.3%	0.0%
de60 Hamburg	783	769	21	748	0	0.1%	0.0%
de93-4 Lüneb.-W. Ems	1,766	3,000	661	2,307	32	0.2%	0.0%
def0 Schlesw.-Holstein - NS	743	1,723	464	1,229	30	0.2%	0.1%
nl11 Groningen	274	503	172	319	12	0.2%	0.1%
nl12 Friesland	308	661	144	511	6	0.2%	0.0%
nl23 Flevoland	188	2,337	416	1,915	6	1.2%	0.2%
nl32 Noord-Holland	1,326	1,674	647	1,021	6	0.1%	0.0%
nl33 Zuid-Holland	1,701	1,643	743	894	6	0.1%	0.0%
nl34 Zeeland	176	1,228	424	798	6	0.7%	0.2%
nl-extra	4,129	1,002		924	78	0.0%	0.0%
ukc1 Tees Valley, Durham	472	428	169	178	81	0.1%	0.0%
ukc2 North., Tyne and Wear	631	1,195	520	651	25	0.2%	0.1%
uke1 E. Riding, N. Lincoln.	402	4,658	184	4,441	33	1.2%	0.0%
uke2 North Yorkshire	382	469	258	140	72	0.1%	0.1%
ukf3 Lincolnshire	314	966	160	770	35	0.3%	0.1%
ukh1 East Anglia	1,125	1,690	299	1,321	70	0.2%	0.0%
ukh3 Essex	805	221	86	65	70	0.0%	0.0%
ukj2 Surrey, E+W Sussex	1,324	770	55	705	9	0.1%	0.0%
ukj3 Hampshire, I Wight	929	438	340	17	81	0.0%	0.0%
ukj4 Kent	730	375	349	10	16	0.1%	0.0%
ukk1 Gloucestershire, etc.	1,145	658	353	252	53	0.1%	0.0%
ukk2 Dorset and Somerset	582	452	338	78	35	0.1%	0.1%
ukk3 Cornwall and I. Scilly	223	1,330	1,156	138	35	0.6%	0.5%
ukk4 Devon	526	1,296	742	501	53	0.2%	0.1%
ukm1 NE Scotland	230	5,184	1,694	3,475	15	2.3%	0.7%
ukm2 Eastern Scotland	929	872	559	260	52	0.1%	0.1%
Total North Sea	25,052	51,827	15,085	35,136	1,605	0.2%	0.1%

5.3 Baltic Sea

1. About 54,400 persons are employed in the fisheries sector of the Baltic, of whom 17,200 in fishing, 33,500 in fish processing and 3,700 in aquaculture.
2. 22 specific NUTS-2 regions are distinguished. Latvia is the most important fisheries area in all respects (1.1% dependence on the fisheries sector, 10,600 employed persons).
3. Almost 70% of all people working in the fisheries sector can be found in the coastal regions of the new Member States, despite the dramatic decrease which the fisheries sector experienced in these countries over the past 15 years.

Table 5.11 Overview of the Baltic NUTS-2 regions, 2002-2003

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
dk Denmark - Baltic	541	2,812	852	1,790	171	0.5%	0.2%
ee Estonia	594	6,700	2,500	4,100	100	1.1%	0.4%
fi13 Itä-Suomi	265	306	74	155	77	0.1%	0.0%
fi18 Etelä-Suomi	1,249	576	164	372	40	0.0%	0.0%
fi19 Länsi-Suomi	576	1,193	467	553	173	0.2%	0.1%
fi1a Pohjois-Suomi	262	473	150	156	167	0.2%	0.1%
fi20 Åland	14	192	45	103	44	1.4%	0.3%
def0 Schles.-Holstein – Balt.	495	1,149	309	819	20	0.2%	0.1%
de80 Mecklenburg-Vorp.	717	1,854	459	1,377	19	0.3%	0.1%
lv Latvia	1,007	10,580	3,670	6,484	426	1.1%	0.4%
lt Lithuania	1,433	6,565	2,550	3,700	315	0.5%	0.2%
pl42 Zachodnio Pomorskie	775	4,966	1,980	2,599	387	0.6%	0.3%
pl62 Warmińsko-Mazurskie	460	443	270	151	22	0.1%	0.1%
pl63 Pomorskie	684	7,104	2,250	4,225	630	1.0%	0.3%
pl-extra	11,698	7,410	0	6,449	961	0.1%	0.0%
se01 Stockholm	955	84	40	40	4	0.0%	0.0%
se02 Östra Mellansverige	713	153	141	6	6	0.0%	0.0%
se04 Sydsverige	603	695	378	283	34	0.1%	0.1%
se06 Norra Mellansverige	375	87	77	7	4	0.0%	0.0%
se07 Mellersta Norrland	173	52	31	19	2	0.0%	0.0%
se08 Övre Norrland	232	276	91	170	15	0.1%	0.0%
se09 Småland med öarna	390	260	215	34	11	0.1%	0.1%
se0a Västsverige	874	2,347	939	1,285	123	0.3%	0.1%
Total Baltic Sea	25,083	56,279	17,652	34,875	3,752	0.2%	0.1%

5.4 Atlantic area

1. Almost 180,000 persons are employed in the fisheries sector in the Atlantic areas, of whom 82,900 in fishing, 55,800 in fish processing and 40,100 in aquaculture.
2. 32 specific NUTS-2 regions are distinguished. Galicia is the most important fisheries area in terms of dependence (4.1%, 45,500 people).
3. Apart from Galicia, seven other areas show a dependency rate on total fisheries sector of 1-2%. Employment on Azores and in Algarve shows the highest dependence rates on the fisheries sector in the EU.
4. Three areas show a dependence rate on marine fishing in excess of 1%: Azores (3.4%), Galicia (1.9%) and Algarve (1.0%).
5. In 11 areas the fisheries sector employs more than 5,000 people. Bretagne is particularly important for its employment in the fish processing (7,400 people).
6. Aquaculture is particularly important in Galicia, Poitou-Charente and Algarve.

Table 5.12 Overview of the Atlantic NUTS-2 regions, 2002-2003

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
fr22 Picardie	805	238		74	164	0.0%	0.0%
fr23 Haute-Normandie	724	2,437	882	1,464	91	0.3%	0.1%
fr25 Basse-Normandie	567	6,063	1,946	1,453	2,664	1.1%	0.3%
fr30 Nord - Pas-de-Calais	1,522	5,452	1,553	3,720	179	0.4%	0.1%
fr51 Pays de la Loire	1,630	5,187	1,861	1,636	1,690	0.3%	0.1%
fr52 Bretagne	1,247	18,502	6,271	7,371	4,860	1.5%	0.5%
fr53 Poitou-Charentes	714	9,532	950	703	7,879	1.3%	0.1%
fr61 Aquitaine	1,090	4,625	1,343	1,824	1,458	0.4%	0.1%
ie01 Border, Midl., West.	459	4,860	2,093	1,740	1,027	1.1%	0.5%
ie02 South. and Eastern	1,337	5,724	3,054	1,699	971	0.4%	0.2%
pt11 Norte	1,794	7,892	5,860	1,919	113	0.4%	0.3%
pt16 Centro	1,290	5,479	4,002	1,414	64	0.4%	0.3%
pt17 Lisboa	1,290	2,835	2,106	593	136	0.2%	0.2%
pt18 Alentejo	339	1,692	713	976	3	0.5%	0.2%
pt15 Algarve	191	9,754	3,585	116	6,053	5.1%	1.9%
pt20 Açores	102	4,584	3,487	1,022	74	4.5%	3.4%
pt30 Madeira	112	992	704	259	29	0.9%	0.6%
es11 Galicia	1,105	45,487	20,725	15,762	9,000	4.1%	1.9%
es12 Asturias	384	2,459	1,899	539	21	0.6%	0.5%
es13 Cantabria	215	4,056	1,579	2,448	29	1.9%	0.7%
es21 Pais Vasco	906	5,150	3,220	1,864	66	0.6%	0.4%
es61 Andalucia - Atlantic	1,706	8,640	6,497	1,670	472	0.5%	0.4%
es70 Canarias	771	4,894	4,053	575	266	0.6%	0.5%
ukd1 Cumbria	229	1,433	63	1,317	53	0.6%	0.0%
ukd2 Cheshire	482	88	35	9	44	0.0%	0.0%

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
ukd4 Lancashire	685	672	193	426	53	0.1%	0.0%
ukd5 Merseyside	596	59	33	0	26	0.0%	0.0%
ukl1 West Wales, Valleys	793	999	940	21	37	0.1%	0.1%
ukl2 East Wales	542	66	15	20	31	0.0%	0.0%
ukm3 SW Scotland	992	2,568	505	1,683	380	0.3%	0.1%
ukm4 Highlands and Islands	273	4,887	2,172	726	1,989	1.8%	0.8%
ukn0 Northern Ireland	740	1,473	557	720	196	0.2%	0.1%
Total Atlantic areas	25,630	178,778	82,895	55,764	40,119	0.7%	0.3%

5.5 Mediterranean

1. Almost 119,000 persons are employed in the Mediterranean fisheries sector, of whom 89,800 in fishing, 16,300 in fish processing and 11,800 in aquaculture.
2. 40 specific NUTS-2 regions are distinguished. Eight regions show a dependence rate on total fisheries sector of more than 1%. Seven of these regions are in Greece. The dependence is particularly high in Voreio Aigaio (6.6%), Ionia Nisia (3.4%) and Notio Aigaio (3.3%). By far most of these people are employed in marine fishing. Fish processing and aquaculture are of minor importance.
3. High numbers of people working in the fisheries sector can be found in Sicily (12,000), Catalonia (6,800) and Puglia (6,400). These are also the areas with the highest numbers of people working in fish processing.

Table 5.13 Overview of the Mediterranean NUTS-2 regions

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
cy Cyprus	327	1,175	926	122	127	0.4%	0.3%
fr81 Languedoc-Roussillon	808	4,355	1,773	906	1,676	0.5%	0.2%
fr82 Pr.-Alpes-Côte d'Azur	1,583	2,082	1,112	711	259	0.1%	0.1%
fr83 Corse	59	430	292	41	97	0.7%	0.5%
gr11 A. Makedonia, Thraki	207	2,875	1,815	960	100	1.4%	0.9%
gr12 Kentriki Makedonia	662	5,149	3,463	1,068	618	0.8%	0.5%
gr14 Thessalia	263	1,605	1,313	278	14	0.6%	0.5%
gr21 Ipeiros	116	1,234	760	148	326	1.1%	0.7%
gr22 Ionia Nisia	74	2,493	2,115	0	378	3.4%	2.8%
gr23 Dytiki Ellada	240	1,967	1,504	204	259	0.8%	0.6%
gr24 Sterea Ellada	202	4,612	3,055	247	1,310	2.3%	1.5%
gr25 Peloponnisos	239	3,154	2,862	0	292	1.3%	1.2%
gr30 Attiki	1,532	4,746	4,176	392	178	0.3%	0.3%
gr41 Voreio Aigaio	65	4,346	3,989	57	300	6.6%	6.1%

Region name	National total (*1000)	Fisheries total	Fishing	Processing	Aquaculture	Dependence rate	
						Total	Fishing
gr42 Notio Aigaio	112	3,733	3,383	0	350	3.3%	3.0%
gr43 Kriti	238	1,788	1,761	7	20	0.8%	0.7%
itc3 Liguria	622	1,432	1,143	232	57	0.2%	0.2%
itd3 Veneto	2,004	3,763	2,438	822	503	0.2%	0.1%
itd4 Friuli-Venezia Giulia	503	1,332	902	159	271	0.3%	0.2%
itd5 Emilia-Romagna	1,849	2,872	1,869	257	746	0.2%	0.1%
ite1 Toscana	1,483	1,523	1,273	201	49	0.1%	0.1%
ite3 Marche	624	2,802	2,361	402	39	0.4%	0.4%
ite4 Lazio	2,057	1,524	1,310	149	65	0.1%	0.1%
itf1 Abruzzo	478	2,122	1,738	368	16	0.4%	0.4%
itf2 Molise	109	98		89	9	0.1%	0.0%
itf3 Campania	1,655	3,445	2,747	576	122	0.2%	0.2%
itf4 Puglia	1,247	6,401	5,535	339	527	0.5%	0.4%
itf5 Basilicata	183	30		6	24	0.0%	0.0%
itf6 Calabria	577	3,507	3,176	311	20	0.6%	0.6%
itg1 Sicilia	1,406	12,005	10,487	1,419	99	0.9%	0.7%
itg2 Sardegna	548	3,764	2,857	400	507	0.7%	0.5%
it-extra	6,710	1,337	321	978	38	0.0%	0.0%
mt Malta	148	1,441	1,303	33	105	1.0%	0.9%
si Slovenia	897	623	132	237	254	0.1%	0.0%
es51 Cataluña	2,862	6,841	5,261	1,492	88	0.2%	0.2%
es52 Valencia	1,786	5,652	4,203	1,069	380	0.3%	0.2%
es53 Illes Balears	387	1,259	1,116	127	15	0.3%	0.3%
es61 Andalucía - Med	879	4,451	3,347	861	243	0.5%	0.4%
es62 Murcia	473	3,159	1,219	592	1,348	0.7%	0.3%
es63 Ceuta	27	680	680	0		2.5%	2.5%
es64 Melilla	23	50	50	0		0.2%	0.2%
Total Mediterranean Sea	36,263	117,856	89,767	16,260	11,829	0.3%	0.2%

6. Trends in the fisheries sector

6.1 Trends in marine fisheries

The analysis of the dynamics of the EU marine fisheries is based on a combination of data in the present report and the data published in the report 'Economic performance of selected European fishing fleets'. The latter report offers detailed reliable time series for the years 1999-2004, which covers the period since the preparation of the former series of studies on regional distribution of fisheries employment.

The employment on board fishing vessels in the EU-15 has decreased from about 240,000 in 1998 to about 190,000 in 2003, i.e. by 21%. Total employment in fishing in the EU-25 amounted in 2002/2003 to approximately 209,000 persons⁵. In view of this trend, it is estimated that approximately 190,000 fishermen were employed on board in 2005 (about 175,000 in EU-15).

Employment on board EU fishing fleet is a result of demand for fishermen on one hand and their availability (labor supply) on the other. The demand for fishermen is determined by the size of the fleet, the labor intensity of the technology used and the economic performance (profitability) of the vessels. These aspects are elaborated in detail in the following sections of this chapter.

The willingness to work on board (supply of labor) is determined by a complex interaction of social and economic factors. Little in-depth research has been carried out in this respect. The main reasons for apparently diminishing interest to work on board fishing vessels can be summarized as follows:

- Interest in fishing profession of the young EU generation has been declining. The number of students in fisheries schools has been falling since many years. Increasing mobility and new job opportunities along with the loss of traditional ways of life have been among the reasons why young people appear reluctant to enter this profession.
- Social status of the fishing profession has probably fallen as real earnings (after accounting for inflation) remain constant at best and fall in many fisheries. The prolonged stay at sea, away from family and friends, creates an increasing obstacle to join crews on larger vessels.
- Potential earnings in other marine sectors (merchant navy, off-shore) are often higher and more stable than in fishing. The relative insecurity of the earnings in fishing is well illustrated by the sharp rise of fuel prices in 2005 and beginning 2006. Many crewmen work on share basis, where vessel revenues and fuel costs are taken into account. With constant or decreasing fishing opportunities (TACs), constant prices and rising fuel

⁵ Incl. approx. 3,400 in the French Drom.

price, the prospects for satisfactory level of earnings have been rather weak for many years.

- The relatively 'free' life of fishermen has been curbed by an increasing number of rules and regulations, which are regularly perceived as unpleasantly restrictive.
- The prospects in the fishing profession have changed dramatically over the past 20 years. Until the end of 1980-ies many EU MS supported young fishermen with grants to get their own vessel and start their own business. Although these measures are still available under the FIFG, Member States have recently made very little use of it. (It has only been used in France and to some extent in Spain and Greece). Level of investment in new vessels (a sign of status) has dropped and consequently the average age of the active vessels is at or well over 20 years. Level of earnings of the fleets does not allow regular replacement of vessels. This lack of dynamics of the sector is evidently not attractive for entrepreneurs who would consider becoming vessel- or skipper-owner.

Fishing fleets in many countries have experienced shortage of crews at least since the 2nd half of 1990-ies. In general this shortage has been resolved by reducing the size of the crews to a minimum required for safety and technical reasons. In some areas owners of larger fishing vessels have contracted foreign crews from non-EU countries. This is particularly the case in a number of specific European regions: Greece, where larger trawlers are crewed by Egyptians, southern Italy with an apparently substantial number of Tunisians and southern Spain where Moroccan crews are active. Furthermore, crews of distant fleets working in non-EU tropical waters consist often of local fishermen (Mauritanians, Senegalese, etc.). More recently, there are indications that Scottish and other vessel owners hire crews from the new Member States. Hiring foreign crews is not only driven by lack of local crews, but also by the need to reduce labor costs. Despite these indications, it is very difficult to make a sound estimation of the number of foreigners who have replaced EU crewmen. A very rough estimate will be in the range of 5-10.000 (see chapter 8).

Demand for labor is determined in the first place by the size and composition of the fleet. The number of vessels in the EU-15 has decreased from about 95,000 in 1998 to about 83,000 in 2005, i.e. by 24%⁶. The decrease in kW en GT amounted over the same period to approximately 10-15%, which implies that relatively smaller vessels have left the fleet. The small scale fleet contributes more strongly to the employment on board. Therefore, fleet reduction alone accounts for about 40% of the loss of employment on board fishing vessels.

Other general factors which contributed to falling demand are:

- Reduction of crews to safety minimum level in order to address the crew shortage, but also to maintain acceptable income levels for those who remain on board.
- Technological progress, allowing introduction of labor saving equipment.

⁶ These figures are based on the Annual Economic Reports of 1999 and EU fleet register of April 2005.

Employment in fishing in specific European areas has been seriously affected by development of the fishing agreements with third countries. This applies in particular to the agreements with Morocco and Angola. Access to the waters of these countries for mainly Spanish and Portuguese fleets maintained approximately 6-7,000 jobs on board⁷. Termination of these agreements had therefore major employment consequences. Access to resources of some other countries has been reduced too.

Further analysis focuses on economic performance in relation to employment in four regions: North Sea, Baltic Sea, Atlantic areas and the Mediterranean Sea. The determining factors are:

- *Prices*: Level and trends are presented at EU level, making distinction between demersal and pelagic species. Although there are some regional differences, the integration of the market is such that these differences mainly account for minor transportation costs and otherwise they are caused by very temporary variations in supplies. As the EU market depends for over 50% on imports, EU landings prices depend closely on the world market.
- *TACs*: In the North Sea, Baltic and Atlantic areas, large part of fisheries is regulated by TACs. Their level and trends determine to a large extent the potential value of production. Role of species for which there are no TACs remains either constant or it is diminishing. TACs are reviewed in terms of volume and value.
- *Value of landings by country*: Value of TAC species determines largely the results of the national fleets. Decrease of TACs cannot be compensated by non-TAC species.
- *Employment by country and region*: Level of employment, while relevant for its own sake, allows determination of productivity (i.e. value of landings or value added per person).
- *Fleet size (number of vessels, total GT and kW)*: Same comment applies as for employment.
- *Productivity of labor and capital (crews and vessels)*: Level and trend of labor productivity determine inter alia attractiveness of the profession, technological dynamics and future employment outlook. Productivity of vessels (production value per vessel), along with the production costs, determines in the end the attractiveness of new investments.
- *Profitability of selected fleet segments*: Overall profitability cannot be determined at national or regional level, because of insufficient data coverage of all countries. However, general trends identified in macro level can be retraced in performance of specific fleet segments, allowing a more precise assessment of profitability.

⁷ Study Evaluation of the Fisheries Agreements Concluded by the European Community, Summary Report, Ifremer, 1997

6.1.1 EU trends - Prices and TACs

Figure 6.1 presents average EU level and trend of nominal prices of all major species under TACs. These graphics show that most prices remain quite constant. Only in few exceptions is the price in 2004 substantially higher than in 1999: mackerel, hake and possibly megrim (only 2003 price is available). On the other hand the price of salmon has been falling since 2000, being under pressure from farmed salmon.

Trends in TACs are a little more mixed (fig. 6.2):

- Cod TAC has dramatically decreased since 1999, but in 2003-2005 it has remained stable;
- None of the 'low' price demersal stocks is improving;
- There is some improvement in the stocks of the more valuable demersal species, particularly hake, anglerfish and Norway lobster;
- TAC of blue whiting has increased very significantly in 2005. Also the TAC of herring has been improving since 2003.

In general the catching opportunities of demersal species have decreased from 1.36 mln tonnes in 1999 to 1.02 mln tonnes in 2003 and remained at that level since. The TACs of pelagic species have decreased from 1.8 mln tonnes in 2000 to 1.3 mln tonnes in 2003, but increased again to over 2 mln tonnes in 2005

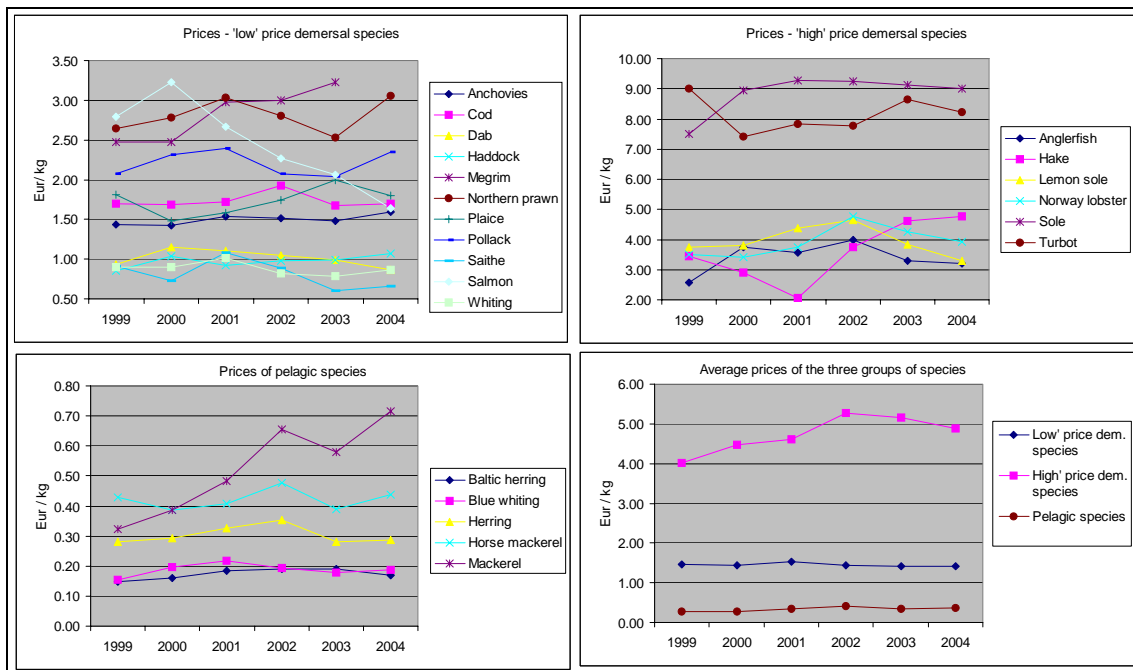


Fig. 6.1. Prices of TAC species

The economic dynamics of the marine fisheries are evidently determined by the potential production values of the TACs, which are presented in the figures 6.2 and 6.3. The TACs

of 2005 were valued with 2004 prices, which is acceptable in view of the relative stability of the prices demonstrated above. Baltic salmon and fishing for fish meal have been excluded from the analysis.

Comparing the situation in 2005 to 1999, the value of ‘low’ price demersals has decreased by almost 500 mln Euro. The value of ‘high’ price demersals is in 2005 about 10% below 1999 level. The value of pelagic TACs has increased by about one third. Since 2003 there is a marked overall improvement: the fall of the ‘low’ price demersals has come to an end, while the other two groups of species experienced a marked rise. The total nominal value of all TACs has decreased from 2.7 bln Euro in 1999 to 2.3 bln Euro in 2005, which is 14%. When inflation⁸ would be accounted for, the decrease of the value of TACs over this period would be 24%.

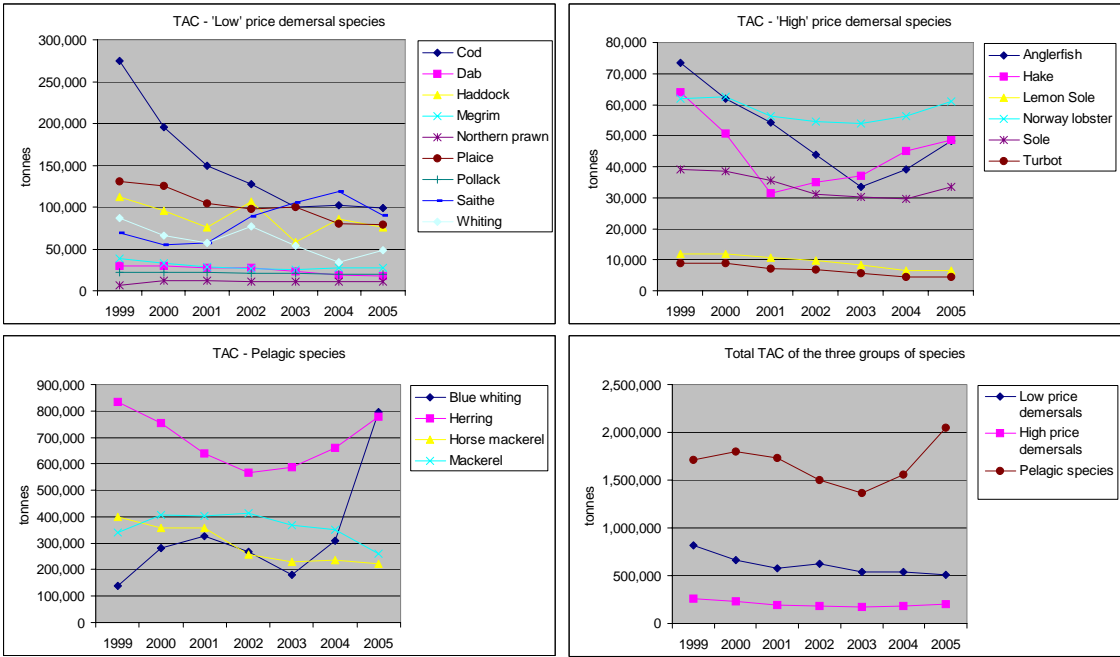


Fig. 6.2. TACs⁹

Figure 6.3 shows the trends and role of the individual species. The fall in value of demersals is primarily caused by cod (decrease by 300 mln Euro between 1999 and 2003) and to a lesser extent by plaice (fall by about 100 mln Euro). The value of most other TACs remained quite constant and furthermore, these species are relatively much less important than cod and plaice. Economically four ‘high’ price demersal species – sole, hake, Norway lobster and to lesser extent anglerfish are more important today than cod or plaice. Consequently, fleets targeting these valuable species have achieved better results than the fleets which largely depend on cod.

⁸ Average EU inflation was 2.2% between 1999 and 2004. (Eurostat)

⁹ TAC of Baltic salmon is excluded because it is barely utilized.

The total value of pelagic stocks is more volatile. In 2005 the nominal value was 33% higher than in 1999. After accounting for inflation, the increase would still be about 20%. However, in terms of employment, pelagic fishing is much less important due to large size of vessels employed for this purpose.

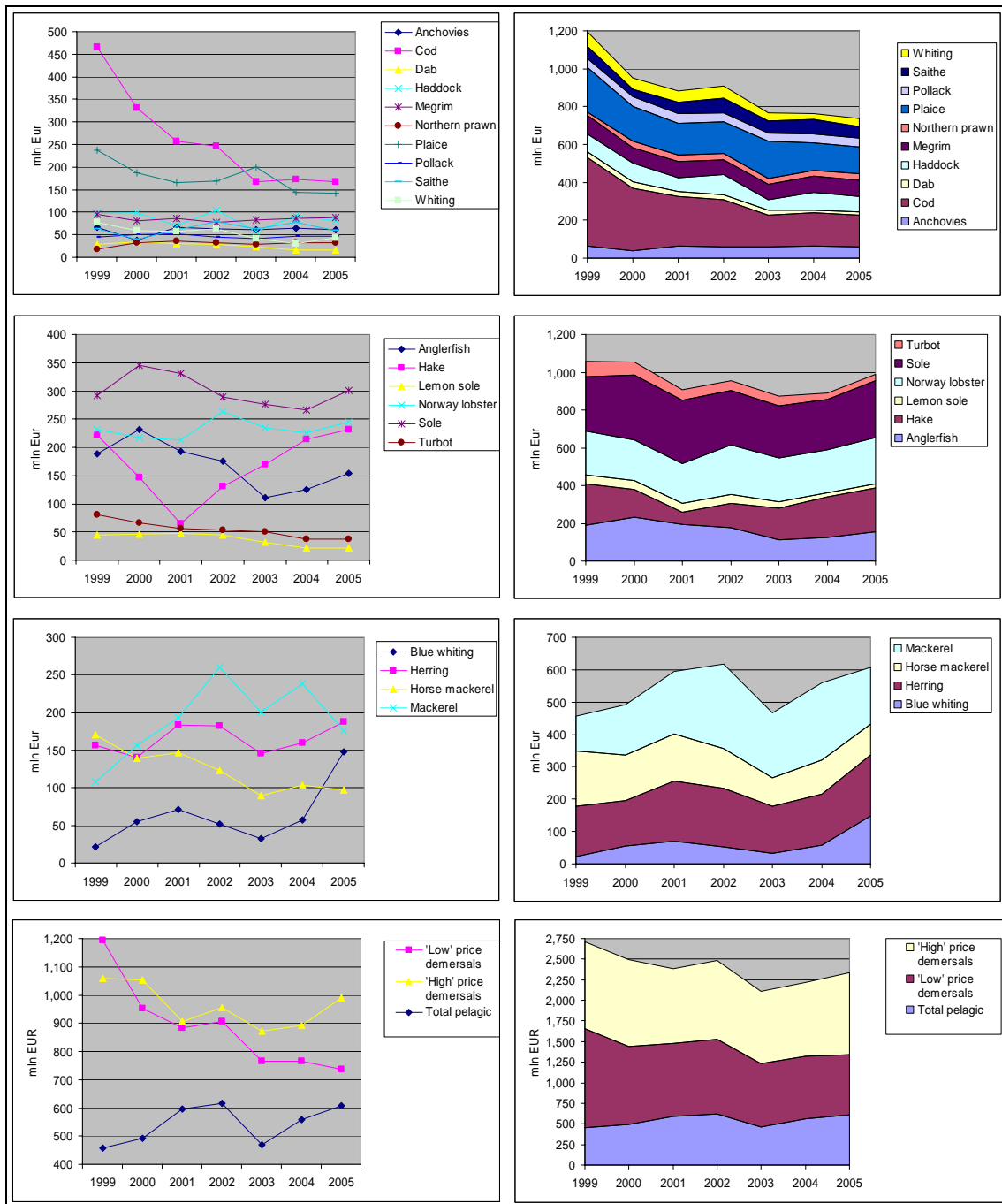


Fig. 6.4. Value of TACs

The table 6.1 presents values of landings declared by the EU member states. The sum of North Sea, Baltic and Atlantic landings can be roughly estimated at about 4.6-5.2 bln Euro¹⁰. Comparing this value with the value of the TACs, it follows that about 50% of the value of EU fish production in these 3 areas is regulated by TACs.

The total number of fishermen in the EU-15 has decreased from some 240,000 in 1999 to about 180,000 in 2004, ie. by 25%. The value of production has decreased by only 7%. This means that the nominal labor productivity (value of landings per man) increased by 23%. Even after accounting for inflation (10% in this period) the real labor productivity still increased by some 12%.

Table 6.1 Value of landings by country, 1999-2004

	1999	2000	2001	2002	2003	2004
Belgium	86	89	97	92	90	86
Denmark	462	440	479	502	372	352
Finland	22	23	25	24	20	21
France	<i>1,000</i>	1,034	1,069	1,078	<i>1,000</i>	<i>1,000</i>
Germany	182	189	188	190	182	<i>180</i>
Greece	275	249	250	258	275	291
Ireland	210	218	250	234	194	<i>195</i>
Italy	1,550	1,558	1,475	1,385	1,466	1,380
Netherlands	412	403	427	380	394	380
Portugal	313	312	333	336	358	347
Spain	1,952	1,765	1,852	1,893	1,850	<i>1,850</i>
Sweden	109	113	127	118	95	91
United Kingdom	890	902	927	866	755	740
Total EU-15	7,463	7,295	7,499	7,356	7,051	6,913
Cyprus						
Estonia	<i>40</i>					18
Latvia (Baltic only)	23	24	24	21	19	19
Lithuania	90	90	90	83	104	52
Malta						11
Poland	<i>120</i>	122	110	68	50	40
Slovenia			3		3	

Source: AER 2005

Figures in italics are assumed values, to allow calculation of the totals

Figure 6.5 shows that in most areas of the EU there is a clear relation between results of the fleet (value of landings and crew share) on one hand and employment on the other. Only Spanish and Portuguese fleets for which data is available (see section 6.1.4) do not follow this pattern. This may be partly caused by the fact that the coverage of the national fleets in these countries is relatively low compared to other data presented in this figure.

¹⁰ Total EU minus Greece, Italy, 10% France and 20% Spain and 25% Denmark (fish for reduction)

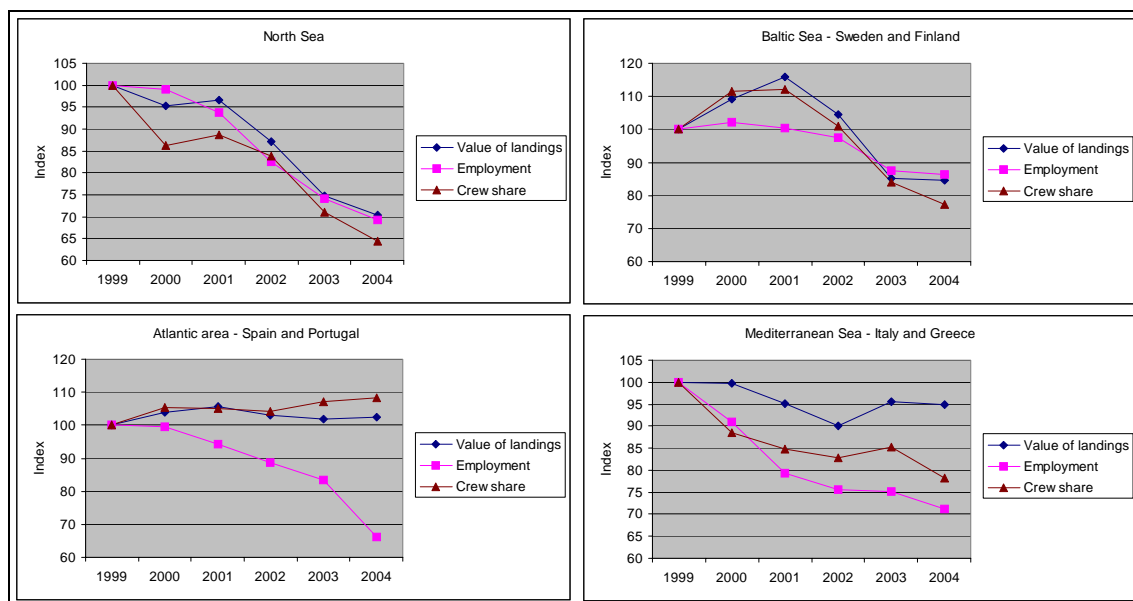


Fig. 6.5 Relation between employment, value of landings and crew share
Source: AER 2005

6.1.2 Situation in the North Sea¹¹

The total demersal TACs in the North Sea have decreased from 500,000 tonnes in 1999 to 315,000 tonnes in 2005, i.e. by 40%. Cod and plaice alone account for almost 75% of this decrease, of which cod TAC decreased by almost 100,000 tonnes and plaice TAC by about 40,000 tonnes. TACs of most other stocks decreased as well, but their volumes are not as important. The only exception to this downward trend are saithe, nephrops and northern prawn.

Similarly to volumes, the value of demersal TACs has decreased from almost 1 bln Euro to about 660 mln Euro. The value of cod dropped from 200 to about 40 mln Euro and of plaice from 180 to 100 mln Euro. These figures imply that nominal annual rate of decrease amounted to about 7% and in real terms (after inflation) to about 9%.

The situation in pelagic fisheries was almost reverse from the demersal ones. The aggregate volume of TACs has increased from 320,000 to 560,000 tonnes and the value from 75 to 144 mln Euro.

Overall, the volume of TACs was in 2004 approximately at the level of 1999 at some 825,000 tonnes. The total value of the TACs decreased in the same period from little over 1 bln Euro to about 800 mln Euro, i.e. by about 20%.

¹¹ Only fishing for human consumption is discussed. Fishing for fish meal is excluded.

These trends can be only partially retraced in the data for the North Sea countries, presented in figure 6.4. The national totals contain not only fisheries of the North Sea, but also in the Baltic (Denmark, Germany), Atlantic (UK) and distant mainly pelagic fishing (Germany and Netherlands). Furthermore it contains landings of non-quota species. Aggregate value of landings in the 5 North Sea countries (incl. catches in other areas) decreased from 2 bln Euro in 1999 to 1.7 bln Euro in 2004, i.e. by 15%.

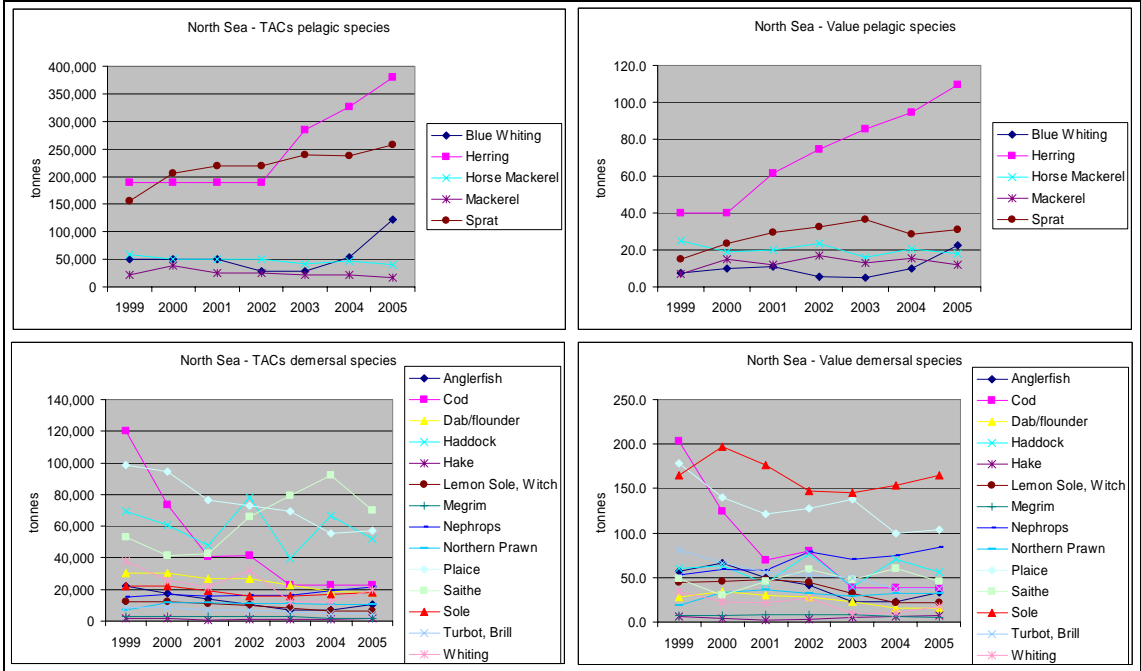


Fig. 6.6. Value and volume of North Sea TACs

The aggregate employment in the fisheries of the 5 North Sea countries decreased from some 26,000 men in 1999 to 19-20,000 men in 2004¹², i.e. over 20% or about 5% per year. This development is quite consistent with the decrease in the value of the TACs. While the nominal labor productivity has increased by about 5%, in real terms it has decreased by 5%.

¹² Fleets based in the North Sea ports employed some 15,000 fishermen (see table 5.6).

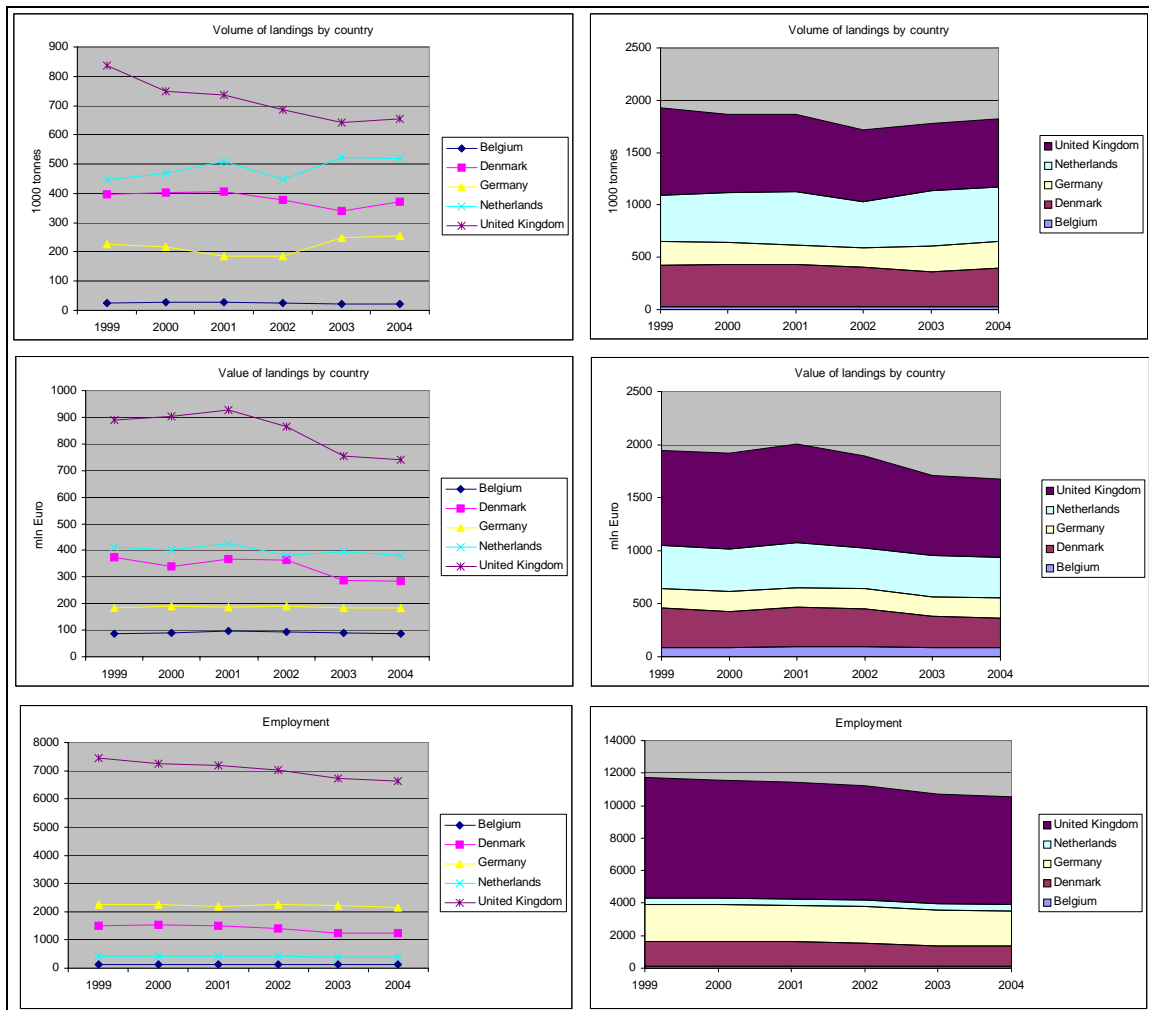


Fig. 6.7. Volume, value and employment by country in the North Sea

Table 6.2 Performance of selected North Sea fleet segments¹³

	1999	2000	2001	2002	2003	2004	Index 2004/1999
Economic indicators (mln Euro)							
Value of landings	997	950	964	869	746	701	70%
Fuel costs	113	195	181	147	145	157	139%
Other running costs	187	176	169	156	140	128	69%
Vessel costs	186	196	190	168	158	150	81%
Crew share	411	355	365	344	292	265	64%
Capital costs	193	206	207	198	182	188	97%
Gross cash flow	101	29	59	54	9	2	2%
Net profit	-92	-177	-148	-144	-173	-186	201%
Gross value added	319	178	217	200	120	79	25%
Physical indicators							
Employment	9,069	8,985	8,506	7,485	6,717	6,282	69%
Volume of landings	1,535	1,639	1,565	1,506	1,129	1,126	73%
Number of vessels	2,188	2,214	2,169	1,989	1,753	1,741	80%
Productivity indicators (value 1000 euro, volume tonnes)							
Value / man	110	106	113	116	111	112	102%
Crew share / man	45	39	43	46	44	42	93%
Value / vessel	456	429	444	437	425	403	88%
Volume / man	169	182	184	201	168	179	106%
Volume / vessel	702	740	721	757	644	647	92%

Table 6.2 summarizes the results of 15 North Sea segments, for which detailed economic data is available. These fleets employed about 40% of the fishermen active in the North Sea. The value of their landings decreased in this period by 30%. Fuel costs increased sharply in the year 2000 and fell somewhat subsequently. Still the fuel costs were some 40% higher in 2004 than in 1999. A new increase in 2005 by some 30-40% (i.e. 50-60 mln Euro) has occurred. Other running costs and vessel costs have decreased along with the falling number of vessels and probably fishing effort. As crew share depends on value of landings as well as on the fuel costs, it decreased by some 36%.

The number of fishermen decreased proportionately with the value of landings. Consequently, value of landings / man remained at a relatively constant level of 110-116,000 Euro. The nominal crew share / man has also remained relatively constant. However, in real terms the crew share / man was in 2004 about 15% below the 1999 level.

¹³ *Belgium*: Beam trawlers < 24m, Beam trawlers > 24m, Shrimp beam trawlers;

Denmark: Purse seiners and trawlers >= 40m, Trawlers 24 -< 40m, Trawlers < 24m, Gillnetters, Danish seiners;

Netherlands: Shrimp beam trawlers < 24m, Beam trawlers <= 24m, Beam trawlers > 24m, Trawlers > 24m;

United Kingdom: Scottish demersal trawlers > 24m, Scottish demersal trawlers < 24m, Scottish seiners.

Germany: not included, time series for segments are not available for the whole period.

Physical productivities (volume / man and volume / vessel) are fluctuating without any upward or downward trend.

The aggregate results (gross cash flow, net profit and gross value added) have been structurally deteriorating over the entire period. The gross cash flow has approached zero, which means that on the average many companies are not able to meet their financial obligations (payment capital costs). Losses have been increasing, which implies that the reserves of the companies must be diminishing. However, it must be pointed out that the fiscal results are probably better than the presented economic results, due to differences in calculation of capital costs (depreciation and interest). The trend cannot be different.

6.1.3 Baltic Sea

Cod, Baltic herring, plaice and nephrops are the most important species for the Baltic fisheries. In 2004 they accounted for over 90% of the value of the Baltic TACs. The value of Baltic TACs decreased from about 280 mln Euro in 1999 to 175 mln Euro in 2004, i.e. by some 38%, mainly due to the deterioration of the cod stock.

The Baltic fisheries can be viewed on the basis of two different criteria: a/ large and small fishing countries (i.e. Sweden, Lithuania and Poland versus Finland, Estonia and Latvia¹⁴) and b/ old and new Member States. The second distinction is fundamental from perspective of economic performance.

The production value of the three large fishing countries has been falling, while the three small producers managed to maintain their output at a relatively constant level. Employment decreased very rapidly in Poland, where it was also by far the highest. The other countries do not seem to be affected by decreasing value of TACs.

The selected segments of Sweden and Finland represent about 65% of total fisheries employment in these two countries.. Their production value has decreased by about 15% and employment has fallen at a similar rate. Profit has been reduced, mainly due to fall of value of landings and increase of fuel costs. The productivity indicators have not deteriorated dramatically, with the exception of real crew share per man, which was in 2004 over 20% lower than in 1999. Value of landings per man is 40% below the productivity achieved in the North Sea.

The aggregate performance of fisheries in the new MS is only available for the period 2001-2004, as earlier data is missing for some of the important fleet segments. It needs to be stressed that about 18 Lithuanian Atlantic trawlers account for more than 50% of the indicated production value. The decrease in their output in 2004 is also responsible for the entire aggregate decrease. The segments of the new MS in the Baltic cover a little over one third of the total employment in marine fisheries.

¹⁴ For Latvia only value of production from the Baltic Sea is available.

The physical indicators have remained relatively constant over the presented period. Also the productivity of the segments, with the exception of the Lithuanian Atlantic trawlers, has remained quite constant. The crew share / man is very low compared to other EU countries, but the level is quite consistent with earning levels in the new MS.

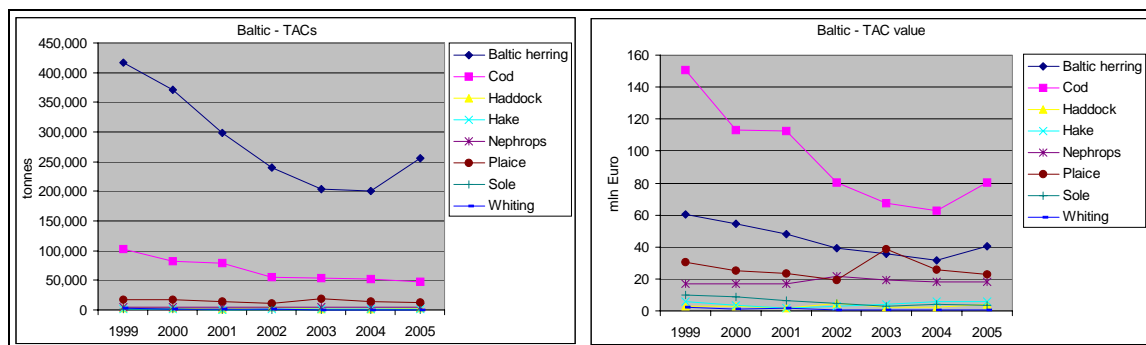


Fig. 6.8. Value and volume of Baltic TACs

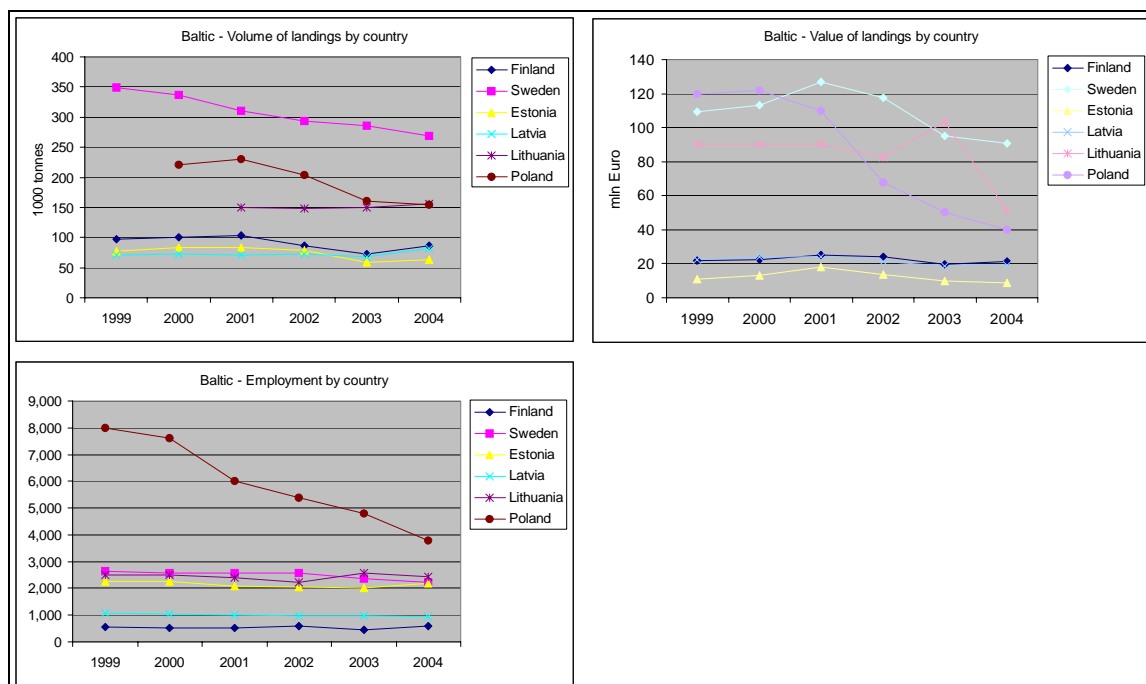


Fig. 6.9. Value, volume and employment by country

Table 6.3 Performance of selected segments in Sweden and Finland¹⁵

	1999	2000	2001	2002	2003	2004	Index 2004/1999
Economic indicators (mln Euro)							
Value of landings	123	135	143	129	105	104	85%
Fuel costs	13	17	19	17	18	22	169%
Other running costs	23	28	23	19	15	15	64%
Vessel costs	22	25	19	27	26	25	113%
Crew share	32	36	36	33	27	25	77%
Capital costs	6	6	5	5	5	8	129%
Gross cash flow	33	29	46	33	19	17	53%
Net profit	27	23	41	28	14	10	36%
Gross value added	59	59	77	61	41	35	59%
Physical indicators							
Employment	1,839	1,877	1,849	1,793	1,608	1,587	86%
Volume of landings*	433	413	406	370	349	346	80%
Number of vessels	825	767	777	765	691	684	83%
Productivity indicators (value 1000 Euro, volume tonnes)							
Value / man	67	72	77	72	65	66	98%
Crew share / man	18	19	20	18	17	16	90%
Value / vessel	149	175	184	168	152	152	102%
Volume / man	235	220	220	206	217	218	93%
Volume / vessel	525	538	523	483	505	506	96%

* 1000 tonnes

Table 6.4 Performance of selected segments in Estonia, Latvia, Lithuania and Poland¹⁶

	2001	2002	2003	2004	Index 2001/1999
Economic indicators (mln Euro)					
Value of landings	149	133	148	93	63%
Fuel costs	47	35	52	32	68%
Other running costs	10	8	6	14	144%
Vessel costs	28	31	25	18	65%
Crew share	22	16	22	17	79%
Capital costs	19	19	16	17	90%

¹⁵ Finland: Trawlers < 24m, Trawlers > 24m, Gillnetters, Coastal vessels;

Sweden: Pelagic trawlers / purse seiners > 24m, Pelagic trawlers < 24m, Shrimp trawlers, Cod trawlers >= 24m, Cod trawlers < 24m, Nephrops trawlers, Gillnetters >= 12m.

¹⁶ Estonia: Trawlers < 24m, Trawlers > 24m; Latvia: Trawlers > 24m, Trawlers < 24m, Gillnetters;

Lithuania: Coastal vessels <12m, Baltic trawlers, Atlantic trawlers, Gillnetters;

Poland: Pelagic trawlers 24-40m.

Continuation table 6.4

	1999	2000	2001	2002	2003	2004	Index 2004/1999
Gross cash flow			43	43	44	12	28%
Net profit			24	24	28	-5	-20%
Gross value added			46	40	50	12	27%
Physical indicators							
Employment			4,509	4,314	4,696	4,440	98%
Volume of landings			406	397	374	406	100%
Number of vessels			569	545	553	634	111%
Productivity indicators (value 1000 Euro, volume tonnes)							
Value / man			33	31	32	21	63%
Crew share / man			5	4	5	4	80%
Value / vessel			262	244	268	147	56%
Volume / man			90	92	80	91	101%
Volume / vessel			714	728	676	640	90%

6.1.4 Atlantic areas

Despite certain fluctuations, demersal as well as pelagic TACs are relatively stable in terms of volume and value. Independently of the question to which extent the TACs are fully exploited or not it is evident that the fleets operating in the Atlantic area can rely on a relatively stable resource base.

Mackerel is by far the most important pelagic species, accounting for some 30-40% of the potential production value. The value of pelagic TACs has fluctuated between about 400 and 500 mln Euro. In 2004 and 2005 it was at a relatively high level. Large increase of the TAC of blue whiting offers possibly interesting opportunities for the future. The most important demersal species are hake, nephrops and sole, but the fishery is rather mixed. The value of demersal species fluctuates around 900 mln Euro.

It is not possible to compare the value of TACs with the overall national production of the countries in the Atlantic region. The aggregate data for France, Spain and Ireland are very incomplete for the given period.

The aggregate performance of nine selected fleet segments (which represent about 11% of the fisheries employment in the Atlantic region) (see table 6.5) confirms the relative stability of the production level. The value of production of these segments fluctuated between 260 and 290,000 tonnes with values of 560-590 mln Euro. The profits of these fleets have deteriorated mainly due to an increase of fuels costs by 75% or 40 mln Euro. Also other running costs have increased, although not as sharply.

The number of crewmen has decreased by about 4,700 or 34%. Consequently the labour productivity increased by 55% in terms of value of landings per man and the average crew

share by 64%. The crew share level of 25,000 Euro is approximately in line with the gross value added per employed in other sectors of the economy of these two countries.¹⁷

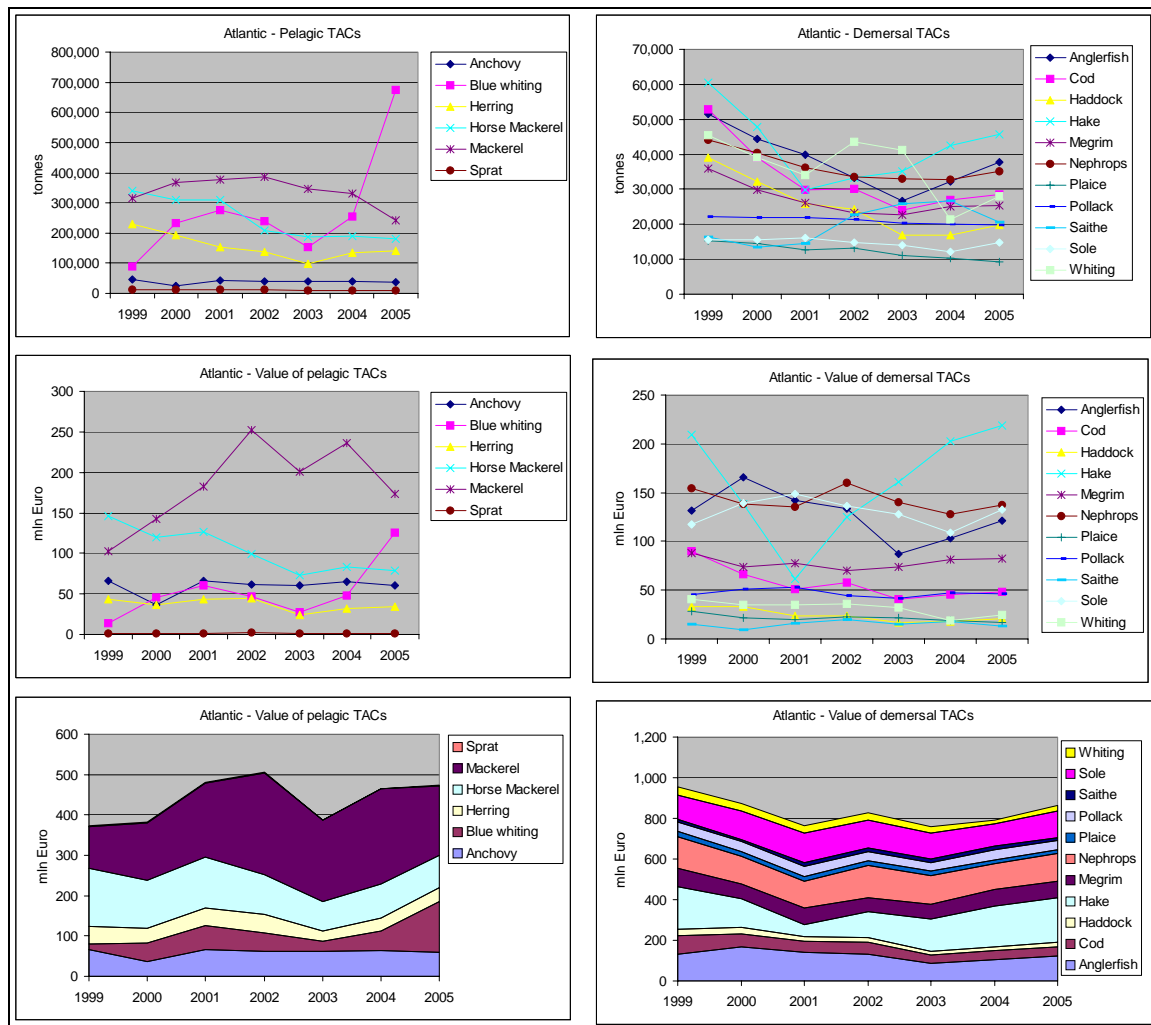


Fig. 6.10. Volume and value of Atlantic stocks

¹⁷ Gross value added per employed Spain: 43,000 Euro, Portugal: 21,000 Euro. (Eurostat, data on manufacturing)

Table 6.5 Performance of selected Atlantic segments¹⁸

	1999	2000	2001	2002	2003	2004	Index 2004/1999
Economic indicators (mln Euro)							
Value of landings	559	580	590	575	568	572	102%
Fuel costs	54	83	85	76	86	94	175%
Other running costs	68	65	64	77	76	93	138%
Vessel costs	101	96	101	101	89	68	67%
Crew share	207	219	218	216	222	225	108%
Capital costs	77	79	82	81	84	84	109%
Gross cash flow	129	118	123	106	96	92	72%
Net profit	51	39	41	25	12	8	16%
Gross value added	259	258	259	240	234	233	90%
Physical indicators							
Employment	13,834	13,747	13,034	12,288	11,546	9,149	66%
Volume of landings	292	275	271	272	264	267	91%
Number of vessels	1,097	1,107	1,110	1,085	1,033	1,009	92%
Productivity indicators (value 1000 Euro, volume tonnes)							
Value / man	40	42	45	47	49	63	155%
Crew share / man	15	16	17	18	19	25	164%
Value / vessel	509	524	532	530	550	567	111%
Volume / man	21	20	21	22	23	29	138%
Volume / vessel	266	249	244	251	255	264	99%

6.1.5 Mediterranean Sea

Assessment of the performance of the Mediterranean fleets relies particularly on Italian data. Italy is by far the most important fisheries country in the Mediterranean in terms of value of production. Data on Mediterranean Spain and France are not available. The value of Italian and Greek landings is relatively constant at approximately 1,500 and 270 mln Euro respectively. The landed volumes decreased in Italy by 30% and in Greece by 20%. This means that similar price increase has off-set the loss in volume.

The Mediterranean fisheries are characterized by a large variety of landed species. Pilchard and anchovy are most important species in value and volume in Italy and accounted in 2004 for about 27% of landed value.

In aggregate terms the economic performance of the selected Mediterranean fleet segments (which cover 40% of total fisheries employment in the Mediterranean) is quite stable. The value of landings in 2004 was only 5% below the 1999 level (17% in real terms). The fuel

¹⁸ *Portugal*: Trawlers, Coastal purse seiners, NAFO trawlers, Longliners, Gillnetters, north > 40 GT;
Spain: 300 fleet, N and NW trawlers, Galician purse seiners, Atlantic longliners.
Several minor estimations were included in the original data. Time series for French and Irish fleets are insufficient.

costs increased only marginally due to the low average energy intensity of the used fishing techniques. Most other costs have decreased. Consequently, net profit was in 2004 19% higher than in 1999.

The number of fishermen on board has decreased by almost 30%, from over 50,000 to about 36,000. This decrease reflects mainly the development in Italian fisheries. Consequently, production value per man could increase by one third and the share per man by about 10%.

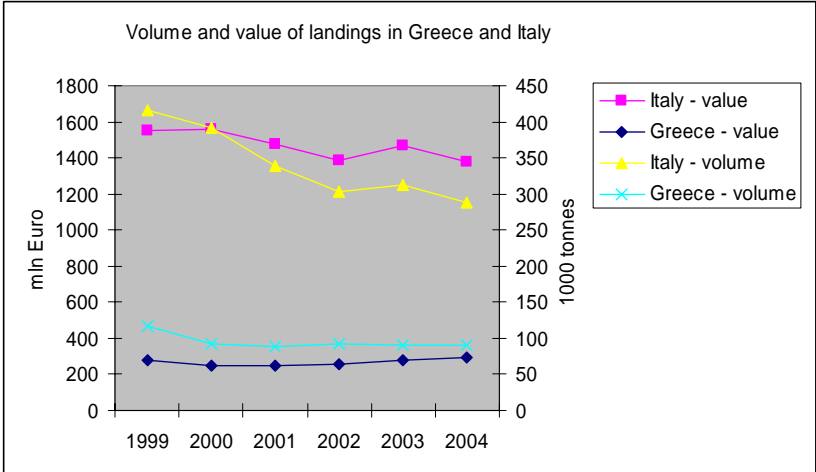


Fig. 6.11. Fisheries production in the Mediterranean

Table 6.6 Economic performance of selected fleet segments in the Mediterranean¹⁹

	1999	2000	2001	2002	2003	2004	Index 2004/1999
Economic indicators (mln Euro)							
Value of landings	1,541	1,536	1,467	1,387	1,472	1,462	95%
Fuel costs	217	263	235	210	216	240	110%
Other running costs	199	176	169	154	161	163	82%
Vessel costs	133	121	133	124	128	142	107%
Crew share	552	489	468	457	470	432	78%
Capital costs	127	120	97	112	111	112	88%
Gross cash flow	439	487	462	442	497	484	110%
Net profit	312	367	365	330	386	372	119%
Gross value added	864	856	833	787	856	804	93%
Physical indicators							
Employment	50,588	45,969	40,156	38,274	38,033	36,053	71%
Volume of landings	416	397	347	317	327	317	76%
Number of vessels	18,827	18,210	16,538	15,915	15,584	15,067	80%
Productivity indicators (value 1000 Euro, volume tonnes)							
Value / man	30	33	37	36	39	41	133%
Crew share / man	11	11	12	12	12	12	110%
Value / vessel	82	84	89	87	94	97	118%
Volume / man	8	9	9	8	9	9	107%
Volume / vessel	22	22	21	20	21	21	95%

¹⁹ France: Mediterranean trawlers 18-25 m; Greece: Thermaikos trawlers > 24 m, Thermaikos trawlers < 24 m;

Italy: Mediterranean trawlers, Purse seiners, Midwater pair trawlers, Dredgers, Multipurpose vessels, Small scale fisheries. Several minor estimations were included in the original data. Time series for Spanish Mediterranean fleets are not available.

6.2 Trends in fish processing

6.2.1 Production and trade

In 2002/2003 the EU fish processing industry employed 147,000 people. Recent development of employment in fish processing differs between Member States and between segments. Increasing demand for seafood in the EU results in new activities. Problems facing the industry are primarily related to labour costs, raw material supply and competition from extra-EU imports.

The EU market for seafood is increasing. FAO food balances indicate 1.5% annual growth of seafood demand in the EU-25 over the last 10 years. This creates new opportunities for processing and trade. Consolidations in EU retail markets and the increasing market share for seafood of these chains forces the fisheries sector to adapt to new market conditions. The fish processing sector is becoming less distinct from the wider food processing industry as:

1. Raw material sourcing is globalised and less associated with local landings;
2. Consolidation of the sector results in integration with larger food processing companies;
3. Introduction of new added value products (such as ready meals) means fish is one of many ingredients used.

These changes require development of human capacity for structural change. This relates to all business aspects, from sourcing and product development to new market requirements including health, environmental and quality aspects of production.

Employment dropped particularly in sectors that processed products from local supplies. Traditionally, these sectors used to work nearly exclusively with fresh landed raw materials and relied therefore heavily on local landings. Many companies shifted away from dependence on local landings. There is general movement in the EU towards added value and away from primary processing, which for the most part can be done more cost-effectively outside the EU in regions with closer access to raw material and/or far lower labour costs.

A part of employment in fish processing is expected to disappear as result of further consolidation of the industry. In most Member States the process of consolidation is now well advanced. However, still thousands of companies are involved in EU fish processing, in particular in the distribution chains for fresh products. Many processing companies are in a situation of transition from small-scale business to become producer of value added products and supplier of multiple retail stores. This transition is apparently difficult for many companies in the sector. The average size of many companies is small compared to the scale of clients in modern distribution channels. Many processors are too small to implement a full-grown product and process innovation strategy required to meet the standards of these clients. Continuing modifications will be needed. Currently, the ongoing

price wars among EU retail chains accelerate horizontal consolidation of the fish processing sector. The situation reflects the general position of EU food supplying sectors. It is expected that a larger share of employment in fish processing will be transferred to low-wage countries. Particularly the costs associated with employment and raw materials lead to processor concerns over their ability to compete with third country imports. The extent to which restructuring of processing to 3rd countries has been effectuated differs between countries, and between sectors in the same country. There is still much of the industry that cannot realistically compete head-on with processors from economies where wages are low. Imports of semi- and final products from 3rd countries increased substantially during recent years, e.g. imports fillets/blocks from 3rd countries +45% and crustaceans +65%), imports of fillets/blocks from China +190%.

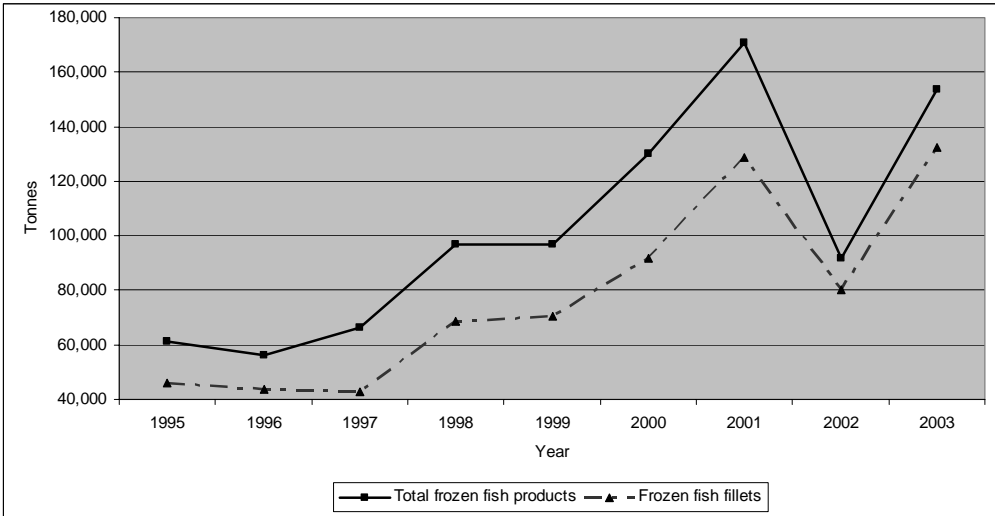


Fig. 6.11 Imports of frozen fish products from China, 1995-2003; Source: Eurostat

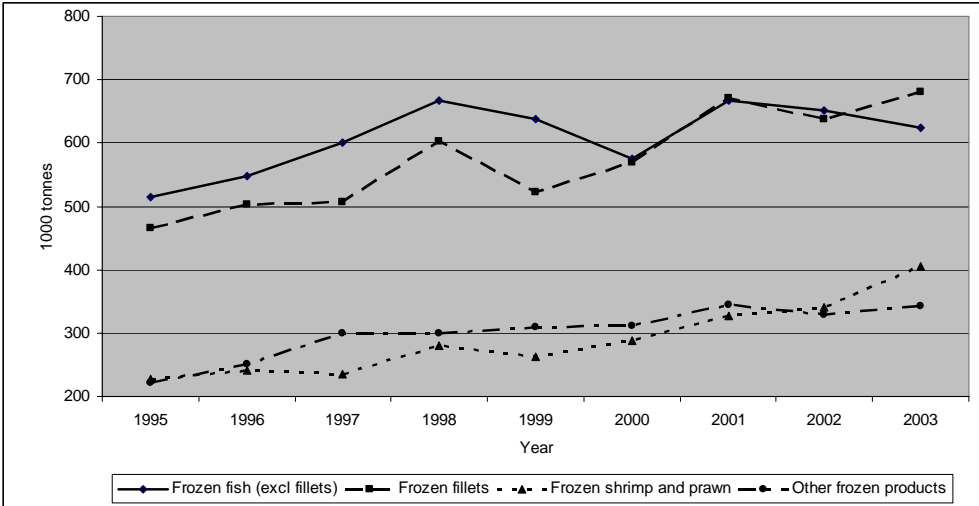


Fig. 6.12 Imports of frozen fish products from third countries, 1995-2003, Source: Eurostat

6.2.2 Trends in the North Sea fish processing

Some 35,000 people are employed in the fish processing and wholesale trade in the North Sea area. The main concentration of processing industry can be found in the UK (Scotland) and around Bremerhaven on the German North Sea coast. Denmark and Netherlands have also substantial fish processing sectors. With the exception of the Netherlands, the industry is largely dependent on imported raw materials.

Table 6.7 *Employment in the fish processing industry in North Sea region, 1996/8 – 2002/3*

	1996-1998	2002-2003	% change*
Belgium	1,261	993	-21%
Denmark	6,885	7,158	4%
Germany	7,273	7,600	5%
Netherlands	6,052	6,382	5%
United Kingdom	10,297	13,003	26%
Total	31,768	35,136	11%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

UK

UK processing industry is now 65% dependent on imports. Smaller, coastal-based primary processing companies are still largely dependent on local landings particularly for nephrops, pelagic species, crabs and salmon.

The secondary processing companies, larger businesses and ready meals producers have been dependent on imported raw materials (particularly whitefish) already for some time and this dependence has further increased due to fall in cod TACs. Local whitefish supplies represent as little as 20% of the total. There is a trend towards concentration and rationalisation. Small processing companies are doing poorly²⁰.

Denmark

Employment in Danish fish processing has decreased by approximately 25% over the past 10 years, but employment in the wholesale sector has increased. The output value and volume are relatively stable, although the value follows the price developments. Approximately half of the raw material originates from domestic landings and second half is imported.

Most industries use both domestic and imported raw material. Exception are fishmeal factories, mussel and trout processors which rely mostly on domestic supplies. In the early nineties, the Danish industry already relied heavily on imported raw material, but now some sub-sectors have become even more dependent on imports, particularly salmon, cod and shrimp processors.

²⁰ Source: Poseidon ARM Ltd, UK, private comments by Richard Banks

The number of processing companies has decreased from 254 in 1995 to 149 in 2002. Companies filleting and freezing whitefish hardly exist today. Production is outsourced to Poland and China. The average number of employees in 1995 was 27 and in 2002 36, which shows a tendency to concentration²¹.

Germany

Despite the small size of the German fishing fleet, there is a relatively important fish processing industry, concentrated mainly in the area of Bremerhaven. The reduction of the distant-water fleet forced the processors to turn to foreign sources. The increasing landings of German vessels in foreign ports led to a lower level of utilization of domestic ports and fish markets, and to reduced turnover for domestic wholesalers. This negative development has resulted in degradation of the infrastructure in German ports.

Frozen filleted sea fish, which is used as raw material for the fish processing industry, is the main import product. Approximately two-thirds of the German imports originate from non-EU countries. Norway being the most important trading partner, followed by Denmark and the Community of Independent States (states of the former Soviet Union). The high dependence of the processing industry on imports from non-EU countries gave rise to concerns that there could be insufficient raw material supply for further processing in the future²².

Netherlands

The Dutch processing industry uses over 50% imported raw material. Primary processing of shellfish and flatfish is dependent on local landings.

6.2.3 Trends in the Baltic fish processing

Baltic fish processing employs some 35,000 people, of whom many most in Poland and the three Baltic republics. After major restructuring of this sector in the new MS, there are signs of revival due to existing tradition in this area, low level of wages and foreign investments.

Baltic landings of herring, cod and sprat have traditionally been important inputs for fish processing industries in the countries around the Baltic Sea. However, Many companies cannot afford to be dependent on fluctuating local landings and therefore are also importing raw materials from other EU countries as well as from outside the Union. Processing industries in Poland, Lithuania and Estonia depend for 50 to 80% on imported raw material.

²¹ Source: Foi, Denmark, private comments by Max Nielsen

²² Source: FAO, fishery countries profiles, Germany

Table 6.8 Employment in the fish processing industry in the Baltic region, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Denmark	1,720	1,790	4%
Estonia	6,200	4,100	-34%
Finland	1,028	1,339	30%
Germany	1,159	2,196	89%
Latvia	na	6,484	
Lithuania	3,400	3,700	9%
Poland **	17,400	13,423	-23%
Sweden	1,993	1,843	-8%
Total	32,900	34,875	6%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

** Incl. processing located outside the three coastal NUTS-2 regions.

Poland

The Polish fish processing industry employs around 13,500 people, a decrease of 23% compared to 1996, but the numbers are increasing again, with about 14,000 people in 2005. About 50% of the fish processing industry is located outside the three coastal NUTS-2 regions. At the end of 2003, 340 fish processing plants were operational. The industry produced 273,000 tonnes of fish products. About 70% of raw materials is imported. Local landings of Baltic herring, cod and sprat make up 30% of the raw material.

Lithuania

The Lithuanian fish processing industry consists of 68 companies (2002). These produce 68,000 tonnes of fish products. Salted, smoked and dried fish accounts for 40% of the overall production and almost exclusively supply the Lithuanian market. The main exports are surimi products (34%) and frozen fish and fish fillets (23%). About 75% of raw material is imported.

Output volume of the Lithuanian fish processing sector has tripled between 1998 and 2002 while employment increased by about 9%. This indicates an important increase in productivity.

Sweden

The Swedish fish processing industry employed in 2005 about 1,843 people, a decrease of 8% compared with 1996/8 level. The main products are herring and cod. Prawn, salmon, mackerel and haddock are of lesser importance. The industry is dominated by a small number of large companies located on the Swedish west coast. Total of 182 companies is in operation. Many Swedish processors have been bought by or merged with Norwegian or Icelandic companies. This development has increased the availability of raw material to the Swedish industry, and has also been a way for Norwegian and Icelandic companies to get

access to the EU market. Swedish fish processing companies import about 80% of their raw material, mainly from Norway and Denmark²³.

6.2.4 Trends in the Atlantic area fish processing

Almost 56,000 people are employed in the fish processing and wholesale trade in the Atlantic region of whom 75% in France (Brittany) and Spain (Galicia). Despite of the problems with some of the important stocks leading to lower local landings, employment has increased by shifting to imported raw materials.

Table 6.9 Employment in the fish processing industry in Atlantic countries, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
France	13,021	18,245	40%
Ireland	3,262	3,439	5%
Portugal	6,475	6,300	-3%
Spain	19,914	22,858	15%
United Kingdom	6,358	4,922	-23%
Total	49,030	55,764	14%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

United Kingdom

The processing industry on the Atlantic coast is smaller than on the North Sea coast. The main centres for fish processing in the Atlantic region of the UK are located in South Western Scotland, Highlands and Islands and N. Ireland. General description of the UK processing industry can be found above in the North Sea paragraph.

Spain

Employment in the Spanish fish processing industry increased by 15% between 1996/8 and 2002/3. The main concentration of fish processing industries is found at the Spanish Atlantic coast of Galicia, where it employs some 15-16,000 people. The tuna canning industry in Galicia is almost entirely dependent on local landings. The sardine canning industry also depends heavily on local landings.

France

France has an important fish processing industry, employing approximately 21,700 people of which more than 18,200 in the Atlantic region. The main centres of fish processing are Bretagne (Concarneau and Duarnenez) with some 7,300 employees and Boulogne, where the employment is estimated at 3,700 people. The Breton tuna and sardine canning industries are largely dependent on local landings. Primary whitefish processing in Boulogne is also dependent on local landings.

²³ Source: FAO country profile Sweden

6.2.5 Trends in the Mediterranean fish processing

Fish processing industry of the Mediterranean region employs some 16,300 people, of whom about 66% in Italy and Spain. Similarly to fishing, the fish processing industry in the Mediterranean region is rather dispersed, without major regional concentrations.

Table 6.10 Employment in the fish processing industry in Mediterranean countries, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Cyprus	350	122	-65%
France	2,492	1,658	-33%
Greece	2,409	3,360	39%
Italy	6,447	6,708	4%
Malta	na	33	
Slovenia	na	237	
Spain	4,032	4,141	3%
Total	15,730	16,260	3%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

Italy

The Italian tuna processing industry is the third largest in the world and uses over 103,000 tonnes of raw material per year. Contrary to Spanish and French firms, in the Italian tuna canning industry almost all raw material is imported. Exports are around 5,000 tonnes, and are directed mainly towards neighbouring countries such as Switzerland, Greece and Slovenia. Italy's own catch of tuna of approximately 8,000 tonnes per year is mostly high priced bluefin tuna. It is consumed fresh domestically or exported to Japan.

Spain

The biggest part of the Spanish processing industry is in Galicia but there are also some centres of fish processing industry on the Mediterranean coast, particularly in Cataluña and Valencia.

Greece

Greek fish processing industry employs some 3,400 people. It has increased by almost 40% since 1996. The industry is largely dependent on local landings and local aquaculture.

6.2.6 Trends in Central European fish processing

Fish processing in the Central European countries is of little importance. The local products are mainly carps and trout from aquaculture. These are consumed locally and exported almost exclusively fresh.

Table 6.11 Employment in the fish processing industry in Central Europe, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Austria	100	234	134%
Czech Rep.	na	100	
Hungary	na	150	
Slovak Rep.	na	947	
Germany - extra	1,068	1,607	51%
Total		3,038	

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

6.2.7 EU fish processing industry – main conclusions

Summarizing, the main developments in EU fish processing industry are:

- EU consumption of fish and fish produces depends for more than 50% on imports.
- Increasing demand for seafood in the EU results in new activities;
- Availability of raw material from local landings is decreasing;
- The nature of secondary processing is still determined by supplies which used to be available from local fleets. With falling TACs the secondary processors rely increasingly on global sourcing and imported raw materials, often for more than 50%;
- Primary processing industries are in general still dependent on local landings;
- Trend towards new added value products (convenience foods) means that fish has become one of many ingredients used;
- Fish processing is being integrated with larger food processing companies;
- Increased competition from extra-EU imports, particularly from low wage countries like China; It may be expected that fish processing will increasingly be transferred to low-wage countries.

6.3 Trends in aquaculture

In 2002/3 EU aquaculture produced 1.4 mln tonnes valued at 2.8-2.9 bln Euro. It employed some 65,400 people. The principal aquaculture products of the EU are fish (trout, salmon, seabass, seabream), and molluscs (mussels, oysters and clams). Three main branches can be distinguished in EU aquaculture²⁴.

Marine fish

The farming of marine fish, dominated by salmon in Scotland and Ireland. There has also been a strong increase in the farming of seabream and seabass in the Mediterranean over the past decade (mainly in Greece). Even though it occupies a minor role in terms of quantity, turbot is also significant because Spain and France account for the entire farmed world production of this species. The rapid increases in production and imports have caused problems of declining prices and profitability, both for the salmon and for the seabream and seabass sectors. Intensive marine fish farming also suffers from environmental problems.

Crustaceans and molluscs

Molluscs accounts for more than 60% of the volume of marine aquaculture but for only 30% of the value²⁵. This is a traditional activity practised mostly by small family-owned companies. It can be locally important in economic terms and for job creation. The main producers of crustaceans and molluscs are Spain (mussel production in Galicia), France (oysters), Italy (clams in the Adriatic) and the United Kingdom. Main problems in this sector are fluctuations of production due to dependence on fluctuating climatic conditions and by increasingly frequent toxic algal blooms.

Freshwater aquaculture

Freshwater aquaculture mainly involves traditional trout and carps farming. Trout is the principal cultured species in the Union with annual production value of some 500 mln Euro. The main producers are France, Italy, Germany, Denmark and Poland. Main producers of carps are Poland, Hungary, Czech Republic and Germany. Both the trout and particularly the carp sector are facing problems of limited demand and low market value in relation to production costs.

²⁴ European Parliament, *Report on aquaculture in the European Union: present and future* - Committee on Fisheries Committee on Fisheries, 2002

²⁵ European Commission, *A strategy for the sustainable development of European aquaculture*, communication from the commission to the council and the European parliament, Brussels, 2002

6.3.1 Production

Total EU aquaculture production increased by 27% during the past 10 years from 1.08 to 1.37 mln tonnes live weight, but after 1998 production remained more or less constant. The increase between 1994 and 1998 was entirely due to seawater culture. Freshwater culture remained stable. Brackish water culture decreased but only makes up a small part of aquaculture production (table 6.12).

EU aquaculture production is approximately 3% of world aquaculture production (excl. aquatic plants) (42 mln tonnes in 2003)²⁶, but EU is the world leader for some species like trout, seabass, seabream, turbot, and mussels. The growth of European aquaculture production was considerably less than the growth of world aquaculture production, which doubled in terms of volume during the past ten years.

Table 6.12 EU-25 aquaculture production in millions tonnes live weight, 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	1.08	1.16	1.21	1.24	1.36	1.41	1.39	1.38	1.33	1.37
Freshwater	0.31	0.31	0.31	0.32	0.31	0.31	0.32	0.33	0.30	0.30
Brackish water	0.10	0.13	0.11	0.11	0.12	0.12	0.12	0.12	0.06	0.04
Seawater	0.67	0.72	0.79	0.81	0.93	0.98	0.95	0.93	0.97	1.03

Source: Eurostat, New Cronos

The total nominal value of aquaculture production increased by 49% between 1993 and 2003 to 2.8 billion Euro (table 6.13). Aquaculture constitutes 17% of the volume and 27% of the value of the total fishery production of the Union. The main producing countries are France, Italy, UK, Spain and Greece, accounting for 80% of aquaculture output in 2003. These are also the countries with largest employment in aquaculture.

Table 6.13 EU aquaculture value of production (mln Euro), 1993-2003

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-25	1,864	2,015	1,926	1,964	2,334	2,424	2,543	3,024	3,194	2,928	2,769
EU-15	1,762	1,902	1,805	1,839	2,198	2,284	2,389	2,849	3,015	2,777	2,612
Austria	10	10	8	8	10	10	11	13	12	11	9
Belgium	3	3	3	4	3	3	5	7	6	5	3
Cyprus	2	3	3	6	7	8	9	11	11	11	10
Czech Rep.	45	42	38	38	42	41	44	53	56	35	35
Denmark	107	115	111	113	124	127	135	159	167	119	75
Estonia	1	1	1	1	1	1	1	1	1	1	1
Finland	56	59	53	46	42	45	44	63	44	39	41
France	488	538	507	473	553	500	458	460	507	530	526
Germany	125	117	138	115	101	81	92	137	156	207	143
Greece	129	101	120	186	217	245	310	315	343	258	316

²⁶ FAO yearbook of fishery statistics, 2003

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Hungary	13	16	13	11	16	18	22	24	25	27	29
Ireland	64	62	58	65	68	76	73	107	102	120	98
Italy	295	295	321	311	351	401	343	493	464	357	459
Latvia	1	1	1	1	1	1	1	0	1	1	1
Lithuania	3	2	2	2	2	2	2	3	3	3	3
Malta	5	7	6	8	9	9	8	5	3	4	4
Netherlands	56	64	52	66	73	78	91	116	124	97	109
Poland	27	36	51	54	53	55	62	72	72	64	68
Portugal	30	33	22	25	42	45	37	55	62	47	40
Slovakia	3	3	3	2	3	1	2	2	2	2	2
Slovenia	2	2	2	3	3	3	4	4	4	4	3
Spain	139	171	191	197	219	274	323	409	438	396	320
Sweden	16	19	19	20	17	16	19	16	17	16	17
United Kingdom	245	14	203	212	376	382	449	499	572	576	457

Source: Eurostat, New Cronos

6.3.2 Productivity

Productivity differs widely between EU Member States with an average production value per employee of about 52,000 Euro for EU-25. The large differences in productivity mainly reflect the differences in capital input and manpower required for farming of different species. High productivity in the Netherlands reflects the high labour productivity of shellfish farming and the fact that in the shellfish processing sector, employment onshore has not been included.

Table 6.14 Production value per employee (2002-2003)

Country	Euro	Country	Euro
EU-25	51,819		
Austria	11,719	Italy	148,509
Belgium	36,155	Latvia	9,213
Cyprus	81,504	Lithuania	11,457
Czech Rep.	16,027	Malta	33,057
Denmark	87,398	Netherlands	909,558
Estonia	12,330	Poland	13,640
Finland	117,868	Portugal	62,682
France	24,274	Slovakia	14,545
Germany	47,039	Slovenia	12,020
Greece	76,412	Spain	49,470
Hungary	104,576	Sweden	32,646
Ireland	37,177	United Kingdom	68,387

Source: Eurostat production data and LEI/Framian employment data

6.3.3 Trends in the North Sea aquaculture

In the North Sea region some 1,600 people are employed in aquaculture. Denmark and the UK are most important in terms of output and employment. Between 1996/8 and 2002/3 Danish aquaculture employment grew slightly, but production decreased by 40%. Employment in the UK aquaculture sector on the North Sea coast probably increased although the data should be interpreted with care. Most of the UK aquaculture companies are however located on the Atlantic coast. The small aquaculture sectors of the Netherlands and Belgium both show a decrease in employment and an increase in productivity.

Table 6.15 Employment in aquaculture in the North Sea countries, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Belgium	17	4	-76%
Denmark	640	683	7%
Germany	41	62	52%
Netherlands	312	120	-62%
United Kingdom	537	736	37%
Total	1,547	1,605	4%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

Denmark

Traditional aquaculture in Denmark is trout farming, accounting for more than 90% of all production in the last 20-30 years. Eel for kabayaki to the Japanese market have been introduced with some success in the beginning, but slowed down after a bankruptcy in the largest and dominating aquaculture company. Research has also been done for pike-perch in smaller quantities. The most important development is the introduction of hanging rope mussel culture on a relatively large scale.

Traditional trout aquaculture has been stable in all respects in more than two decades. Increased competition from Poland may change that in the future. The sector has remained relatively unaffected by the introduction of farmed Norwegian salmon, as salmon and trout do not seem to be close substitutes on the market.

6.3.4 Trends in the Baltic Sea aquaculture

The Baltic aquaculture sector employs about 3,700 people of whom 55% in Poland alone and 20% in the three Baltic republics. The labour productivity in the new MS is at about 25% of the EU-25 average.

Table 6.16. Employment in aquaculture in the Baltic region, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Denmark	160	171	7%
Estonia	na	100	
Finland	624	501	-20%
Germany	83	39	-53%
Latvia	na	426	
Lithuania	na	315	
Poland **	na	2,000	
Sweden	364	200	-45%
Total		3,752	

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

** Incl. aquaculture located outside the three coastal NUTS-2 regions.

Poland

With some 70 mln Euro, Poland is the most important aquaculture producer in the region. This concerns predominantly traditional carp and trout farming. The Polish carp production has been stable in the past decade (20,000 tonnes), while the trout production more than doubled to 11,700 tonnes. The value of Polish aquaculture grew by almost 30% in the past 7 years. Aquaculture production in Sweden and Finland concerns mainly trout and has decreased during the past seven years.

6.3.5 Trends in the Atlantic aquaculture

About 40,000 people are employed in the aquaculture sector along the Atlantic coast, of whom about 50% in France.

Table 6.17 Employment in aquaculture in the Atlantic region, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
France	9,486	18,985	100%
Ireland	2,198	1,998	-9%
Portugal	6,475	6,472	0%
Spain	23,320	9,854	
United Kingdom	2,042	2,809	38%
Total	43,521	40,119	-8%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

In the Atlantic region the salmon sector is most important. Salmon is the main sea fish species farmed in the EU. The salmon sector makes up 17% of total EU aquaculture in terms of value. The main producing countries within the EU are UK (Scotland) and Ireland. The production has increased during the past 10 years, particularly in Scotland, but is now suffering from decreasing prices (Figure 6.13) due to increasing imports from Norway and Chile where the nature conditions for salmon farming seem to be more favourable than in the EU (colder water)²⁷. This is expected to affect future productivity and economic performance of the sector.

Table 6.18 EU salmon aquaculture - value of production, mln EUR, 1993-2003

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-25	271	338	220	232	367	380	446	532	571	570	465
Ireland	51	49	46	49	50	52	51	77	73	80	54
United Kingdom	189	257	140	149	287	299	362	423	467	468	389
Other	31	32	34	35	30	29	33	32	30	22	22

Source: Eurostat, New Cronos

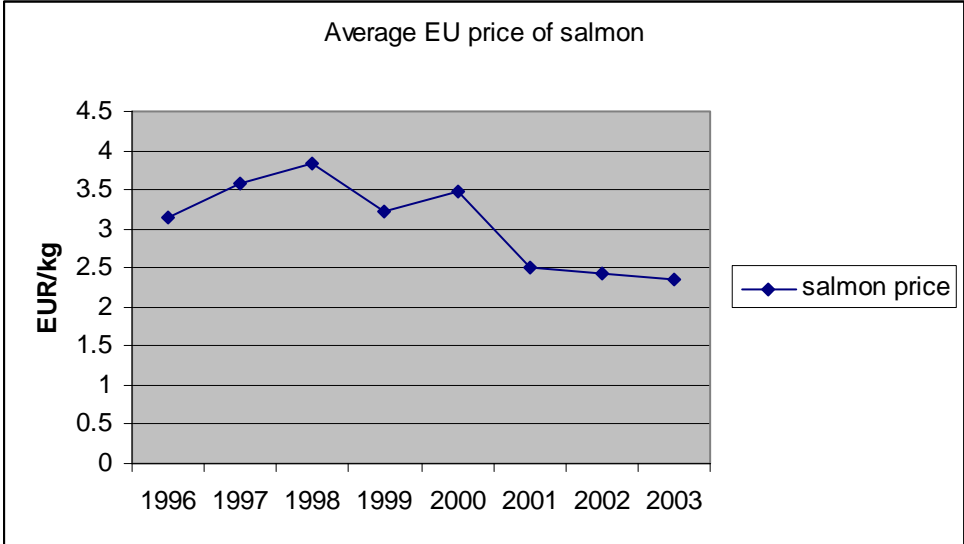


Fig. 6.13. Development of EU salmon prices

Source: FEAP, www.aquamedia.org

United Kingdom

In the UK there is a general trend to move to offshore sites as inshore regulations tighten. In the salmon sector margins are under pressure because of decreasing prices. Aquaculture of new species like cod, haddock and halibut has been introduced. Cod culture is

²⁷ Private comment by Kontali analyse, Norway

expanding due to demand and increasing acceptance of farmed product. Mussel culture is also increasing.

Traditional aquaculture of trout has remained stable over the past ten years. There is a trend towards larger units due to economies of scale. Particularly in salmon there is a trend to larger and deeper cage farms for cost reduction and to be able to compete with Norway, Chile and Canada. Economic performance in salmon aquaculture is rather poor due to import competition. Many companies face negative returns on investment. Some salmon farmers are looking to diversify into alternative finfish species, with halibut and cod being the most favoured. Investment in alternative species has increased, more particularly cod production in Shetland.

France

The French aquaculture industry is particularly diverse with including shellfish (oysters, mussels), freshwater fish (trout, carps) and marine fish (seabass, seabream, turbot). Production of marine fish has increased during the past decade.

The average annual production of shellfish is around 205,000 tonnes (130,000 t of Pacific cupped oysters, 1,500 t of flat oysters, 65,000 t of mussels, 2,000 t of cockles and 2,000 t of carpet shells). Rainbow trout is the most important freshwater fish while carp is produced in the traditional manner, using extensive farming techniques. Production of these traditional species has been more or less stable.²⁸

Spain

Spanish aquaculture concerns shellfish culture and the farming of freshwater and marine fish. While freshwater fish farming is dominated by trout production, there is also some farming of the European eel and restocking species. Marine fish farming has concentrated on the production of gilthead seabream, although seabass has increased in recent years. Of note is the consistent growth of turbot aquaculture.

Spain is the leading mussel producer in Europe with an annual production of around 250,000 tonnes during the past few years. The mussel industry is concentrated on the coast of Galicia. Some 30% of the mussel production is supplied fresh to the domestic market. The remaining 70% is sold to the processing industry for canning or freezing. The canned mussels are mainly (90%) sold on the domestic market²⁹.

²⁸ FEAP website, <http://www.aquamedia.org/>

²⁹ Source: Eurofish website, www.eurofish.dk.

6.3.6 Trends in the Mediterranean aquaculture

Mediterranean aquaculture employs almost 12,000 people. It concerns shellfish, freshwater and marine fish. Most important development in the past decades has been the rapid growth of farming of seabream and seabass. Between 1996 and 2002, production of these species in Spain and Italy more than doubled. In Greece production more than tripled. Greece is now the leading EU producer of seabass and seabream. Growing supply of these species has, however, also lead to decreasing prices.

Italy is the main aquaculture country in the Mediterranean region, but in the past 7 years employment decreased by more than 50%. Greece shows a more favourable development with employment increasing by 31% and production by 45%, mainly due to the growing production of seabass and seabream.

Table 6.19 Employment in aquaculture in the Mediterranean countries, 1996/8 – 2002/3

	1996-1998	2002-2003	% change*
Cyprus	na	127	
France	1,565	2,032	30%
Greece	3,157	4,145	31%
Italy	6,523	3,092	-53%
Malta	na	105	
Slovenia	129	254	97%
Spain	441	2,074	
Total	11,815	11,829	0%

* It is not possible to determine to which extent the indicated changes are a consequence of changes in statistical measurement and/or definitions.

Italy

In 2004 the production of the Italian aquaculture sector was 191.650 tonnes. Traditional aquaculture is represented by coastal lagoon management, from culture based fisheries to valliculture.

The number of land-based production units increased from 60 in 1993 to 74 in 2002, accompanied by a constant growth in production, due to constant technological improvement of existing land based plants. The number of cage installations increased from 4 units in 1993 to 48 units in 2002, with this number doubling in the last three years alone. At present Italian aquaculture sector consists of more than 130 farms.

Intensive coastal aquaculture began in the early 1980s in the same areas traditionally used for lagoon farming. Today land-based aquaculture farms are scattered along the entire coastal area and are mainly constituted by seabream and seabass farming. During the last two decades the national production of seabass and seabream has increased by around 70%, due to integrated production management. This rapid development, along with

international competition, has led to a decline of prices between 1991 and 2003 by approximately 65% for seabass, and around 60% for seabream.

Since 1995, reproduction techniques have been developed for the production of new species. 14 fish species and 11 shellfish species are cultured and/or being studied with a view to extending the number of farmed species, diversifying production and enhancing the presentation of aquaculture product on the market. At present the production of new finfish species is still restricted in relation to both market demand and the lack of standardized induced breeding and farming techniques.

Greece

The Greek aquaculture sector has been one of the fastest growing in the European Union, producing mainly European seabass and gilthead seabream, although there is also production of some minor marine and traditional freshwater species. Greece is the largest producer of seabream and seabass in the EU with a share of more than 60% of production of both species.

6.3.7 Trends in the Central European aquaculture

The aquaculture sector in Central Europe employs some 7,400 people. It produces mostly trout and carp. These are traditional fish farming sectors that have been relatively stable in terms of production volumes throughout the past decade. During the past ten years, trout farming gradually increased while prices fluctuated between 2 and 2.5 Euro/kg. Accession of Poland, Hungary and Czech Republic meant a sudden and significant extension of EU carp sector.

Table 6.20 Employment in aquaculture in the central European countries, 1996/8 – 2002/3

	1996-1998	2002-2003	% change
Austria	na	500	
Czech Rep.	na	2,167	
Germany – extra	2,741	2,932	7%
Hungary	na	1,530	
Slovak Rep.	na	233	
Total		7,362	

6.3.8 Main problems in EU aquaculture

Summarizing, the main problems facing EU aquaculture are:

- Market competition is very high. The EU aquaculture is under pressure of decreasing prices, partly caused by import competition.
- Marine sectors have been developing quickest but also experienced the most severe price decreases (e.g. salmon, seabream, seabass). Decreasing prices required increasing productivity and consequently the growing production hardly resulted in increasing employment.
- Increased competition for space, particularly in coastal areas.
- Increasing and complicated environmental regulations raise production costs.
- Negative public image of intensive fish farming due to negative environmental impacts.
- Traditional freshwater aquaculture is confronted with stagnating market demand in combination with declining prices. Particularly in the smaller farms this causes a continuity problem of intergenerational change³⁰. The sector is not sufficiently attractive for young family members to continue the business and for new entrants to start new businesses.

³⁰ FEAP, website: <http://www.feap.info/feap/>

7. Fishermen's education

7.1 Introduction

As far as fisheries education is concerned, it is necessary to distinguish between training of fishermen and certification systems. On both aspects, there are large differences between Member States. Some Member States have a complete training system for fishermen. Other Member States have set standards for skippers and chief engineers only. There are also a limited number of Member States that did not set standards for fishermen's training at all.

Due to this diversified situation, it is difficult to compare the level of fishermen's training in the different Member States and to provide a synthetic overview of fisheries education in the European Union.

However, relevant information on certification and on contents of the curriculum at fisheries schools are available for the majority of Member States.³¹ The social partners in the fisheries sector have produced an inventory and an analytic comparison of the training courses provided in the various training centres in the European Union in 2005. This inventory formed the basis for the creation the European Network for Fisheries Training and Employment. (REFOPE)³².

In the present study the information from the REFOPE study is further extended with the results of an additional survey conducted in the framework of this project. All fishing schools and marine institutes listed in the REFOPE database and many other institutions like fisheries ministries and fishermen's associations have been approached and asked to answer a set of questions that focused on recent changes in curricula due to technical developments and trends in the number of students. The questionnaire also addressed the implementation of the provisions of IMO's International Convention on the Standards of Training, Certification and Watch-keeping for Fishing Vessel Personnel, 1995 (STCW-F). Although the STCW-F Convention has been ratified by (only) two countries it can still serve as a reference for comparing training systems in different Member States and advances towards harmonization.

³¹ Recueil et analyse des informations nécessaires à la constitution de la base de données du REFOPE. Ithaque, for ITF & Europeche. 2004 .

³² Réseau Européen pour la Formation à la Pêche et l'Emploi

7.2 General overview

The summary of the present report (ch. 5) reflects the required educational level and training needs. Of some 207,000 fishermen, almost 100,000 work in coastal fisheries, by far most of them (about 70%) in southern EU Member States. It is estimated that about 40% of the coastal fishermen work in fisheries on part time basis and supplement their income from other sources. The nature of fishing sector is relatively traditional, with few larger companies owning more than 1-2 vessels. There are some 80,000 (skipper-) owners, which has specific implications for the educational needs in the sector.

The fishing fleet is composed of some 90,000 vessels. The composition by size and gear type illustrates the above statement, that a large number of fishermen work small vessels, close to shore, with a crew of 1-2 men who must also possess all required knowledge. For this group educational requirements, formally imposed by the authorities of the various Member States, are either rather limited or non-existent. Such requirements regard mainly seamanship, basic safety at sea and in some cases radio communication. Many of these skills are mainly obtained in practice.

Table 7.1 Composition of the fleet by size and gear type

Vessel length	Active gears	Passive gears
< 12 m	6,596	66,762
12-24 m	11,929	4,026
> 40 m	561	45

Source: EU fleet register, March 2005

On the other hand only a relatively small number of fishermen work on large vessels with crews of over 20 men where specific individuals possess specialized skills like refrigeration technology, etc. In view of the low number of vessels > 40 m, the required number of specialists is rather limited.

Tasks and responsibilities on board fishing vessels > 12 m can be largely distinguished between 'officers' (skipper, mate, mechanic) and deckhands. For this fleet it can be estimated that there are some 40-45,000 officers and about 65-70,000 deckhands³³.

The deckhands carry-out mostly relatively unskilled work, for which physical health and ability to work under harsh conditions at sea are of decisive importance. Their educational level is usually vocational training in the form of course in fishery schools, most important topics being seamanship and safety at sea.

Officers must evidently meet higher formal requirements, which are usually formulated by the national ministries responsible for marine navigation. Requirements imposed on skippers and mates contain apart from seamanship and safety at sea, topics like navigation,

³³ This estimate is based on the total of about 16,000 vessels in these size groups and 110,000 fishermen.

radio/radar communication, etc. The level of education required for the mechanics depends on the type of vessels and its equipment and contains mechanics, hydraulics, electricity and refrigeration. On large merchant vessels captains and mates are nowadays required to hold also mechanics' certification and in the fishing industry such trend can be expected as well.

Specific government agencies in the various Member States bear the responsibility to control whether educational requirements are satisfactorily met. They also monitor the adherence to minimum crewing standards, which are essential for safety. The interviewed agencies have confirmed that crewing standards are met.

Technological progress in the fishing sector is largely derived from other marine industries, as the fisheries sector itself is usually too small to generate major innovations. Similar to other sectors, most important technological development in fishing occurred in relation to the information and communication technology (ICT). Electronic regulation is increasingly applied in all components of equipment on board – propulsion, navigation, fish finding, satellite monitoring, etc. Introduction of electronic logbooks in 2007 is another example. Interviewed fisheries schools have confirmed that they closely follow such developments and adapt their curricula accordingly.

Apart from technological progress, the skippers / owners need respond to development in the economy and society at large. Increased competition due to globalization calls for a continuous improvement of the entrepreneurial qualities – efficient administration, cost effectiveness and higher prices through better fish handling and quality, are among topics which increasingly need attention. This need is also recognized by the fisheries schools.

There are strong indications that in most Member States the number of students entering fisheries education is structurally decreasing. This trend can be ascribed to economic and social developments. The economic situation of the fishing fleets has been difficult, with the consequence of falling incomes, decommissioning of vessels and decreasing employment opportunities. Status of the profession has declined. Working on board off-shore fleet implies separation from social life on shore, which is not an attractive prospect when other job opportunities are available.

The fisheries schools across the EU have been adapting to the new conditions. Wider variety of short courses has been developed, which are in some countries even given in fishing ports or communities, instead of the student having to travel to the school. Integration in general maritime education increases the future employability of their students.

7.3 Certification

In most Member States there is not a single certificate for the profession of fisherman but a series of certificates at several levels linked to different prerogatives depending on the type of vessel or navigation.

The table below illustrates differences in the minimum requirements to board on a fishing vessel.

Table 7.2 Training requirements to board on fishing vessel

MS	Training Course	Description and prerogative	Duration
BE	STCW-F Basic	Deckhand	40 h
ES	Fishermen's ticket	Deckhand	No courses Only examination
ES	Basic training	Obligatory to board on fishing vessels	150 h
FR	Basic training (CIN)	Deckhand	320 – 340 h
IE	Basic Safety Training	Deckhand	21 h
	FETAC -Certificate in commercial fishing	Deckhand	854 h
	FETAC – Basic Training		80 h
PO	Fisherman (navigator)	Helmsman	765 h
PO	Fisherman (engineer)	Qualified deckhand	250 h
UK	Basic Fire Fighting		9 h
FR	Fishing certificate	Qualified deckhand	2 years
SV	Basic Safety Training	Part of the Fishermen's Certificate requirement on all boats over 5 m	16 h
DK	Basic Safety Training	Compulsory for all fishing vessels	3 weeks
	The blue certificate	Skipper on vessels < 15 m	22 weeks
NL	SWVI	Helmsman/engineer 3 rd class	2 years
LT	Basic safety training		40 h
LT	Watch keeping mate	Watch keeping mate	896 h
LV	Fishing certificate		90 h

Source : REFOPE Study

Since Member States are using different thresholds (for instance 15 m, 24 m, 750 kW, 150 GT) in their certification system, comparison between Member States certification systems is difficult. The following table illustrates the different thresholds used in certification systems.

Table 7.3 Examples of skippers certificates

MS	Training course	Description and prerogative	Duration
NL	Stuurman / schipper SW VI	Helmsman/Skipper on fishing vessels < 24 m and <750 kW	3200 h (2 years)
IE	SVQ Level 3 marine vessel operations	Skipper in the inshore area <16 m	1 year
DK	Fishing skipper 1st class	Skipper on fishing vessels < 15 m	42 weeks
IT	Padrone Maritimo 2° cl. per la pesca	Skipper on fishing vessels < 150 GT	200 h
ES	Patrón de litoral	Helmsman on fishing vessels < 50 m, Skipper on fishing vessels < 30 m	2000 h (2 years)

Source : REFOPE Study

The issue of harmonization of training and certification systems has been raised during the development of the Common Fisheries Policy both within the Sectoral Social Dialogue Committee for the Sea Fishing Sector and the Commission. As has been stated above the STCW-F convention, which sets minimum standards of qualification for fishermen, has only been ratified by one Member State (Denmark). Nevertheless, the Social Committee, supported by the Commission, has taken some initiatives at a European level. These initiatives include various exchange programs (trainers and students), and the Benodet Seminar (2000) on *Mutual recognition of fishing certificates in the sea fishing sector in Europe*. In the Benodet report an overview of the fishermen's training systems of 9 Member States³⁴ is given.

The different fishermen's certification and training systems existing in the EU can be classified in three categories:

Member States such as *Ireland, Spain, France, Belgium, Portugal and Netherlands* have created a complete and separate training system for fishermen. These systems include:

- A complete set of requirements and certificates for Deck and Engineer officers for small-scale and large scale and inshore and offshore fisheries operations.
- The initial training for young students is integrated in the national training system in which general marine topics are provided along with more specific topics in relation with fisheries. Almost all diplomas can be obtained within the initial training on a continuous process. Most certificates are based on theoretical training along with practical training or a period at sea.
- Fishery schools that provide training both for students and active fishermen.
- A scheme for (young) adults entering the industry, based on minimum safety requirement to get on-board.

³⁴ Denmark, Germany, Spain, France, Ireland, The Netherlands, Poland, United Kingdom, Sweden.

Member States such as *United Kingdom, Germany, Italy, Denmark or Sweden*, have created more limited systems. These systems include:

- A limited set of diplomas and certificates mainly concerning officers (deck and engine).
- Training for deckhand is generally reduced to a short safety course.
- Active fishermen can obtain new diplomas (upgrade a certificate)(when taking additional courses. The school network is not necessarily dedicated to fishery training but more often integrated within the general vocational training system or merchant shipping training system.

A few MS such as *Poland, Estonia, Lithuania, Latvia, Greece, Malta and Cyprus* have no specific fishermen's training at all. There are no requirements for engaging in coastal fisheries. Marine institutes issue certificates for officers that are required for offshore fisheries. At these institutes some additional programs for students who intend to be fisherman are given (Latvia, Poland, Lithuania).

Requirements of STCW-F 1995 mainly concern deck and engineering officers. Although all but one Member State did not ratify STCW-F 1995, most Member State have set standards of training similar to STCW-F requirements. The standards concerning deck officers generally include Seamanship, Navigation, Engineering, Fishing techniques, Stability, Firefighting, First-Aid, GMDSS and SRC radio.

For deckhands the level of training requirements varies significantly between Member States. In some Member States there are no training requirements at all (Malta, Cyprus) or Basic Safety training is the only requirement to start a career as a fisherman (France, United Kingdom). In other Member States the requirements are extended and include Watch keeping and other courses.

Concerning the standards of training of deck and engine officers in connection with the actual level of training of active fishermen, there is often a requirement for a minimum period of practical experience in combination with a short course or an exam to obtain or upgrade skippers or engineering certificates. A higher certificate enables a skipper or engineer to increase his classification to larger vessels or a wider area (off-shore). For the younger generation the vocational training system is often containing different training levels giving different prerogatives.

7.4 Training

7.4.1 Fishing training centres

As far as training in fisheries is concerned, 4 centres have been identified in this study in the Baltic states (See paragraph) in addition to the 89 centres identified by REFOPE.

Table 7.4 Number of training centres per Member State)

MS	Number	MS	Number	MS	Number	MS	Number
BE	2	ES	21	IT	3	PL	1
CY	0	FI	1	LT	1	PT	4
DE	4	FR	24	LV	2	SE	2
DK	4	GR	1	MT	0	UK	13
EE	1	IE	3	NL	6	Total	93

Source : REFOPE Study

Generally training centres can be divided in 2 main types;

1. Centres dedicated to fishermen's training which usually provide a full set of diplomas and certificates both for students and for active fishermen.
2. Marine institutes that train for merchant shipping activities, which also provide courses for fisheries training.

7.4.2 Occupational standards/qualifications for fishermen

As far as diplomas and certificates are concerned, national agencies or ministries develop the standards of training for fishermen's training. In many countries the ministry or agency, which is primarily responsible for marine safety, also sets the standards for fishermen's training. In some Member States different agencies are involved. Often the Ministry of Transport is concerned with safety qualifications whereas another ministry (Agriculture and Fisheries/Education) is concerned with other professional qualifications.

Training requirements for fishermen are developed internationally in the framework of IMO and set by the 1995 international STCW-F Convention. Also the 2001 FAO/ILO/IMO Document for Guidance on Fishermen's Training and Certification provides guidance for the institution, amendment or development of national programs for the vocational training of any category of fishermen. The STCW-F Convention sets minimal requirements concerning skippers and watch-keepers on vessels of 24 meters in length and over, chief engineers and engineering officers on vessels of 750 kW propulsion power or more, and personnel in charge of radio communications. It also includes requirements for basic safety training for all fishing vessel personnel.

In line with (the requirements set by) STCW-F, training programs in most EU-Member States focus on skippers and engineers (officers). Training requirements for small-scale fishermen are rather limited and in some countries absent.

Fishermen's training systems include many qualifications that are also compulsory to board on merchant shipping vessels. Since the STCW Convention already entered into force, basic training requirements concerning navigation, communication (GMDSS), safety at work, fire fighting, first aid, are already implemented in the regulations and included in the marine education systems of all seagoing Member States. It can be concluded therefore that training systems for fishermen as it concerns larger fishing vessels are up to date with STCW requirements.

Several Member States have also implemented STCW-F requirements in their training systems (France, Spain, Portugal, Denmark, Latvia, Lithuania) or are moving towards the adoption of these requirements (United Kingdom, The Netherlands,).

As stated training programs for fishermen active in small-scale fisheries are rather limited. In countries like Denmark, United Kingdom, Portugal, Spain, Ireland a basic safety course is required. In Cyprus, Malta, Greece there are no educational standards to enter artisanal fisheries.

7.4.3 Equipment and didactical resources

The table 7.4 above shows that the technical and didactical resources are broadly available. Some didactical materials such as simulators (fishing, navigation or communication) have been developed on a shared-resources basis due to their high cost.

Table 7.5 Didactical resources in fisheries training centres

	Resources available in the centre itself	Resources available in outside the centre
Computers	33	0
Radar simulator	28	4
Navigation simulator	27	4
Documentation centre	25	1
Radio Simulator (GMDSS)	23	4
Security materials	20	12
Didactical CD-Rom	20	
Engine simulator	19	9
Fishing simulator	16	4
School boat	15	8
Language laboratory	14	2
Distance training materials	9	0
Flume tank	0	1
Marine mechanics simulator	0	1

Source : REFOPE Study (based on 35 centres)

7.5 The level of fishermen's training

It can be concluded that mandatory requirements in most cases determine the level of training of the active fishermen. The majority of fishermen only upgrade their training level if the regulations require this or in case they want to extend their working area. Only the younger generation of fishermen in countries with a vocational training system for fishermen (i.e. Portugal, The Netherlands, France, Spain) has reached a higher standard of education than is required by their position on board.

The majority of fishermen's training centres contacted in the framework of this study have stated that they have continuously adapted the training curriculum in response to new (technological) developments. More attention has been given to the use of the computer (digital charts), refrigeration techniques and modern satellite navigation and communication equipment.

An analysis of the information given by training centres and competent authorities concerning the actual training levels of fishermen leads to the conclusion that the training level of active fishermen nevertheless could be raised on the following fields: stability, working environment, risk assessment and management, fish quality, business administration and environmental awareness. These fields are described in the following sections.

Stability

Every year fishing vessels capsize sometimes with a loss of life of fishermen. Clearly the risks involved with the use of (heavy) fishing gears are often underestimated or misjudged. Fishing vessel stability courses that highlight the risks involved in fishing and the risks that structural modifications may have on vessel stability and safety, can reduce the number of accidents with fishing vessels.

Working environment/risk assessment

Fishing is one of the most dangerous professions that exist, looking at the number of accidents. Increasing the awareness of fishermen of dangerous activities and dangerous spots on a fishing vessel can decrease the number of accidents significantly.

Health and safety requirements for fishing vessels are set out under European and national legislation. In some countries regulations place an onus on vessel owners and skippers to manage safety on board of their vessel in just the same way as any other place of work. This can vary with a written Risk Assessment and Policy Statement to a complete Safety management System depending on the hazards identified and the size of the vessel.

The purpose of carrying out risk assessment is to help the owner/operator identify any areas or activities that may place the health and safety of crewmembers at risk. Many fishermen consider the task of a Safety Statement difficult with many fishermen not fully understanding what is required. Therefore courses on Safety Management can enable vessel operators to improve the development of a culture of safety onboard.

Fish quality

A better handling of fish on board can improve the quality of fish and consequently lead to higher selling prices. Nevertheless in most Member States fishermen work according to traditional fish handling methods and the issue of fish quality is neglected.

Improved (innovative) fish handling methods can be developed in cooperation with the fish processing industry and could result in higher prices and the opening of new markets. Therefore attention to the aspect of quality could compensate for the negative effects of reduced quotas on fishermen's income.

Business administration/entrepreneurship

Much of the fishing industry has undergone considerable changes in the past decades. This due not only to technical advances but also to changes in the control and management of fishing resources. There has been a large increase in the number of regulations fishermen have to deal with. The ability to adapt to new situations demands another attitude of fishermen to their profession. Many fishermen have to change how, where and when to fish in order to keep in business. The ability to respond to new developments in regulations and fish markets and prices means that fishermen should be trained in new skills that make them more professional entrepreneurs.

Environmental awareness

Over-exploitation of fish stocks has resulted in increased social and economic pressure from environmental groups on the fishing sector. There is also an increasing public awareness of other side effects of fishing like by-catches and discarding, impacts on marine mammals and effects on the sea bottom. The increased attention to conservation has resulted in an increase in regulations concerning by catches and the environment. The European Commission has implemented a large number of technical measures.. There are also regulations (MARPOL) dealing with the handling of chemicals (paint and oil) and waste on (fishing) vessels. To be able to respond to these developments fishermen's training should include conservation issues. The EU could help to develop training modules on environmental matters and stimulate the exchange of experiences and training material.

7.6 Current trends in fisheries education

Decreasing number of fishery students

The fishing industry in Member States such as Denmark, Spain, France, United Kingdom and the Netherlands is facing difficulties to attract young people for a career in fishing. This is a consequence of the development in the fisheries sector as well as of the society at large. Crew revenues have been falling due to lower quota, which are not compensated by higher fish prices. The profitability of the fishing vessels has been relatively poor, so that important numbers of vessels have been stopped and investments in new vessels have been low. In some countries intrinsic value of fishing rights have made transfer of companies from father to son very costly. The young generation increasingly values social life on shore, which is difficult to combine with prolonged periods at sea. Finally, image of the profession has deteriorated and importance of professional mobility (employability) has increased.

France and Spain host over 50% of all fishermen's training centres in the EU. In both countries the number of schools has declined in recent years in response to the decreasing number of students. In Denmark the number of students entering the apprenticeship program of the Danmarks Fiskeriskole decreased dramatically in 2005. Also the Netherlands faced recruitment problems in its fishing sector. The number of students at fishery schools has dropped some years ago but seems to be relatively stable in recent years. Several countries have developed programs to attract new students for fishermen's vocational training. Leaflets have been printed, schools have been advertised, and attractive Internet sites have been developed³⁵.

Shift to modular training courses

A clear trend throughout the EU is a shift to the modularization of fishermen's training. Most training centres provide modular courses in safety, the use of radar equipment (GMDSS), navigation, first aid and fire fighting. Active fishermen attending these courses can upgrade their certificates and extend their career possibilities.

Ireland has developed an Integrated Training Plan for the Irish Seafood Industry 2000-2006. The plan sets out the strategic needs of the fishing, aquaculture and processing industry and the planned training delivery programs to address these needs. The program includes addressing the skills deficit by fostering a life long approach to learning, improving access to learning and provide flexible modular courses structured to work based learning. By providing innovative modular training courses, the development of

³⁵ The Netherlands: <http://www.spetterendeopleidingen.nl/>; Belgium: <http://www.zeekiezen.be>

career paths and remuneration in accordance with qualifications it is planned to attract new entrants and to retain the existing workforce.

The shift to modular training is partly a response to the decreased number of students attending vocational training and entering the profession. An increasing number of young workers coming from other sectors enter the industry at the age of 20 or 25. The training needs of this group are different: they can not attend long vocational training courses but need to be rapidly trained in technical issues, including safety, before taking on-board.

Responses to technical and other developments

The increasing necessity of providing a quality product has had a major impact on fishing operations. The handling of fish on board and the storage of fish under controlled conditions also changes the qualifications needed. Instead of storing fish on ice in a simple isolated fish hold many fishing vessels now have refrigerated cold-rooms with complicated cooling systems. Skills to operate and maintain these systems are therefore needed. A significant number of training centres stated that they have developed training courses on fish handling and processing. Refrigerating techniques are nowadays an important part of the training system for engineers on fishing vessels. On large freezer-trawlers specialized refrigeration engineers with a higher technical education are employed.

The development towards the use of radar, satellite navigation and communication and the introduction of digital charts demands skills to operate and maintain these systems. On all training centres a GMDSS course as is required by STCW-F is given.

Young people entering vocational training are often familiar with the use of computers. They make increasing use of media like digital photography and film. They can make digital photos on board of engines or engine parts and store this information on a computer. This information can be exchanged and discussed at school. They also make more and more use of the Internet to download information. Computer simulations of fishing gear (nets, water boards) can improve their skills in using (rigging) them. A Dutch fishing school stated that the fast increasing use of the computer has resulted in a demand of more computer operation possibilities at the school. A solution thought of is to provide all students with a laptop.

Competence learning

Both STCW-F and the Guidance on Fishermen's Training and Certification include the functional skill training-option. A skill-based training system involves a different approach to curricula, methods of teaching, assessment and certification to those traditionally used. It focuses on the ability of a person to perform skilled tasks and the practical application of knowledge in a range of variable operational situations. Competency is determined when the fisherman can prove his ability to perform a predetermined range of skills or functions to an agreed standard.

In the Netherlands this approach is called competence learning and a new training system based on competence learning will start at the Dutch fishery schools in 2008. Through the new system the number of so called end-terms used in the current training system (698) will decrease significantly to 13 qualifications and 12 taxonomy codes. Currently the different fishing schools are experimenting with the new system. Since competence training is based more on skills than on knowledge it also needs a different form of examination. Teachers have to be able to analyze the behaviour of students when performing a task. The new system therefore also requires new skills and training for teachers.

Environmental awareness

An important development in the last decades is the steady increase in the public awareness of the impact of fishing on fish stocks and the environment. Due to this process there have already been large changes in the control and management of fisheries. Since these changes affected the operations of fishermen all fishermen are aware of this process. However it is important that fishermen can understand the criticism and anticipate on it.

In several Member States (Denmark, Ireland, The Netherlands) the vocational training programs for fishermen's training also include conservation matters. In the Netherlands the fishing schools cooperate with the so-called Pro Sea organization. The course includes visits to the Netherlands Institute for Sea Research (NIOZ) where the students attend lectures of marine biologists.

In Ireland conservation and environmental oriented units are included in the training modules within the new FETAC³⁶ Certificates in Commercial Fishing, Aquaculture and Seafood Products.

7.7 Needs in fishermen's training

Attracting new entrant to the fishing sector

The challenge met by the fishing sector is the same in many Member States. The fishing industry meets stiff competition to attract new entrants. It becomes more and more difficult to maintain a fisheries specific training system in the context of declining employment and recruitment. Aware of this evolution, the training centres and the social partners, supported by the Commission have been working for several years to bring together the European training centres through the REFOPE. They have identified various matters for EU-Cooperation, which could be supported by the European Fisheries Funds. Among these are the development of innovative training systems and exchange of training material.

³⁶ Further Education and Training Awards Council

Access to training

To provide easier access to training in Ireland BIM has fitted out two mobile Coastal Training Units (CTU's) consisting of 12 meter trailers that will deliver training to isolated areas. The CTU's provide radio training, promote the development of a safety culture and provide training to women and family members involved in small-scale family enterprises.

Another possibility to provide easier access to training is the development of distance learning and Internet delivery techniques. For instance BIM has developed an e-learning course on Navigation and Stability. The course runs over 12 weeks with two weeks between each course unit. Students have to complete a short review at the end of each two-week unit to ensure that they keep up with the studies. At the end of the course there is an assessment of the students knowledge. Assessments requiring demonstrations of skills and competence will require attendance at a designated BIM training centre.

Several training centres have raised another issue concerning access to training and that is the financial aspect. Active fishermen taking a training course will lose revenues from fishing in the mean time. Especially for fishermen involved in small-scale fishing this loss of income will prevent or discourage them to take professional training. A compensation for the missed revenues therefore could encourage fishermen to improve their professional skills.

Minimum standards of training for fishermen

Member States like Poland, the Baltic States, Cyprus and Malta need to develop minimum standards of training for all fishermen. These countries could benefit from experience and already existing training programs from other Member States.

Development and exchange of training materials

The European Union could support the development and exchange of training material and cooperation in the development of training materials. Existing didactical materials such as CDs, books and software could be adapted or simply translated. On each topic, a few training centres of reference could co-operate to produce and manage a resource base of didactical materials. Possible topics are:

- Safety at sea;
- Management of resources;
- Fish handling;
- Management of small fishing enterprise.

Exchange of students, exchange of trainers

Exchange programs of young fishermen (students) during their training period or just at the start of their professional life could contribute to broaden their horizon and improve their professional quality.

It could be organized by the training centres on a short-term basis (a few days study tour) or medium term basis (a few weeks including taking on-board and short courses)³⁷.

The development of competence based training systems which are more in line with the requirements of STCW-F asks for new skills of trainers. An additional training program (refreshing course) for teachers in fishing centres could contribute to the harmonization of fishermen's training in the EU.

Funding

Lack of financial resources in some Member States restrains the establishment of fishermen's training. For instance in Malta there is no fishermen's school. There is also no certification system for fishermen. In the artisanal fleet experience is handed over from father to son. For the 22-24 m vessels an approval (stamp in the seamen book) from the Ministry of Agriculture is needed for the skipper. This approval is given on the basis of practical experience. The Maltese Fishermen's Co-operation has asked the Maltese government for the establishment of a fishermen's training course at the Malta College of Arts, Science and Technology (MCAS). The Maltese government replied that it is waiting for the necessary funds. Similar situations exist in Cyprus and Greece.

Mobility of fishermen

Fishermen mobility between MS tends to rise, both for deckhands and officers. For instance in the United Kingdom, The Netherlands and Denmark an increasing number of foreign crews have been drafted. This development poses new challenges to communication skills of skippers and crew. Language courses for foreign crews could provide in the need to improve the communication on board.

The Benodet seminar has shown that the lack of mutual recognized fishing certificates restrains fishermen's mobility within the EU. The current system is not based on a recognition of certificates but on recognition in each individual case. The competent authorities have to evaluate the professional qualifications of each applicant by comparing the training acquired in the Member State of origin with the training required in the host Member State. These procedures take time and they may restrain the free movement of workers. There is therefore a need for harmonization of fishermen's certificates in the EU.

³⁷ - Such a program already exist (young workers exchange European program) by the past and proved to add extra value to training courses.

8. Foreign workers in the fishing industry

The study reveals that registration of foreign employment in the EU fishing industry is limited or non-existent. Estimates of the number of foreign workers in the fish industry are available for Estonia, France, Netherlands, Portugal and Spain. In these countries foreign employment on board varies from 3% in Portugal to nearly 10% in Spain, France and Netherlands.

Table 8.1 Foreign workers on board of fishing vessels

	EU-15 nationals	Non-EU nationals	Total foreign workers	Percentage of employment on board
Estonia 2)	.	.	1,100	45%
France	824	860	1,684	8%
Netherlands	.	217	217	9%
Portugal	.	.	700	3%
Spain 1)	1,045	2,633	3,678	8%

1) Associates collective insurance of Inst. Social de la Marina; 2) Mainly Russian.

If this sample gives an impression of the situation on the whole EU fleet, the total number of foreign workers should be 5-10,000. The figure varies not only between Member States but also between fleet segments and by vessel. The number of deckhands with non-EU-15 nationality is over 50% on some Spanish and Dutch vessels. Foreign employment is generally high in regions where supply of cheap labour is near at hand, e.g. Egyptians in Greece, Tunisians in southern Italy, Moroccans on southern Spanish fleets and a variety of nationalities on vessels operating on fishing grounds of 3rd countries. The number of foreign workers tends to be high on factory vessels and other large vessels with a formalized labour relation between owners and crew. Experts expect that the number of foreign workers on EU vessels is increasing.

Formally a large number of EU-15 nationals work on quota hopping vessels that use the flag, fishing licence and quota of another Member State. This concerns mainly Spanish and Dutch nationals that work on vessels registered in the UK, France, Belgium and Germany. Data on the total crew number on quota hoppers are not available.

Also data on employment of foreigners in fish processing is limited or non-existent. Their number is estimated to be relatively low. It is known from previous regional studies that in some Member States, e.g. Germany, specific ethnic groups with a non-EU background work in fish processing. In general, these people will have now the nationality of that Member State. An increasing number of fish processing businesses with main residence in the old Member States shift an increasing share of their activities to countries with low wages and/or good access to raw materials, e.g. the new Member States, Africa, and China.

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1. AUSTRIA

1. Trends in the fisheries sector, 1997-2004

	Employment				Change/yr 97-04
	1990	1997	2004	2005	
Fishing					
Fish processing		100	234	230	12.1%
Aquaculture		800	500	500	-6.7%
Total		900	734	730	-2.9%
Inland fishing			150		

2. Fisheries dependence, 2004

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
at Austria	734	0.02%		

Major fishing ports

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	31,389	100	71
Fisheries total	24,984	80	73
Fishing			

4. Average age (years)

National	38
Fisheries	33

5. Fleet and employment characteristics

	Coastal	Off-shore	Total
Employment			
Number of vessels			
GT			
kW			

6. Value of landings (mln euro)

	1997	2003	Change
Nominal			
Real			

7a. Employment by region and gender, 2003

Region	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,048	1,688	3,736	454	280	734
	55%	45%		62%	38%	
Total coastal regions <i>at</i> Austria						
Total non-coastal r.	2,048	1,688	3,736	454	280	734

7b. Employment by fisheries sub-sector, region and gender, 2003

Region	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total				129	105	234	325	175	500
				55%	45%		65%	35%	
Total coastal regions <i>at</i> Austria									
Total non-coastal r.				129	105	234	325	175	500

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	36,138	25,626	31,389	27,655	20,195	24,318

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage				36,436	25,265	31,409	24,177	17,144	21,000

9. National and fisheries employment by gender and age category

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	255	216	471	57	36	92
25-34	496	442	938	110	73	183
35-44	637	531	1,168	141	88	229
45-54	459	386	845	102	64	166
55-64	184	101	284	41	17	57
65+	18	12	30	4	2	6
Total	2,048	1,688	3,736	454	280	734

10. Characteristics of employment in marine fishing

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons						

Austria

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	
Fish processing	MoA, gender assumed F/M=45/55
Aquaculture	NSO, 2004, F/M=35/65 1)
Inland fishing	MoA, 2004
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat 2003
Fishing	
Fish processing	Eurostat, 2002, all processing industry
Aquaculture	NSO, 2005, F/M ratio assumed as national employment
3. Age distribution	
National	Eurostat, 2003
Total fisheries	Assumed identical to national age distribution
4. Further characteristics	
Coastal / off shore	
Owners / deckhands	
Full time / part time	
5. Historical data	
Employment	1999 studies
Value of landings	

1) Verband Österreichischer Forellenzüchter

2. BELGIUM

1. Trends in the fisheries sector, 1990-2004

	Employment				Change/yr 97-04
	1990	1997	2004	2005	
Fishing	900	750	666	655	-1.7%
Fish processing	1,200	1,261	993	959	-3.4%
Aquaculture		137	84	84	-7.0%
Total		2,148	1,743	1,698	-3.0%
Inland fishing			na		

2. Fisheries dependence, 2004

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependance rate	Employment	Dependance rate
be25 Prov. West-Vlaanderen	1,663	0.3%	666	0.1%

Major fishing ports	82% vessels	92% kW	92% GT
be25 Prov. West-Vlaanderen	Oostende, Zeebrugge		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	30,071	100	84
Fisheries total	34,914	116	67
Fishing	44,200	147	

4. Average age (years), 2003

National	40
Fisheries	41

5. Fleet and employment characteristics, 2004 (fleet 2005)

	Coastal	Off-shore	Total
Employment	0	666	666
Number of vessels	1	122	123
GT	5	23,284	23,289
kW	221	66,449	66,670

6. Value of landings (mln euro), 1997-2003

	1997	2003	Change/year
Nominal	86	90	0.8%
Real	86	82	-0.7%

7a. Employment by region and gender, 2004

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,317	1,753	4,070	1,231	512	1,743
	57%	43%		71%	29%	
Total coastal regions	271	204	475	1,172	491	1,663
be25 West-Vlaanderen	271	204	475	1,172	491	1,663
Total non-coastal r.	2,046	1,550	3,596	59	21	80

7b. Employment by fisheries sub-sector, region and gender, 2004

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	665	1	666	505	488	993	61	23	84
	100%	0%		51%	49%		73%	27%	
Total coastal regions	665	1	666	505	488	993	2	2	4
be25 West-Vlaanderen	665	1	666	505	488	993	2	2	4
Total non-coastal r.							59	21	80

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	32,326	27,092	30,071	38,606	26,037	34,914

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	44,200		44,200	31,999	25,950	29,026	32,326	27,092	30,893

9. National and fisheries employment by gender and age category, 2004

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	190	152	342	170	56	226
25-34	596	507	1,104	292	108	400
35-44	715	571	1,286	316	128	444
45-54	594	411	1,005	253	123	376
55-64	205	105	310	182	92	274
65+	17	7	24	19	5	24
Total	2,317	1,753	4,070	1,231	512	1,743

10. Characteristics of employment in marine fishing, 2004

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	0	666	50	616	666	0

Belgium

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	CRB, 2004
Fish processing	CRB, 2002
Aquaculture	CRB, 2002
Inland fishing	MoA, data not available, but number is very low
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	CRB, 2004
Fish processing	CRB, assumed that all processing in West Vlaanderen, 2002; excl. wholesale (940 persons)
Aquaculture	CRB, 2002
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat 2002, national economy
3. Age distribution	
National	Eurostat
Total fisheries	Estimate on basis of CRB. Information on total fishing and general age model for fish processing and aquaculture.
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	CRB
Full time / part time	CRB
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

CRB = Centrale Raad voor het Bedrijfsleven

3. CYPRUS

1. Trends in the fisheries sector, 1995-2003

	Employment				Change/yr 95-03
	1991	1995	2003	2005	
Fishing		970	926	910	-0.6%
Fish processing		350	122	120	-13.2%
Aquaculture			127	127	
Total			1175	1157	
Inland fishing					

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
cy Cyprus	1,175	0.4%	926	0.3%

Major fishing ports	66% vessels	80% kW	90% GT
cy Cyprus	Potamos, Ayia Napa, Paralimni, Larnaca, Limassol		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	21,728	100	70
Fisheries total	7,340	34	174
Fishing	4,520	21	

4. Average age (years), 2003

National	41
Fisheries	45

5. Fleet and employment characteristics, 2003

	Coastal	Off-shore	Total
Employment	657	269	926
Number of vessels	821	75	896
GT	2,398	7,738	10,136
kW	27,668	22,828	50,496

6. Value of landings (mln euro), 1997-2002

	1997	2002	Change/year
Nominal	15	12	-4.5%
Real	15	11	-7.1%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	182	146	327	1,065	110	1,175
	56%	44%		91%	9%	
Total coastal regions cy Cyprus	182	146	327	1,065	110	1,175
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	916	10	926	44	78	122	105	22	127
	99%	1%		36%	64%		83%	17%	
Total coastal regions cy Cyprus	916	10	926	44	78	122	105	22	127
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	25,047	17,585	21,728	6,862	11,966	7,340

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	4,520	4,520	4,520	21,201	12,461	15,613	21,281	13,597	19,950

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	16	17	32	75	7	83
25-34	44	42	86	153	26	179
35-44	49	42	90	264	41	305
45-54	42	31	74	315	26	341
55-64	23	12	35	247	10	256
65+	8	2	10	11	0	11
Total	182	146	327	1,065	110	1,175

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	657	269	549	377	926	0

Cyprus

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA, 2003, assumption M/F=97/3
Fish processing	MoA, 2003, since 2003 employment constant or slightly increasing
Aquaculture	MoA, 2003
Inland fishing	
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	Estimate based on crew share, which is assumed at 35% of the total value landings
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades workers (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on MoA (2003)
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	MoA, 2003
Full time / part time	MoA, 2003
5. Historical data	
Employment	FAO
Value of landings	MoA

4. CZECH REPUBLIC

1. Trends in the fisheries sector, 1996-2003

	Employment				Change/yr 96-03
	1988/89	1996	2002	2005	
Fishing					
Fish processing			100	100	
Aquaculture		2,149	2,167	2,100	0.1%
Total			2,267	2,200	
Inland fishing			na		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
cz Czech Republic	2,267	0.0%		

Major fishing ports	

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	6,384	100	75
Fisheries total	5,582	87	81
Fishing			

4. Average age (years), 2003

National	41
Fisheries	42

5. Fleet and employment characteristics, 2003

	Coastal	Off-shore	Total
Employment			
Number of vessels			
GT			
kW			

6. Value of landings (mln euro)

	1997	2002	Change
Nominal			
Real			

7a. Employment by region and gender, 2002

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,654	2,047	4,701	2,109	158	2,267
	56%	44%		93%	7%	
Total coastal regions cz Czech Republic						
Total non-coastal r.	2,654	2,047	4,701	2,109	158	2,267

7b. Employment by fisheries sub-sector, region and gender, 2002

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total				50	50	100	2,059	108	2,167
				50%	50%		95%	5%	
Total coastal regions cz Czech Republic									
Total non-coastal r.				50	50	100	2,059	108	2,167

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	7,164	5,373	6,384	5,658	4,563	5,582

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage				7,033	5,275	6,154	5,626	4,220	556

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	225	192	417	162	10	172
25-34	760	491	1,251	484	26	510
35-44	621	527	1,148	617	52	669
45-54	666	630	1,296	574	57	631
55-64	347	189	535	250	12	263
65+	35	19	54	23	1	23
Total	2,654	2,047	4,701	2,109	158	2,267

10. Characteristics of employment in marine fishing

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons						

Czech Republic

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	
Fish processing	MoA and Professional Organization, gender assumed F/M=50/50
Aquaculture	NSO total and gender distribution, PO gender at F/M=5/95 1)
Inland fishing	
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	NSO 2)
Fishing	
Fish processing	NSO, gender incomes assumed equal to relation for national average F/M=75/100
Aquaculture	As fish processing
3. Age distribution	
National	Eurostat
Total fisheries	Estimation based on NSO, which provides data for aquaculture for the year 2000
4. Further characteristics	
Coastal / off shore	
Owners / deckhands	
Full time / part time	
5. Historical data	
Employment	MoA
Value of landings	

1) Rybarske sdruzeni Ceske republiky.

4. DENMARK

1. Trends in the fisheries sector, 1988-2003

	Employment				Change/yr 98-03
	1988	1998	2003	2005	
Fishing	7,300	4,600	4,258	4,100	-1.5%
Fish processing	13,700	8,600	8,948	9,200	0.8%
Aquaculture	1,400	800	854	890	1.3%
Total	22,400	14,000	14,060	14,190	0.1%
Inland fishing			4		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
dk1 Denmark	14,060	0.5%	4,258	0.2%

Major fishing ports	25% vessels	65% kW	80% GT
dk1 Denmark	Strandby, Nexø, Skagen, Hvide Sande, Hanstholm, Thyborøn, Hirtshals		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	40,618	100	79
Fisheries total	41,596	102	81
Fishing	46,500	114	

4. Average age (years), 2003

National	41
Fisheries	41

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	1,262	2,996	4,258
Number of vessels	2,531	877	3,408
GT	9,801	87,759	97,560
kW	89,225	264,700	353,925

6. Value of landings (mln euro)

	1997	2002	Change/year
Nominal	469	371	-4.7%
Real	469	326	-7.3%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	1,457	1,250	2,707	9,294	4,766	14,060
	54%	46%		66%	34%	
Total coastal regions	1,457	1,250	2,707	9,294	4,766	14,060
<i>dk</i> Denmark	1,457	1,250	2,707	9,294	4,766	14,060
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	4,145	113	4,258	4,485	4,463	8,948	664	190	854
	97%	3%		50%	50%		78%	22%	
Total coastal regions	4,145	113	4,258	4,485	4,463	8,948	664	190	854
<i>dk</i> Denmark	4,145	113	4,258	4,485	4,463	8,948	664	190	854
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	44,939	35,582	40,618	44,465	36,001	41,596

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	46,500	46,500	46,500	43,438	35,904	39,680	38,694	32,040	37,214

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	180	166	345	1,158	594	1,751
25-34	330	274	603	1,937	993	2,930
35-44	372	327	699	2,370	1,215	3,585
45-54	317	293	611	2,217	1,137	3,354
55-64	231	177	408	1,419	728	2,146
65+	28	14	42	194	100	294
Total	1,457	1,250	2,707	9,294	4,766	14,060

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	1,262	2,996	2,143	2,115	3,788	470

Denmark

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	NSO
Fish processing	NSO
Aquaculture	NSO
Inland fishing	MoA, some 20-30 persons are registered but below threshold value for commercial activities of Eur 6,600 per year.
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER, gender assumed F=M
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimation based on NSO, which provides other age brackets
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners = number of off-shore vessels and number of men working on coastal fleet; deckhands = total – owners
Full time / part time	NSO
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

NSO = Danmarks Statistik

5. ESTONIA

1. Trends in the fisheries sector, 1996-2002

	Employment				Change/yr 96-02
	1991	1996	2002	2005	
Fishing		6,070	2,500	2,500	-14.8%
Fish processing	9,290	6,200	4,100	3,600	-6.9%
Aquaculture			100	100	
Total		12,270	6,700	6,200	-10.1%
Inland fishing			700		

2. Fisheries dependence, 2002

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
ee Estonia	6,700	1.1%	2,500	0.4%

Major fishing ports	39% vessels	80% kW	92% GT
ee Estonia	Kihnu, Liu, Lindi, Dirhami, Haapsalu, Pärnu, Narva-Jõesuu, Lehtma, Nasva, Tallinn (Tallinn alone: 5%, 46%, 53%)		

3. Earning levels (gross annual income, euro), 2002

	Average	Index	F/M-ratio
National average	4,934	100	73
Fisheries total	4,191	85	90
Fishing	3,293	67	

4. Average age (years), 2002

National	42
Fisheries	42

5. Fleet and employment characteristics, 2002 (fleet 2005)

	Coastal	Off-shore	Total
Employment	1,095	1,405	2,500
Number of vessels	843	201	1,044
GT	1,656	23,298	24,954
kW	12,525	50,293	62,818

6. Value of landings (mln euro), 1997-2002

	1997	2002	Change/year
Nominal	41	18	-16.5%
Real	41	14	-21.5%

7a. Employment by region and gender, 2002

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	303	292	594	5,052	1,648	6,700
	51%	49%		75%	25%	
Total coastal regions <i>ee</i> Estonia	303	292	594	5,052	1,648	6,700
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2002

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	2,450	50	2,500	2,542	1,558	4,100	60	40	100
	98%	2%		62%	38%		60%	40%	
Total coastal regions <i>ee</i> Estonia	2,450	50	2,500	2,542	1,558	4,100	60	40	100
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage (annual)	5,634	4,120	4,934	4,292	3,880	4,191

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage (annual)	3,293	3,293	3,293	5,255	3,918	4,747	4,314	3,146	3,847

9. National and fisheries employment by gender and age category, 2002

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	36	23	59	332	113	445
25-34	77	62	139	947	319	1,266
35-44	77	77	154	1,704	492	2,195
45-54	65	79	143	1,415	505	1,920
55-64	38	40	78	582	193	774
65+	10	11	21	73	27	99
Total	303	292	594	5,052	1,648	6,700

10. Characteristics of employment in marine fishing, 2002

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	1,095	1,405	1,435	1,065	2,500	0

Estonia

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA; Gender division assumed F/M=2/98
Fish processing	MoA and NSO; Gender division M/F=38/62 (from NSO)
Aquaculture	Estonian Aquaculture Association; Gender division assumed F/M=40/60
Inland fishing	Univ. of Tartu
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	
Fish processing	MoA and NSO
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER (Baltic fleet only)
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Age distribution of 2400 Estonians working in fishing and aquaculture, extrapolated to the total of 3600
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners: Estonian Fishermen Ass.; deckhands = total – owners
Full time / part time	MoA
6. Historical data	
Employment	FAO Fishery Country Profile (1996)
Value of landings	AER (Baltic Sea, 13.5 mln euro) and estimation of distant water fleet (11 vessels, 1.2 mln euro/vessel)

7. FINLAND

1. Trends in the fisheries sector, 1997-2003

	Employment				Change/yr 97-03
	1991	1997	2003	2005	
Fishing		1,005	900	890	-1.8%
Fish processing		1,028	1,339	1,330	4.4%
Aquaculture		624	501	450	-3.7%
Total		2,657	2,740	2,670	0.5%
Inland fishing			800		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
<i>fi13</i> Itä-Suomi	306	0.1%	74	0.0%
<i>fi18</i> Etelä-Suomi	576	0.0%	164	0.0%
<i>fi19</i> Länsi-Suomi	1,193	0.2%	467	0.1%
<i>fi1a</i> Pohjois-Suomi	473	0.2%	150	0.1%
<i>fi20</i> Åland	192	1.4%	45	0.3%

Major fishing ports	74% vessels	72% kW	69% GT
<i>fi18</i> Etelä-Suomi	Turku		
<i>fi19</i> Länsi-Suomi	Vaasa, Usimaa		

3. Earning levels (gross annual income, euro), 2002

	Average	Index	F/M-ratio
National average	18,307	100	80
Fisheries total	19,444	106	81
Fishing	16,510	90	93

4. Average age (years), 2002

National	na
Fisheries	42

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	408	492	900
Number of vessels	3,171	173	3,344
GT	7,768	9,861	17,630
kW	127,642	48,118	175,759

6. Value of landings (mln euro), 1998-2003

	1998	2003	Change/year
Nominal	32	20	-9.7%
Real	32	18	-11.8%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	1,227	1,138	2,365	1,907	833	2,740
	52%	48%		70%	30%	
Total coastal regions	1,228	1,138	2,365	1,907	833	2,740
<i>fi13</i> Itä-Suomi	141	125	265	189	117	306
<i>fi18</i> Etelä-Suomi	634	615	1,249	373	203	576
<i>fi19</i> Länsi-Suomi	306	270	576	861	332	1,193
<i>fi1a</i> Pohjois-Suomi	140	122	262	332	141	473
<i>fi20</i> Åland	7	7	14	152	40	192
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	831	69	900	697	642	1339	379	122	501
	92%	8%		52%	48%		76%	24%	
Total coastal regions	831	69	900	697	642	1339	379	122	501
<i>fi13</i> Itä-Suomi	66	8	74	59	96	155	64	13	77
<i>fi18</i> Etelä-Suomi	146	18	164	194	178	372	33	7	40
<i>fi19</i> Länsi-Suomi	437	30	467	292	261	553	132	41	173
<i>fi1a</i> Pohjois-Suomi	142	8	150	76	80	156	114	53	167
<i>fi20</i> Åland	40	5	45	76	27	103	36	8	44
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2002

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	20,262	16,199	18,307	20,605	16,785	19,444

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2002

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	16,598	15,445	16,510	22,726	16,160	19,576	25,492	20,839	24,361

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24				228	93	322
25-34			497	323	142	464
35-44			627	460	227	686
45-54			650	567	255	822
55-64				324	117	441
65+				5	0	5
Total	1,227	1,138	2,365	1,907	833	2,740

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	408	492	584	316	545	355

Finland

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	MoA, RKTL, of the indicated number about 355 obtained less than 30% of their income from fishing, excl. approx. 1500 non-commercial fishermen
Fish processing	MoA, RKTL
Aquaculture	MoA, RKTL
Inland fishing	RKTL, of the indicated total 300 persons achieve more than 30% of their income from fishing.
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	MoA, RKTL
Fish processing	MoA, RKTL
Aquaculture	MoA, RKTL
2. Earning levels	
National employment	
Fishing	RKTL, 2002
Fish processing	RKTL, 2002
Aquaculture	RKTL, 2002
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on information from NSO
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	Estimate based on EUFR (number of off-shore vessels + number of coastal fishermen)
Full time / part time	Only full-time fishermen, acc. to Finnish definition are included.
5. Historical data	
Employment	AER, 1999 studies
Value of landings	AER

RKTL = Finnish Game and Fisheries Research Institute

Finnish registration of commercial fishermen uses two threshold values:

Distinction between commercial and non-commercial fishermen based on generating more or less than 30% of the income from fishing;

Full-time and part-time commercial fishing, based on the turn-over of the company being more or less than 9,100 Euro/year.

8. FRANCE

1. Trends in the fisheries sector, 1990-2003

	Employment				Change/yr 97-03
	1990	1997	2003	2005	
Fishing	25,720	19,395	21,436	21,500	
Fish processing	16,100	11,258	21,676	21,700	
Aquaculture	13,900	10,761	21,600	21,600	
Total	55,720	41,414	64,712	64,800	
Inland fishing			667		

Note: Trends are not calculated due to differences in applied definitions.

2. Fisheries dependence, 2002

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
fr22 Picardie	238	0.0%	na	na
fr23 Haute-Normandie	2,437	0.3%	882	0.1%
fr25 Basse-Normandie	6,063	1.1%	1946	0.3%
fr30 Nord - Pas-de-Calais	5,452	0.4%	1553	0.1%
fr51 Pays de la Loire	5,187	0.3%	1861	0.1%
fr52 Bretagne	18,502	1.5%	6271	0.5%
fr53 Poitou-Charentes	9,532	1.3%	950	0.1%
fr61 Aquitaine	4,625	0.4%	1343	0.1%
fr81 Languedoc-Roussillon	4,355	0.5%	1773	0.2%
fr82 Prov.-Alpes-Côte d'Azur	2,082	0.1%	1112	0.1%
fr83 Corse	430	0.7%	292	0.5%
fr91 Guadeloupe	1,183	1.0%	1131	1.0%
fr92 Martinique	1,239	1.0%	1089	0.9%
fr93 Guyane	676	1.6%	614	1.5%
fr94 Reunion	749	0.4%	619	0.3%

10 Major fishing ports	50% vessels	64% kW	74% GT
fr25 Basse-Normandie	Cherbourg, Caen		
fr52 Bretagne	Guilvinec, Concarneau, Lorient, Saint Brieuc		
fr53 Poitou-Charentes	(La Rochelle)		
fr81 Languedoc-Roussillon	Sete		
Other regions	Boulogne, S. Lazaire, Les Sables d'Olonne		

3. Earning levels (gross annual income, euro), 2003 (excl. Drom)

	Average	Index	F/M-ratio
National average	28,469	100	81
Fisheries total	27,965	98	75
Fishing	33,800	119	

4. Average age (years), 2003

National	na
Fisheries	41

5. Fleet and employment characteristics, 2002

	Coastal	Off-shore	Total
Employment	9,093	12,343	21,436
Number of vessels	6,032	1,840	7,872
GT	19,531	195,877	215,408
kW	458,875	613,885	1,072,760

6. Value of landings (mln euro), 1996-2002 (excl. Drom)

	1996	2002	Change/year
Nominal	875	1,078	3.5%
Real	875	994	2.1%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	13,349	11,235	24,584	45,256	19,456	64,712
	54%	46%		70%	30%	
Total coastal regions	6,128	5,082	11,209	43,893	18,857	62,750
<i>fr22</i> Picardie	457	348	805	163	75	238
<i>fr23</i> Haute-Normandie	396	328	724	1,598	839	2,437
<i>fr25</i> Basse-Normandie	309	258	567	4,517	1,546	6,063
<i>fr30</i> Nord - Pas-de-Calais	873	648	1,522	4,108	1,344	5,452
<i>fr51</i> Pays de la Loire	898	731	1,630	3,606	1,581	5,187
<i>fr52</i> Bretagne	668	580	1,247	12,465	6,037	18,502
<i>fr53</i> Poitou-Charentes	398	316	714	5,078	4,454	9,532
<i>fr61</i> Aquitaine	579	511	1,090	3,176	1,449	4,625
<i>fr81</i> Languedoc-Roussillon	434	374	808	3,369	986	4,355
<i>fr82</i> Provence-Alpes-Côte d'Azur	826	757	1,583	1,724	358	2,082
<i>fr83</i> Corse	38	21	59	408	22	430
<i>fr91</i> Guadeloupe	61	54	115	1,150	33	1,183
<i>fr92</i> Martinique	63	60	123	1,154	85	1,239
<i>fr93</i> Guyane	24	17	41	661	15	676
<i>fr94</i> Reunion	104	78	182	716	33	749
Total non-coastal r.	7,222	6,153	13,375	1,363	599	1,962

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	21,240	196	21,436	11,488	10,188	21,676	12,528	9,072	21,600
	99%	1%		53%	47%		58%	42%	
Total coastal regions	21,240	196	21,436	10,579	9,608	20,187	12,074	9,053	21,127
<i>fr22</i> Picardie				37	37	74	126	38	164
<i>fr23</i> Haute-Normandie	882	0	882	638	826	1,464	78	13	91
<i>fr25</i> Basse-Normandie	1,918	28	1,946	852	601	1,453	1,747	917	2,664
<i>fr30</i> Nord - Pas-de-Calais	1,545	8	1,553	2,427	1,293	3,720	136	43	179
<i>fr51</i> Pays de la Loire	1,855	6	1,861	780	856	1,636	971	719	1,690
<i>fr52</i> Bretagne	6,207	64	6,271	3,333	4,038	7,371	2,925	1,935	4,860
<i>fr53</i> Poitou-Charentes	945	5	950	364	339	703	3,769	4,110	7,879
<i>fr61</i> Aquitaine	1,331	12	1,343	922	902	1,824	923	535	1,458
<i>fr81</i> Languedoc-Roussillon	1,756	17	1,773	566	340	906	1,047	629	1,676
<i>fr82</i> Provence-Alpes-Côte d'Azur	1,084	28	1,112	439	272	711	201	58	259
<i>fr83</i> Corse	292	0	292	29	12	41	87	10	97
<i>fr91</i> Guadeloupe	1,119	12	1,131	13	9	22	18	12	30
<i>fr92</i> Martinique	1,073	16	1,089	57	53	110	24	16	40
<i>fr93</i> Guyane	614	0	614	40	10	50	7	5	12
<i>fr94</i> Reunion	619	0	619	82	20	102	15	13	28
Total non-coastal r.				909	580	1,489	454	19	473

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	31,223	25,197	28,469	30,234	22,685	27,965

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	33,800	33,800	33,800	31,055	24,838	28,133	23,436	20,028	22,005

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24				4,879	2,141	7,021
25-34				10,199	4,090	14,289
35-44				13,311	4,882	18,193
45-54				10,152	4,665	14,818
55-64				5,995	3,482	9,478
65+				719	195	914
Total				45,256	19,456	64,712

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	9,093	12,343	6,782	14,654	11,930	9,506

France

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Estimates by Eurostat, 2003,
Fishing	MoA, 2003, incl. gender
Fish processing	MoA, 2003, fish processing only employed in 2002 about 15,270 persons (Eurostat)
Aquaculture	MoA, 2003
Inland fishing	MoA, 2004
1b. Coastal NUTS 2	
National employment	Estimates by Eurostat, 2003
Fishing	MoA, 2003 Notes: a/ Fr22 Picardie: fishing is included in Fr30 Nord-Pas-de-Calais; b/ Division between Male and Female is estimated for regions Fr23, Fr30, Fr83 and Fr94 on the basis of regional total and total number of Females and Males in France
Fish processing	MoA, 2003
Aquaculture	MoA, 2003 No recent data is available for DROM. Employment in aquaculture was assumed at the level indicated by the 1999 studies. The gender division is assumed to approach the French national average.
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Estimates by Eurostat
Total fisheries	Estimate on the basis of data from Min. of Agriculture regarding fishing and assumptions regarding processing and aquaculture.
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners: MoA, 2003; Deckhands is the difference between total employment minus number of owners.
Full time / part time	Fishermen register; Full time = fishermen working more than 9 months / year on board, Part time = rest;
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

9. GERMANY

1. Trends in the fisheries sector, 1990-2004

	Employment				Change/yr 96-04
	1990	1996	2004	2005	
Fishing	3,600	2,932	1,972	1,874	-5.0%
Fish processing	13,200	11,282	11,404	11,404	0.1%
Aquaculture		2,865	3,033	3,055	0.7%
Total		17,079	16,409	16,333	-0.6%
Inland fishing			400		

2. Fisheries dependence, 2004

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
de50 Bremen	3,375	1.3%	58	0.0%
de60 Hamburg	769	0.1%	21	0.0%
de80 Mecklenburg-Vorpom.	1,854	0.3%	459	0.1%
de93-4 Lüneb.-W. Ems	3,000	0.2%	661	0.0%
def0 Schleswig-Holstein	2,872	0.2%	773	0.1%

Major fishing ports	13% vessles	54% kW	69% GT
de50 Bremen	Bremerhaven		
de80 Mecklenburg-Vorpom.	Rostock, Sassnitz		
de93-4 Lüneb.-W. Ems	Cuxhaven, Emden, Greetsiel		
def0 Schleswig-Holstein	Friedrichskoog, Buesum		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	33,563	100	74
Fisheries total	31,002	92	85
Fishing	19,100	57	

4. Average age (years), 2003

National	41
Fisheries	43

5. Fleet and employment characteristics, 2004, (fleet 2005)

	Coastal	Off-shore	Total
Employment	352	1,620	1,972
Number of vessels	1,745	415	2,160
GT	3,949	62,571	66,520
kW	33,506	129,227	162,733

6. Value of landings (mln euro), 1997-2003

	1997	2003	Change/year
Nominal	170	182	1.1%
Real	170	170	0.0%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	19,781 55%	16,146 45%	35,927	9,550 58%	6,858 42%	16,409
Total coastal regions	2,614	2,159	4,773	6,452	5,417	11,870
de50 Bremen	145	125	270	1,550	1,824	3,375
de60 Hamburg	422	362	783	357	411	769
de80 Mecklenburg-Vorpommern	384	332	717	1,091	763	1,854
de93-4 Lüneb.-W. Ems	988	778	1,766	1,722	1,278	3,000
def0 Schleswig-Holstein	676	562	1,238	1,732	1,140	2,872
Total non-coastal r.	17,166	13,987	31,154	3,098	1,441	4,539

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	1,962 99%	10 1%	1,972	5,132 45%	6,272 55%	11,404	2,457 81%	576 19%	3,033
Total coastal regions	1,962	10	1,972	4,408	5,388	9,797	82	19	101
de50 Bremen	58	0	58	1,492	1,824	3,317	0	0	0
de60 Hamburg	21	0	21	336	411	748	0	0	0
de80 Mecklenburg-Vorpommern	457	2	459	620	757	1,377	15	4	19
de93-4 Lüneb.-W. Ems	658	3	661	1,038	1,269	2,307	26	6	32
def0 Schleswig-Holstein	769	4	773	922	1,126	2,048	41	10	51
Total non-coastal r.				723	884	1,607	2,375	557	2,932

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	38,096	28,010	33,563	33,114	28,062	31,002

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	19,100	19,100	19,100	39,581	28,610	33,547	30,796	22,252	29,173

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	2,053	1,939	3,993	902	754	1,656
25-34	4,171	3,446	7,617	1,858	1,439	3,297
35-44	6,010	4,863	10,873	2,342	1,714	4,057
45-54	4,775	4,082	8,856	2,310	1,646	3,957
55-64	2,521	1,664	4,185	1,716	1,234	2,950
65+	251	152	404	421	70	491
Total	19,781	16,146	35,927	9,550	6,858	16,409

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	352	1,620	1,415	557	1,795	177

Germany

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	Seeberufsgeonssenschaft, 2004
Fish processing	Bundesverband der Deutschen Fischindustrie und Fischgrosshandels, 2005. Processing = 9.000, wholesale = 2.400; Gender distribution is base don 1999 study M/F=45/55
Aquaculture	MoA, Annual report on German fisheries, 2004; Gender distribution is assumed M/F=65/35
Inland fishing	FAL
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	Regional distribution is based on the distribution of the fleet in EUFR
Fish processing	Regional distribution is based on the 1999 study. National gender distribution is applied to all regions
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Fishing: Berufsgenossenschaft; estimation of gender and total sector is based on general age distribution model
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Seeberufsgeonssenschaft, 2004.
Full time / part time	50% of coastal fishermen is assumed to work part time.
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

10. GREECE

1. Trends in the fisheries sector, 1990-2003

	Employment				Change/yr 97-03
	1990	1997	2003	2005	
Fishing	38,310	41,125	30,196	27,167	-5.1%
Fish processing	800	2,409	3,360	3,743	5.5%
Aquaculture	1,200	3,157	4,145	4,530	4.5%
Total	40,310	46,691	37,701	35,440	-3.6%
Inland fishing			919		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
<i>gr11</i> Anatoliki Makedonia, Thral	2,875	1.4%	1,815	0.9%
<i>gr12</i> Kentriki Makedonia	5,149	0.8%	3,463	0.5%
<i>gr14</i> Thessalia	1,605	0.6%	1,313	0.5%
<i>gr21</i> Ipeiros	1,234	1.1%	760	0.7%
<i>gr22</i> Ionia Nisia	2,493	3.4%	2,115	2.8%
<i>gr23</i> Dytiki Ellada	1,967	0.8%	1,504	0.6%
<i>gr24</i> Sterea Ellada	4,612	2.3%	3,055	1.5%
<i>gr25</i> Peloponnisos	3,154	1.3%	2,862	1.2%
<i>gr30</i> Attiki	4,746	0.3%	4,176	0.3%
<i>gr41</i> Voreio Aigaio	4,346	6.6%	3,989	6.1%
<i>gr42</i> Notio Aigaio	3,733	3.3%	3,383	3.0%
<i>gr43</i> Kriti	1,788	0.8%	1,761	0.7%

10 Major fishing ports	27% vessels	45% kW	55% GT
<i>gr22</i> Ionia Nisia	Kerkura		
<i>gr41</i> Voreio Aigaio	Mutilinh		
<i>gr42</i> Notio Aigaio	Kalumnos		
Other regions	Kabala, Ierissos, Calkida, Qessalonikh, Patra, Bolos, Peiraias		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average			
Fisheries total	12,153		97
Fishing	10,880		

4. Average age (years), 2003

National	42
Fisheries	46

5. Fleet and employment characteristics, 2003

	Coastal	Off-shore	Total
Employment	22,212	7,984	30,196
Number of vessels	17,284	1,322	18,606
GT (1000)	33,482	61,492	94,974
kW (1000)	324,020	225,674	549,694

6. Value of landings (mln euro), 1997-2002

	1997	2002	Change/year
Nominal	310	271	-2.7%
Real	310	222	-6.7%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,497	1,546	4,042	33,794	3,906	37,701
	62%	38%		90%	10%	
Total coastal regions	2,437	1,514	3,951	33,794	3,906	37,701
<i>gr11</i> Anatoliki Makedonia	121	86	207	2,276	599	2,875
<i>gr12</i> Kentriki Makedonia	407	255	662	4,346	804	5,149
<i>gr14</i> Thessalia	168	96	263	1,386	219	1,605
<i>gr21</i> Ipeiros	73	43	116	1,082	152	1,234
<i>gr22</i> Ionia Nisia	45	29	74	2,328	165	2,493
<i>gr23</i> Dytiki Ellada	155	85	240	1,749	218	1,967
<i>gr24</i> Sterea Ellada	131	71	202	4,174	438	4,612
<i>gr25</i> Peloponnisos	146	93	239	2,953	201	3,154
<i>gr30</i> Attiki	933	599	1,532	4,282	464	4,746
<i>gr41</i> Voreio Aigaio	44	21	65	4,048	298	4,346
<i>gr42</i> Notio Aigaio	71	41	112	3,495	238	3,733
<i>gr43</i> Kriti	143	95	238	1,677	111	1,788
Total non-coastal r.	60	32	92			

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	28,384	1,812	30,196	1,680	1,680	3,360	3,730	415	4,145
	94%	6%		50%	50%		90%	10%	
Total coastal regions	28,384	1,812	30,196	1,680	1,680	3,360	3,730	415	4,145
<i>gr11</i> Anatoliki Makedonia	1,706	109	1,815	480	480	960	90	10	100
<i>gr12</i> Kentriki Makedonia	3,255	208	3,463	534	534	1,068	556	62	618
<i>gr14</i> Thessalia	1,234	79	1,313	139	139	278	13	1	14
<i>gr21</i> Ipeiros	714	46	760	74	74	148	293	33	326
<i>gr22</i> Ionia Nisia	1,988	127	2,115	0	0	0	340	38	378
<i>gr23</i> Dytiki Ellada	1,414	90	1,504	102	102	204	233	26	259
<i>gr24</i> Sterea Ellada	2,872	183	3,055	123	123	247	1,179	131	1,310
<i>gr25</i> Peloponnisos	2,690	172	2,862	0	0	0	263	29	292
<i>gr30</i> Attiki	3,925	251	4,176	196	196	392	160	18	178
<i>gr41</i> Voreio Aigaio	3,750	239	3,989	29	29	57	270	30	300
<i>gr42</i> Notio Aigaio	3,180	203	3,383	0	0	0	315	35	350
<i>gr43</i> Kriti	1,655	106	1,761	3	3	7	18	2	20
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2002

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage				12,233	11,453	12,153

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2002

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	11,000	9,000	10,880	18,724	13,934	16,329	18,698	12,118	18,038

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	195	126	321	1,045	243	1,288
25-34	597	396	993	5,331	585	5,916
35-44	630	445	1,074	9,193	970	10,162
45-54	610	369	979	10,244	1,146	11,390
55-64	380	180	560	7,875	939	8,814
65+	85	31	116	108	23	131
Total	2,497	1,546	4,042	33,795	3,906	37,701

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	22,212	7,984	18,606	11,590	21,137	9,059

Greece

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	Min. of Agriculture; general gender division F/M=6/94
Fish processing	Min. of Agriculture, gender division F/M=50/50, see note 1
Aquaculture	Eurostat, gender division is assumed F/M=10/90
Inland fishing	Min. of Agriculture, 2003; OECD: 230
1b. Coastal NUTS 2	
National employment	Eurostat
Fishing	Min. of Agriculture; equal gender division is assumed for all areas
Fish processing	Regional distribution is based on 1999 studies; equal gender division is assumed for all areas
Aquaculture	Regional distribution is based on 1999 studies; equal gender division is assumed for all areas
2. Earning levels	
National employment	
Fishing	Professional organization
Fish processing	Eurostat, 2002, manufacturing
Aquaculture	Eurostat. 2002, Craft and related trades workers (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimated with indicative information on age distribution of male and females in fishing and general age distribution model.
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	EUFR, based on assumption one-man-one-boat, and supported by an indication from a professional organization.
Full time / part time	One of the professional organizations indicated that 70% of fishermen are full time and 30% are part time.
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

Note 1.

Data on employment in processing diverge significantly according to source: EC: 2,409 (excl wholesale trade); OECD (2003): 1,258 (covering 40% of firms, excl. wholesale trade).

11. HUNGARY

1. Trends in the fisheries sector, 2003

	Employment				Change/yr 96-04
	1991	1996	2004	2005	
Fishing					
Fish processing			150	150	
Aquaculture			1,530	1,530	
Total			1,680	1,680	
Inland fishing			3,390		

2. Fisheries dependence, 2002

NUTS-2	Total fisheries sector		Fishing	
	Employment 2002	Dependence rate	Employment 2002	Dependence rate
Hu Hungary	1,680	0.0%		

Major fishing ports	

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	5,739	100	83
Fisheries total	3,431	60	89
Fishing			

4. Average age (years)

National	40
Fisheries	40

5. Fleet and employment characteristics

	Coastal	Off-shore	Total
Employment			
Number of vessels			
GT			
kW			

6. Value of landings (mln euro)

	1997	2002	Change
Nominal			
Real			

7a. Employment by region and gender, 2004

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,127	1,795	3,922	1,510	170	1,680
	54%	46%		90%	10%	
Total coastal regions <i>hu</i> Hungary						
Total non-coastal r.	2,127	1,795	3,922	1,510	170	1,680

7b. Employment by fisheries sub-sector, region and gender, 2004

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total				90	60	150	1,420	110	1,530
				60%	40%		93%	7%	
Total coastal regions <i>hu</i> Hungary									
Total non-coastal r.				90	60	150	1,420	110	1,530

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	6,256	5,195	5,739	3,305	4,544	3,431

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage				5,611	4,742	5,263	3,159	4,436	3,251

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	200	158	357	142	15	157
25-34	654	457	1,111	465	43	508
35-44	514	471	985	365	45	409
45-54	550	561	1,111	390	53	443
55-64	195	139	334	139	13	152
65+	14	10	25	10	1	11
Total	2,127	1,795	3,922	1,510	170	1,680

10. Characteristics of employment in marine fishing

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons						

Hungary

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	
Fish processing	Estimation on the basis of production value; consistent with Eurostat: 143 persons
Aquaculture	MoA, data to Eurostat, 2004, 1240 full time and 290 part time
Inland fishing	MoA, data to Eurostat, 2004, 390 full time and 3000 part time
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	
Fish processing	Eurostat, 2003
Aquaculture	Eurostat, 2002
2. Earning levels	
National employment	Eurostat, 2003
Fishing	
Fish processing	NSO, 2003
Aquaculture	NSO, 2003
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on national age distribution.
4. Further characteristics	
Coastal / off shore	
Owners / deckhands	
Full time / part time	
5. Historical data	
Employment	
Value	

11. IRELAND

1. Trends in the fisheries sector, 1990-2005

	Employment				Change/yr 97-05
	1990	1997	2003	2005	
Fishing	4,920	5,494	5,147	5,037	-1.1%
Fish processing	2,600	3,262	3,439	3,500	0.9%
Aquaculture	1,500	2,198	1,998	1,936	-1.6%
Total	9,020	10,954	10,584	10,473	-0.6%
Inland fishing					

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
ie01 Border, Midlands and Western	5,188	1.1%	2,093	0.5%
ie02 Southern and Eastern	6,035	0.5%	3,054	0.2%

Major fishing ports	68% vessels	80% kW	86% GT
ie01 Border, Midlands and Western	Galway, Sligo		
ie02 Southern and Eastern	Dublin, Wexford, Skibbereen		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	35,411	100	83
Fisheries total	21,163	60	129
Fishing	9,500	27	

4. Average age (years), 2003

National	38
Fisheries	33

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	2,430	2,717	5,147
Number of vessels	961	464	1,425
GT	3,623	83,724	87,347
kW	26,616	188,709	215,325

6. Value of landings (mln euro)

	1998	2003	Change/year
Nominal	189	196	0.7%
Real	189	160	-3.3%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	1,040	757	1,797	8,931	1,653	10,584
	58%	42%		84%	16%	
Total coastal regions	1,040	757	1,797	8,931	1,653	10,584
<i>ie01</i> Border, Midlands and East	270	189	459	4,000	860	4,860
<i>ie02</i> Southern and Eastern	770	568	1,337	4,931	793	5,724
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	5,070	77	5,147	2,098	1,341	3,439	1,763	235	1,998
	99%	2%		61%	39%		88%	12%	
Total coastal regions	5,070	77	5,147	2,098	1,341	3,439	1,763	235	1,998
<i>ie01</i> Border, Midlands and East	2,062	31	2,093	1,061	679	1,740	877	150	1,027
<i>ie02</i> Southern and Eastern	3,008	46	3,054	1,036	663	1,699	886	85	971
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2002

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	38,094	31,725	35,411	20,261	26,036	21,163

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2002

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	9,500		9,500	34,972	27,822	32,184	33,701	21,272	32,240

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	171	147	318	2,595	492	3,087
25-34	282	232	514	2,847	834	3,682
35-44	239	175	414	1,871	185	2,056
45-54	203	135	338	809	79	888
55-64	119	60	179	607	63	670
65+	27	8	34	202	0	202
Total	1,040	757	1,797	8,931	1,653	10,584

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	2,430	2,717	1,425	3,722	3,932	1,215

Ireland

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA 2005, BIM, 2001, 1.5% women
Fish processing	MoA 2005, BIM, 2001, 39% women, employment in FTE is estimated by BIM at 2,792 FTE.
Aquaculture	MoA 2005, BIM, 2003
1b. Coastal NUTS 2	
National employment	Eurostat estimate
Fishing	Estimate on basis of EU fleet register and 2001 total employment
Fish processing	BIM 2001
Aquaculture	BIM 2003
2. Earning levels	
National employment	Eurostat, 2002
Fishing	AER
Fish processing	Eurostat, 2002, manufacturing
Aquaculture	Eurostat. 2002, Craft and related trades workers (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	BIM – 3 age classes for 3 sub-sectors, extrapolated into standard age classification.
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners: assumption one-man-one-boat.
Full time / part time	Full time = employment on off shore vessels and 50% employment on coastal vessels, part time = 50% employment on coastal vessels
5. Historical data	
Employment	1991 and 1999 studies
Value of landings	AER

13. ITALY

1. Trends in the fisheries sector, 1989-2003

	Employment				Change/yr 97-03
	1989	1997	2003	2005	
Fishing	52,700	43,547	38,157	36,495	-2.2%
Fish processing	8,000	6,447	6,708	6,797	0.7%
Aquaculture		6,523	3,092	2,370	-12.4%
Total		56,517	47,957	45,662	-2.7%
Inland fishing			na		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
<i>itc3</i> Liguria	1,432	0.2%	1,143	0.2%
<i>itd3</i> Veneto	3,763	0.2%	2,438	0.1%
<i>itd4</i> Friuli-Venezia Giulia	1,332	0.3%	902	0.2%
<i>itd5</i> Emilia-Romagna	2,872	0.2%	1,869	0.1%
<i>ite1</i> Toscana	1,523	0.1%	1,273	0.1%
<i>ite3</i> Marche	2,802	0.4%	2,361	0.4%
<i>ite4</i> Lazio	1,524	0.1%	1,310	0.1%
<i>itf1</i> Abruzzo	2,122	0.4%	1,738	0.4%
<i>itf2</i> Molise	98	0.1%		0.0%
<i>itf3</i> Campania	3,445	0.2%	2,747	0.2%
<i>itf4</i> Puglia	6,401	0.5%	5,535	0.4%
<i>itf5</i> Basilicata	30	0.0%		0.0%
<i>itf6</i> Calabria	3,507	0.6%	3,176	0.6%
<i>itg1</i> Sicilia	12,005	0.9%	10,487	0.7%
<i>itg2</i> Sardegna	3,764	0.7%	2,857	0.5%

10 Major fishing ports	16% vessels	28% kW	38% GT
<i>itg1</i> Sicilia	Mazarra del Vallo, Sciacca		
<i>itg2</i> Sardegna	Cagliari		
Other regions	Chioggia, Rimini, Ancona, S.B. del Tronto, Salerno, Manfredonia, Molfetta		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	25,506	100	81
Fisheries total	14,282	56	120
Fishing	12,200	48	

4. Average age (years), 2003

National	40
Fisheries	40

5. Fleet and employment characteristics, 2003

	Coastal	Off-shore	Total
Employment	12,692	25,465	38,157
Number of vessels	9,511	5,434	14,945
GT	16,527	198,960	215,487
kW	236,611	1,008,989	1,245,601

6. Value of landings (mln euro), 1997-2003

	1997	2003	Change/year
Nominal	1,632	1,466	-1.8%
Real	1,632	1,253	-4.4%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	13,690	8,365	22,054	40,610	7,347	47,957
	62%	38%		85%	15%	
Total coastal regions	9,720	5,624	15,344	39,887	6,733	46,620
<i>itc3</i> Liguria	369	253	622	1,216	216	1,432
<i>itd3</i> Veneto	1,212	792	2,004	2,995	768	3,763
<i>itd4</i> Friuli-Venezia Giu	294	209	503	1,108	224	1,332
<i>itd5</i> Emilia-Romagna	1,045	804	1,849	2,369	503	2,872
<i>ite1</i> Toscana	875	608	1,483	1,319	203	1,523
<i>ite3</i> Marche	362	262	624	2,396	406	2,802
<i>ite4</i> Lazio	1,273	784	2,057	1,328	197	1,524
<i>itf1</i> Abruzzo	299	179	478	1,812	310	2,122
<i>itf2</i> Molise	71	37	109	50	49	98
<i>itf3</i> Campania	1,168	486	1,655	2,926	519	3,445
<i>itf4</i> Puglia	877	371	1,247	5,649	753	6,401
<i>itf5</i> Basilicata	124	59	183	19	11	30
<i>itf6</i> Calabria	394	184	577	3,101	406	3,507
<i>itg1</i> Sicilia	997	409	1,406	10,398	1,607	12,005
<i>itg2</i> Sardegna	360	189	548	3,202	562	3,764
Total non-coastal r.	3,970	2,740	6,710	724	613	1,337

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	35,104	3,053	38,157	3,356	3,352	6,708	2,150	942	3,092
	92%	8%		50%	50%		70%	30%	
Total coastal regions	34,809	3,027	37,836	2,954	2,776	5,730	2,124	930	3,054
<i>itc3</i> Liguria	1,052	91	1,143	122	110	232	42	14	57
<i>itd3</i> Veneto	2,243	195	2,438	402	420	822	350	153	503
<i>itd4</i> Friuli-Venezia Giu	830	72	902	91	68	159	187	84	271
<i>itd5</i> Emilia-Romagna	1,719	150	1,869	133	124	257	517	230	746
<i>ite1</i> Toscana	1,171	102	1,273	114	87	201	34	14	49
<i>ite3</i> Marche	2,172	189	2,361	196	206	402	27	12	39
<i>ite4</i> Lazio	1,205	105	1,310	76	73	149	47	19	65
<i>itf1</i> Abruzzo	1,599	139	1,738	204	164	368	9	7	16
<i>itf2</i> Molise	0	0		43	46	89	7	3	9
<i>itf3</i> Campania	2,527	220	2,747	313	263	576	86	36	122
<i>itf4</i> Puglia	5,092	443	5,535	191	148	339	365	162	527
<i>itf5</i> Basilicata	0	0		4	2	6	15	9	24
<i>itf6</i> Calabria	2,922	254	3,176	165	146	311	14	6	20
<i>itg1</i> Sicilia	9,648	839	10,487	680	739	1,419	70	29	99
<i>itg2</i> Sardegna	2,628	229	2,857	220	180	400	353	153	507
Total non-coastal r.	295	26	321	402	576	978	26	12	38

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	27,493	22,253	25,506	13,853	16,656	14,282

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	12,200	12,200	12,200	26,091	20,598	23,346	21,734	17,065	20,312

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	958	657	1,615	4,830	863	5,693
25-34	3,615	2,478	6,092	9,747	1,763	11,510
35-44	4,095	2,543	6,638	10,965	1,984	12,948
45-54	3,365	1,950	5,314	10,165	1,861	12,025
55-64	1,406	645	2,051	4,092	729	4,821
65+	252	92	344	812	147	959
Total	13,690	8,365	22,054	40,610	7,347	47,957

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	12,692	25,465	14,945	23,212	32,103	6,054

Italy

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	IREPA
Fish processing	Min. of Agriculture, 2001, processing, excl. wholesale; ISTAT gives total employment in 2004 of 6,995 persons.
Aquaculture	ISTAT
Inland fishing	
1b. Coastal NUTS 2	
National employment	Eurostat
Fishing	IREPA, gender division based on ISTAT relation for national total: 92% men, 8% women. Note: IREPA reported in 1999 no women in fishing.
Fish processing	Min. of Agriculture, 2001, processing, excl. wholesale
Aquaculture	ISTAT national total extrapolated to regions on the basis of the 1999 study. Gender division in all regions assumed equal to national division.
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry (proxy)
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimate on basis of rough indication by ISTAT (only two age groups 15-55 and 55+) and general age distribution model.
4. Further characteristics	
Coastal / off shore	EUFR and assumed average crews per size of vessel
Owners / deckhands	Owners: approximately one-man-one-boat, Deckhands = total - owners
Full time / part time	Estimate based on assumptions that a/ full time job requires a minimum crew share of 9000 euro/year and b/ part time fishermen are involved approx. 40% in fishing. Results on basis of data from AER 2003 are extrapolated to total employment on board.
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER

14. LATVIA

1. Trends in the fisheries sector, 2005

	Employment				Change/yr 96-02
	1991	1996	2002	2005	
Fishing				3,670	
Fish processing				6,484	
Aquaculture				426	
Total				10,580	
Inland fishing				705	

2. Fisheries dependence, 2005

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
lv Latvia	10,580	1.1%	3,670	0.4%

Major fishing ports	Vessels 32% kW 86% GT 93%
lv Latvia	Liepaja, Ventspils

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	3,604	100	77
Fisheries total	3,722	107	69
Fishing	4,900	136	

4. Average age (years)

National	41
Fisheries	42

5. Fleet and employment characteristics, 2005

	Coastal	Off-shore	Total
Employment	2,230	1,440	3,670
Number of vessels	743	192	935
GT	1,281	40,331	41,611
kW	7,444	64,460	71,904

6. Value of landings (mln euro)

	1997	2002	Change
Nominal			
Real			

7a. Employment by region and gender, 2005

Region name, 2005	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	516	490	1,007	6,390	4,190	10,580
	51%	49%		60%	40%	
Total coastal regions /v Latvia	516	490	1,007	6,390	4,190	10,580
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2005

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	3,670	0	3,670	2,464	4,020	6,484	256	170	426
	100%	0%		38%	62%		60%	40%	
Total coastal regions /v Latvia	3,670	0	3,670	2,464	4,020	6,484	256	170	426
Total non-coastal r.	3,670	0	3,670	2,464	4,020	6,484	256	170	426

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	4,049	3,136	3,604	4,372	3,029	3,840

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	4,900		4,900	3,700	3,057	3,301	3,274	2,360	2,908

9. National and fisheries employment by gender and age category, 2005

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	66	44	110	419	287	707
25-34	135	113	248	1,198	811	2,009
35-44	134	138	272	2,155	1,250	3,405
45-54	110	123	234	1,790	1,284	3,074
55-64	59	60	118	735	490	1,226
65+	13	12	25	92	68	160
Total	516	490	1,007	6,390	4,190	10,580

10. Characteristics of employment in marine fishing, 2005

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	2,232	1,438	755	2,915	1,541	2,129

Latvia

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA, 2005
Fish processing	National total: Min. of Agriculture; gender division assumed M/F=38/68 as in Estonia
Aquaculture	MoA, 2005; gender division is assumed M/F=60/40
Inland fishing	MoA, 2005
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimation based on relative age distribution in Estonia
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	MoA: Off-shore fleet in hands of 12 owners; for coastal fleet it is assumed one-man-one-boat.
Full time / part time	MoA: 1,541 full time fishermen. Rest is assumed part time.
5. Historical data	
Employment	Not available
Value of landings	Not available

15. LITHUANIA

1. Trends in the fisheries sector, 1990-2005

	Employment				Change/yr 96-03
	1990-2	1996	2003	2005	
Fishing			2,550	2,590	
Fish processing	10,700	3,400	3,700	4,420	1.2%
Aquaculture	1,400	482	315	319	-6.1%
Total			6,565	7,329	

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
It Lithuania	6,565	0.5%	2,550	0.2%

Major fishing ports	1005 vessels	100% kW	100% GT
It Lithuania	Kleipeda, Neringa		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	4,077	100	81
Fisheries total	3,737	92	81
Fishing	4,000	98	

4. Average age (years), 2002

National	41
Fisheries	42

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	392	2,158	2,550
Number of vessels	196	87	283
GT	416	74,202	74,618
kW	4,438	71,856	76,294

6. Value of landings (mln euro), 2003

	1997	2003	Change/year
Nominal		104	
Real			

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	723	710	1,433	4,146	2,419	6,565
	50%	50%		63%	37%	
Total coastal regions	723	710	1,433	4,146	2,419	6,565
<i>lt</i> Lithuania	723	710	1,433	4,146	2,419	6,565
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	2,550	0	2,550	1,406	2,294	3,700	190	125	315
	100%	0%		38%	62%		60%	40%	
Total coastal regions	2,550	0	2,550	1,406	2,294	3,700	190	125	315
<i>lt</i> Lithuania	2,550	0	2,550	1,406	2,294	3,700	190	125	315
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	4,508	3,637	4,077	4,021	3,250	3,737

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			4,000	4,346	3,323	3,712	1908	1,908	1,908

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	68	47	115	272	166	438
25-34	190	184	375	777	468	1,246
35-44	212	218	430	1,398	722	2,120
45-54	155	176	331	1,161	741	1,903
55-64	84	74	158	477	283	760
65+	14	10	24	60	39	99
Total	723	710	1,433	4,146	2,419	6,565

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	392	2,158	283	2,267	2,354	196

Lithuania

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	LIAE, Gender: assumption F/M=0/100
Fish processing	MoA, Gender: estimate based on Estonia
Aquaculture	MoA, Gender: estimate based on Estonia
Inland fishing	MoA
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	MoA
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on Estonia
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	Estimate based on EUFR and assumption one-man-one-boat
Full time / part time	Assumption: Full time = off shore + 50% coastal fishermen; Part time = 50% coastal fishermen
5. Historical data	
Employment	LIAE
Value of landings	AER

LIAE = Lithuanian Institute of Agricultural Economics

16. LUXEMBOURG

No relevant data is available.

17. MALTA

1. Trends in the fisheries sector, 2004

	Employment				Change/yr 96-02
	1991	1996	2004	2005	
Fishing			1,303	1,303	
Fish processing			33	33	
Aquaculture			105	105	
Total			1,441	1441	
Inland fishing					

2. Fisheries dependence, 2004

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
mt Malta	1,441	1.0%	1,303	0.9%

Major fishing ports	48% vessels	56% kW	19% GT
mt Malta	Msida, Marsaxlokk, Mgarr		

3. Earning levels (gross annual income, euro)

	Average	Index	F/M-ratio
National average			
Fisheries total			
Fishing			

4. Average age (years)

National	38
Fisheries	47

5. Fleet and employment characteristics, 2004 (fleet 2005)

	Coastal	Off-shore	Total
Employment	870	433	1,303
Number of vessels	1,242	117	1,359
GT	2,704	16,020	18,724
kW	61,571	36,080	97,651

6. Value of landings (mln euro)

	1997	2004	Change
Nominal		11	
Real			

7a. Employment by region and gender, 2004

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	102	46	148	1,411	30	1,441
	69%	31%		98%	2%	
Total coastal regions	102	46	148	1,411	30	1,441
<i>mt Malta</i>	102	46	148	1,411	30	1,441
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2004

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	1,285	18	1,303	22	11	33	104	1	105
	99%	1%		67%	33%		99%	1%	
Total coastal regions	1,285	18	1,303	22	11	33	104	1	105
<i>mt Malta</i>	1,285	18	1,303	22	11	33	104	1	105
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro)

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage						

8b. Earning level: fisheries sub-sectors (gross annual income, euro)

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage									

9. National and fisheries employment by gender and age category, 2004

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	15	13	29	93	1	94
25-34	24	13	37	196	5	200
35-44	24	9	32	309	6	314
45-54	28	8	36	391	6	397
55-64	10	3	13	309	9	318
65+	1	1	1	114	4	118
Total	102	46	148	1,412	30	1,441

10. Characteristics of employment in marine fishing, 2004

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	870	433	986	317	455	848

Malta

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	NSO / Min. of Agriculture
Fish processing	NSO / Min. of Agriculture: no fish processing, but some employment must be linked to wholesale trade. EC indicates 33 persons, which is assumed to be related to the wholesale trade; gender assumed F/M=33/66
Aquaculture	NSO / Min. of Agriculture
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Derived from age distribution of full time workers in fishing and aquaculture, covering 38% of the total employment, recalculated from slightly different age classes.
4. Further characteristics	
Coastal / off shore	EUFR, estimate based on average crews per size of vessel
Owners / deckhands	EUFR, Owners: estimate based on number of off shore vessels plus number of coastal fishermen (assumption one-man-one-boat).
Full time / part time	NSO: Full time employment is the actual number of fisherman who are registered with the Employment & Training Corp. For National Insurance purposes, every individual person has to register when he is gainfully occupied. Part time fishermen are based on the number of registered boats by part-timers.
5. Historical data	
Employment	
Value of landings	FAO, Fishery Country Profile

18. NETHERLANDS

1. Trends in the fisheries sector, 1990-2003

	Employment				Change/yr 97-03
	1990	1997	2003	2005	
Fishing	3,166	2,686	2,547	2,502	-0.9%
Fish processing	7,000	6,052	6,382	6,495	0.9%
Aquaculture	400	312	120	85	-15.9%
Total	10,566	9,050	9,049	9,082	0.0%
Inland fishing			475		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
<i>nl11</i> Groningen	503	0.2%	172	0.1%
<i>nl12</i> Friesland	661	0.2%	144	0.0%
<i>nl23</i> Flevoland	2,337	1.2%	416	0.2%
<i>nl32</i> Noord-Holland	1,674	0.1%	647	0.0%
<i>nl33</i> Zuid-Holland	1,643	0.1%	743	0.0%
<i>nl34</i> Zeeland	1,228	0.7%	424	0.2%

Major fishing ports	61% vessels	82% GT	88% kW
<i>nl23</i> Flevoland	Urk		
<i>nl32</i> Noord-Holland	Wieringen, Den Helder, Texel		
<i>nl33</i> Zuid-Holland	Katwijk, Scheveningen, Goedereede		
<i>nl34</i> Zeeland	Yerseke, Bruinisse, Arnhemuiden		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	34,715	100	81
Fisheries total	36,100	104	78
Fishing	43,625	126	

4. Average age (years), 2003

National	39
Fisheries	41

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	0	2,547	2,547
Number of vessels	244	613	857
GT	501	181,993	182,494
kW	6,989	448,250	455,239

6. Value of landings (mln euro), 1997-2003

	1997	2003	Change/year
Nominal	356	394	1.7%
Real	356	332	-1.2%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	4,528	3,574	8,102	6,574	2,475	9,049
	56%	44%		73%	27%	
Total coastal regions	2,212	1,761	3,973	5,933	2,114	8,046
<i>nl11</i> Groningen	154	120	274	380	123	503
<i>nl12</i> Friesland	175	134	308	462	199	661
<i>nl23</i> Flevoland	104	84	188	1,596	741	2,337
<i>nl32</i> Noord-Holland	728	599	1,326	1,279	395	1,674
<i>nl33</i> Zuid-Holland	952	750	1,701	1,297	346	1,643
<i>nl34</i> Zeeland	100	76	176	918	310	1,228
Total non-coastal r.	2,326	1,822	4,148	641	361	1,002

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	2,545	2	2,547	3,912	2,470	6,382	118	2	120
	100%	0%		61%	39%		98%	2%	
Total coastal regions	2,545	2	2,547	3,346	2,112	5,458	42		42
<i>nl11</i> Groningen	172		172	196	123	319	12		12
<i>nl12</i> Friesland	143	1	144	313	198	511	6		6
<i>nl23</i> Flevoland	416		416	1,174	741	1,915	6		6
<i>nl32</i> Noord-Holland	647		647	626	395	1,021	6		6
<i>nl33</i> Zuid-Holland	743		743	548	346	894	6		6
<i>nl34</i> Zeeland	423	1	424	489	309	798	6		6
Total non-coastal r.				566	358	924	76	2	78

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	37,921	30,655	34,715	38,424	29,924	36,100

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			43,625	35,047	29,924	33,064	37,921	30,655	37,800

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	669	623	1,292	704	272	977
25-34	1,039	890	1,928	1,478	520	1,998
35-44	1,207	958	2,165	1,908	619	2,527
45-54	1,023	784	1,808	1,478	594	2,072
55-64	529	294	823	898	445	1,343
65+	61	25	86	107	25	132
Total	4,528	3,574	8,102	6,574	2,475	9,049

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	0	2,547	530	2,017	2,477	70

The Netherlands

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	LEI, 2003, incl. shellfish fishing
Fish processing	LEI, NSO, 2003
Aquaculture	LEI, NSO, 2003
Inland fishing	LEI, 2003
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	LEI, 2003
Fish processing	LEI, NSO, 2003
Aquaculture	LEI, NSO, 2003
2. Earning levels	
National employment	Eurostat, 2003
Fishing	LEI, 2003
Fish processing	Eurostat, 2003
Aquaculture	LEI, 2003
3. Age distribution	
National	Eurostat, 2003
Total fisheries	LEI, 2003
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	LEI 2003
Full time / part time	LEI. 2003
5. Historical data	
Employment	LEI
Value of landings	LEI

LEI = Agricultural Economics Research Institute

19. POLAND

1. Trends in the fisheries sector, 1995-2003

	Employment				Change/yr 95-03
	1991	1995	2003	2005	
Fishing		9,400	4,500	3,500	-9.2%
Fish processing		17,400	13,423	14,000	-3.2%
Aquaculture			2,000	2,000	
Total			19,923	19,500	
Inland fishing			2,000		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
pl42 Zachodnio Pomorskie	4,966	0.6%	1,980	0.3%
pl62 Warminsko-Mazurskie	443	0.1%	270	0.1%
pl63 Pomorskie	7,104	1.0%	2,250	0.3%

Major fishing ports	52% vessels	82% kW	93% GT
pl42 Zachodnio Pomorskie	Szczecin, Swinoujscie, Dziwnow		
pl62 Warminsko-Mazurskie	Darlowo, Kolobrzeg		
pl63 Pomorskie	Ustka, Jastarnia, Leba, Hel, Wladyslawowo, Gdynia		

3. Earning levels (2002/2003, gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	6,968	100	83
Fisheries total	5,156	74	106
Fishing	2,700	39	

4. Average age (years), 2003

National	40
Fisheries	39

5. Fleet and employment characteristics, 2003

	Coastal	Off-shore	Total
Employment	1,775	2,725	4,500
Number of vessels	811	475	1,286
GT	3,810	42,728	46,538
kW	33,191	117,923	151,114

6. Value of landings (mln euro), 2000-2003

	2000	2003	Change/year
Nominal	122	50	-29.5%
Real	122	35	-41.3%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	7,432	6,185	13,617	10,220	9,703	19,923
	55%	45%		51%	49%	
Total coastal regions	1,064	855	1,919	7,439	5,075	12,513
pl42 Zachodnio Pomorskie	428	347	775	3,154	1,812	4,966
pl62 Warmińsko-Mazurskie	256	204	460	327	116	443
pl63 Pomorskie	380	304	684	3,957	3,147	7,104
Total non-coastal r.	6,368	5,330	11,698	2,781	4,629	7,410

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	4,431	69	4,500	4,589	8,834	13,423	1,200	800	2,000
	98%	2%		34%	66%		60%	40%	
Total coastal regions	4,431	69	4,500	2,384	4,590	6,974	623	416	1,039
pl42 Zachodnio Pomorskie	1,960	20	1,980	962	1,637	2,599	232	155	387
pl62 Warmińsko-Mazurskie	243	27	270	71	80	151	13	9	22
pl63 Pomorskie	2,228	22	2,250	1,352	2,873	4,225	378	252	630
Total non-coastal r.	0	0	0	2,204	4,244	6,449	577	384	961

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	7,550	6,269	6,968	5,004	5,315	5,156

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			2,700	6,902	5,459	5,952	6,253	3,954	5,333

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	733	548	1,281	896	844	1,740
25-34	2,078	1,626	3,704	3,066	2,717	5,783
35-44	1,998	1,742	3,740	3,035	3,108	6,143
45-54	1,882	1,759	3,641	2,904	2,717	5,621
55-64	579	380	958	306	310	616
65+	161	132	293	13	7	20
Total	7,432	6,185	13,617	10,220	9,703	19,923

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	1,775	2,725	1,286	3,214	3,612	888

Poland

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA, National Strategic Plan states 3,900 fishermen
Fish processing	MoA, National Strategic Plan: 4,989 in retail and wholesale. It is assumed that about 1,000 persons work in wholesale.
Aquaculture	Min. of Agriculture, gender division is estimated on Estonia M/F=60/40
Inland fishing	MoA
1b. Coastal NUTS 2	
National employment	Eurostat
Fishing	MoA
Fish processing	MoA, number of employees per coastal region by gender, the non-coastal areas therefore represent rest of employment in processing and trade; gender distribution in non-coastal areas is assumed equal to the coastal areas.
Aquaculture	MoA, regional distribution is estimate on distribution of fish processing, gender division is estimated on Estonia M/F=60/40
Inland fishing	MoA
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimation on basis of data on fish processing (by gender), aquaculture (total) and assumed distribution by gender in fishing.
4. Further characteristics	
Coastal / off shore	EUFR, estimate based on average crews per size of vessel.
Owners / deckhands	Owners = based on assumption one-man-one-boat; deckhands = total - owners
Full time / part time	Assumptions: Full time = off shore + 50% coastal fishermen; Part time = 50% coastal fishermen
5. Historical data	
Employment	Sea Fisheries Institute (MIR) and assumption of 900 persons in wholesale trade and marketing. in 1985 25.100 persons worked in the fisheries sector: 12,300

	distant fleet, 5,000 Baltic fleet and 7,800 processing and trade.
Value of landings	AER

20. PORTUGAL

1. Trends in the fisheries sector, 1990-2003

	Employment				Change/yr 96-03
	1990	1996	2003	2005	
Fishing	40,600	32,178	20,457	21,000	-6.5%
Fish processing	12,200	6,475	6,300	6,251	-0.4%
Aquaculture	6,400	6,400	6,472	6,493	0.2%
Total	59,200	45,053	33,229	33,743	-4.3%
Inland fishing			na		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
pt11 Norte	7,892	0.4%	5,860	0.3%
pt16 Centro	5,479	0.4%	4,002	0.3%
pt17 Lisboa	2,835	0.2%	2,106	0.2%
pt18 Alentejo	1,692	0.5%	713	0.2%
pt15 Algarve	9,754	5.1%	3,585	1.9%
pt20 Açores	4,584	4.5%	3,487	3.4%
pt30 Madeira	992	0.9%	704	0.6%

Major fishing ports	36% vessels	55% kW	72% GT
pt11 Norte	Viana do Castelo, Povoia de Varzim, Leixoes, Vila de Conde		
pt15 Algarve	Portimao		
pt16 Centro	Aveiro, Peniche		
pt17 Lisboa	Lisboa, Sesimbra		
pt20 Açores	Ponta Delgada		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	13,418	100	79
Fisheries total	8,405	62	95
Fishing	7,100	53	

4. Average age (years), 2003

National	42
Fisheries	42

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	14,250	6,207	20,457
Number of vessels	9,379	953	10,332
GT	12,889	101,817	114,706
kW	135,714	263,478	399,192

6. Value of landings (mln euro), 1997-2003

	1997	2003	Change/year
Nominal	303	358	2.8%
Real	303	298	-0.3%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,787	2,331	5,118	24,790	8,439	33,229
	54%	46%		75%	25%	
Total coastal regions	2,787	2,331	5,118	24,790	8,439	33,229
<i>pt11</i> Norte	982	812	1,794	5,708	2,184	7,892
<i>pt16</i> Centro	688	602	1,290	3,918	1,561	5,479
<i>pt17</i> Lisboa	684	606	1,290	2,101	735	2,835
<i>pt18</i> Alentejo	196	143	339	909	784	1,692
<i>pt15</i> Algarve	110	81	191	8,082	1,673	9,754
<i>pt20</i> Açores	65	37	102	3,367	1,217	4,584
<i>pt30</i> Madeira	62	50	112	707	285	992
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	17,593	2,864	20,457	1,890	4,410	6,300	5,307	1,165	6,472
	86%	14%		30%	70%		82%	18%	
Total coastal regions	17,593	2,864	20,457	1,890	4,410	6,300	5,307	1,165	6,472
<i>pt11</i> Norte	5,040	820	5,860	576	1,343	1,919	93	20	113
<i>pt16</i> Centro	3,442	560	4,002	424	990	1,414	52	11	64
<i>pt17</i> Lisboa	1,811	295	2,106	178	415	593	112	25	136
<i>pt18</i> Alentejo	613	100	713	293	683	976	3	1	3
<i>pt15</i> Algarve	3,083	502	3,585	35	81	116	4,963	1,090	6,053
<i>pt20</i> Açores	2,999	488	3,487	307	716	1,022	61	13	74
<i>pt30</i> Madeira	605	99	704	78	182	259	24	5	29
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	14,855	11,700	13,418	8,405	7,999	8,302

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			7,100	13,394	8,828	10,198	10,953	7,073	10,255

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	297	232	529	2,209	856	3,065
25-34	706	634	1,340	5,266	1,777	7,043
35-44	689	595	1,284	7,005	2,229	9,235
45-54	578	477	1,055	6,516	2,114	8,630
55-64	329	255	584	3,224	1,336	4,559
65+	189	138	326	570	128	697
Total	2,787	2,331	5,118	24,790	8,439	33,229

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	14,250	6,207	10,332	10,125	13,332	7,125

Portugal

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	NSO, 2003
Fish processing	MoA, gender distribution based on indication by Min. of Employment (INOFOR study)
Aquaculture	MoA, gender distribution based on MoA estimate, see Note 1)
Inland fishing	
1b. Coastal NUTS 2	
National employment	Eurostat
Fishing	Estimate based on regional distribution of 1999 studies
Fish processing	Estimate based on regional distribution of 1999 studies
Aquaculture	Estimate based on regional distribution of 1999 studies 1)
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	NSO, total processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on NSO data for total fisheries and fishing
5. Further characteristics	
Coastal / off shore	Estimate of the basis of EUFR
Owners / deckhands	Estimate on basis of assumption one-man-one-boat.
Full time / part time	Estimate on basis of assumption that 50% of coastal fishermen work part time.
6. Historical data	
Employment	Regional studies 1991 and 1999, see Note 2)
Production value	AER

Note: Earlier studies omitted to include approx. 6,000 persons working in the Ria Formosa “Viveiros” in Algarve.

Other source give significantly different levels of employment: FAO country profile 1997: total employment 27.347; AER 1996 employment in fishing 28.458.

21. SLOVAKIA

1. Trends in the fisheries sector, 2003

	Employment				Change/yr 96-02
	1991	1995	2003	2005	
Fishing					
Fish processing			947	820	
Aquaculture			233	233	
Total			1,180	1,053	
Inland fishing			0		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
sk Slovak Republic	1,180	0.1%		

Major fishing ports	

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	4,989	100	72
Fisheries total	4,049	81	75
Fishing			

4. Average age (years), 2003

National	39
Fisheries	42

5. Fleet and employment characteristics

	Coastal	Off-shore	Total
Employment			
Number of vessels			
GT			
kW			

6. Value of landings (mln euro)

	1997	2002	Change
Nominal			
Real			

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	1,174	988	2,162	595	585	1,180
	54%	46%		50%	50%	
Total coastal regions <i>sk Slovak Republic</i>						
Total non-coastal r.	1,174	988	2,162	595	585	1,180

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total				408	539	947	187	46	233
				43%	57%		80%	20%	
Total coastal regions <i>sk Slovak Republic</i>									
Total non-coastal r.				408	539	947	187	46	233

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	5,716	4,125	4,989	4,625	3,463	4,049

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage				5,277	3,540	4,288	3,202	2,566	3,076

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	133	114	247	46	0	46
25-34	330	248	579	125	104	229
35-44	329	310	638	145	187	332
45-54	290	284	574	206	283	489
55-64	88	29	117	70	11	81
65+	5	3	7	2	0	2
Total	1,174	988	2,162	595	585	1,180

10. Characteristics of employment in marine fishing

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons						

Slovakia

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	
Fish processing	MoA, 2003, annual decline by 60-70 persons
Aquaculture	MoA / NSO, 2003, indicates 233 persons, excl. owners and family members (if not employees) and temporary workers. MoA, Slovak Operational programme states 713 persons, of whom 267 full-time, 353 on contract and 93 family workers. Gender F/M = 20/80, based on NSO.
Inland fishing	MoA
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	
Fish processing	MoA / NSO, gender difference based on Eurostat
Aquaculture	MoA / NSO data for cattle breeding, gender difference based on Eurostat
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on NSO, 2004
4. Further characteristics	
Coastal / off shore	
Owners / deckhands	
Full time / part time	
5. Historical data	
Employment	
Value of landings	

22. SLOVENIA

1. Trends in the fisheries sector

	Employment				Change/yr 96-03
	1991	1996	2003	2005	
Fishing		92	132	140	5.2%
Fish processing			237	220	
Aquaculture		129	254	250	0.3%
Total			623	610	
Inland fishing			0		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
si Slovenia	623	0.1%	132	0.0%

Major fishing ports	100% fleet
si Slovenia	Izola, Koper, Piran

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	12,395	100	94
Fisheries total	10,635	86	84
Fishing	10,622	86	85

4. Average age (years), 2003

National	40
Fisheries	45

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	52	80	132
Number of vessels	117	25	142
GT	227	620	847
kW	3,665	4,804	8,469

6. Value of landings (mln euro)

	2001	2003	Change
Nominal	3.0	3.2	3.2%
Real	3.0	3.0	0.0%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	490	407	897	518	105	623
	55%	45%		83%	17%	
Total coastal regions si Slovenia	490	407	897	518	105	623
Total non-coastal r.	490	407	897	518	105	623

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	125	7	132	196	41	237	197	57	254
	95%	5%		83%	17%		78%	22%	
Total coastal regions si Slovenia	125	7	132	196	41	237	197	57	254
Total non-coastal r.	125	7	132	196	41	237	197	57	254

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	12,757	11,964	12,395	10,930	9,178	10,635

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	10,707	9,110	10,622	11,296	9,285	10,948	10,707	9,110	10,349

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	49	34	83	17	4	21
25-34	132	114	245	84	21	105
35-44	129	126	255	157	42	199
45-54	135	110	245	194	33	227
55-64	35	17	51	54	4	58
65+	11	8	18	13	0	13
Total	490	407	897	518	105	623

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	52	80	92	40	81	51

Country: Slovenia

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MoA
Fish processing	MoA
Aquaculture	MoA
Inland fishing	MoA
1b. Coastal NUTS 2	
National employment	
Fishing	
Fish processing	
Aquaculture	
2. Earning levels	
National employment	Eurostat, 2003
Fishing	MoA
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	MoA
3. Age distribution	
National	Eurostat
Total fisheries	MoA, slightly adjusted for 42 persons whose age is unknown.
4. Further characteristics	
Coastal / off shore	Estimate based on EUFR
Owners / deckhands	Estimate based on 114 active vessels (MoA); 40 crew + 20 owners on board 20 vessels > 12 m; remaining fishermen are all owners of vessels < 12 m
Full time / part time	MoA
5. Historical data	
Employment	MoA
Value of landings	MoA

MoA used the following sources:

1. SRE (Statistical Register of Employment).
2. ZAP/M (Monthly Report on Earnings and Persons in Paid Employment in Enterprises, Companies and Organizations).
3. National accounts, fishing and aquaculture
4. Marine fishing - persons in employment, fishing vessels and gear (annual report)
5. Freshwater fishing (annual report)

23. SPAIN

1. Trends in the fisheries sector, 1990-2004

	Employment				Change/yr 97-04
	1990	1997	2004	2005	
Fishing	92,424	68,275	53,849	52,000	-3.4%
Fish processing	17,600	23,945	27,000	27,000	1.7%
Aquaculture	8,000	23,761	11,928	12,000	
Total	118,024	115,981	92,777	91,000	-0.8%
Inland fishing			0		

2. Fisheries dependence, 2004

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
es11 Galicia	45,487	4.1%	20,725	1.9%
es12 Asturias	2,459	0.6%	1,899	0.5%
es13 Cantabria	4,056	1.9%	1,579	0.7%
es21 Pais Vasco	5,150	0.6%	3,220	0.4%
es51 Cataluña	6,841	0.2%	5,261	0.2%
es52 Com. Valenciana	5,652	0.3%	4,203	0.2%
es53 Illes Balears	1,259	0.3%	1,116	0.3%
es61 Andalucía	13,091	0.5%	9,844	0.4%
es62 Murcia	3,159	0.7%	1,219	0.3%
es63 Ceuta	680	2.5%	680	2.5%
es64 Melilla	50	0.2%	50	0.2%
es70 Canarias	4,894	0.6%	4,053	0.5%

Major fishing ports	10% vessels	35% kW	55% GT
es11 Galicia	Vigo, La Coruna, Burela, Marin		
es61 Andalucía	Huelva		
es13 Cantabria	Cillero		
Other	Sta. Eugenia de Riveira, Bermeo, Las Palmas		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	21,091	100	76
Fisheries total	15,926	76	105
Fishing	14,600	69	

4. Average age (years), 2003

National	39
Fisheries	42

5. Fleet and employment characteristics, 2004 (fleet 2005)

	Coastal	Off-shore	Total
Employment	22,849	31,000	53,849
Number of vessels	9,774	3,731	13,505
GT	18,560	465,347	483,907
kW	166,690	961,920	1,128,609

6. Value of landings (mln euro), 1998-2001

	1998	2001	Change/year
Nominal	2061	1851	-3.6%
Real	2061	1701	-6.4%

7a. Employment by region and gender, 2004

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	10,284 62%	6,410 38%	16,695	67,010 72%	25,768 28%	92,778
Total coastal regions	7,082	4,441	11,523	67,010	25,768	92,778
<i>es11</i> Galicia	660	446	1,105	29,602	15,885	45,487
<i>es12</i> Asturias	235	149	384	2,036	423	2,459
<i>es13</i> Cantabria	135	80	215	2,199	1,856	4,056
<i>es21</i> Pais Vasco	541	365	906	3,707	1,443	5,150
<i>es51</i> Cataluña	1,692	1,170	2,862	5,657	1,184	6,841
<i>es52</i> Valencia	1,096	690	1,786	4,662	990	5,652
<i>es53</i> Illes Balears	227	159	387	1,151	108	1,259
<i>es61</i> Andalucía	1,688	898	2,585	10,828	2,263	13,091
<i>es62</i> Murcia	301	172	473	2,116	1,043	3,159
<i>es63</i> Ceuta	20	7	27	677	3	680
<i>es64</i> Melilla	15	8	23	50	0	50
<i>es70</i> Canarias	473	298	771	4,326	569	4,894
Total non-coastal r.	3,202	1,969	5,171			

7b. Employment by fisheries sub-sector, region and gender, 2004

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	53,580 100%	269 1%	53,849	6,750 25%	20,250 75%	27,000	6,680 56%	5,249 44%	11,929
Total coastal regions	53,580	269	53,849	6,750	20,250	27,000	6,680	5,249	11,929
<i>es11</i> Galicia	20,621	104	20,725	3,941	11,822	15,762	5,040	3,960	9,000
<i>es12</i> Asturias	1,890	9	1,899	135	404	539	12	9	21
<i>es13</i> Cantabria	1,571	8	1,579	612	1,836	2,448	16	13	29
<i>es21</i> Pais Vasco	3,204	16	3,220	466	1,398	1,864	37	29	66
<i>es51</i> Cataluña	5,235	26	5,261	373	1,119	1,492	49	39	88
<i>es52</i> Valencia	4,182	21	4,203	267	802	1,069	213	167	380
<i>es53</i> Illes Balears	1,110	6	1,116	32	96	127	9	7	15
<i>es61</i> Andalucía	9,795	49	9,844	633	1,899	2,531	401	315	715
<i>es62</i> Murcia	1,213	6	1,219	148	444	592	755	593	1,348
<i>es63</i> Ceuta	677	3	680	0	0	0			
<i>es64</i> Melilla	50	0	50	0	0	0			
<i>es70</i> Canarias	4,033	20	4,053	144	431	575	149	117	266
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2004

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	23,267	17,601	21,091	15,713	16,507	15,926

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2004

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			14,600	23,197	16,921	18,490	18238	13,739	16,258

9. National and fisheries employment by gender and age category, 2004

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	1,031	702	1,733	4,220	2,530	6,750
25-34	2,945	2,128	5,073	13,312	4,868	18,180
35-44	2,867	1,831	4,698	19,136	5,830	24,966
45-54	2,174	1,208	3,381	18,589	5,642	24,231
55-64	1,201	505	1,706	8,147	4,258	12,405
65+	67	37	104	544	234	778
Total	10,284	6,410	16,695	63,948	23,362	87,310

10. Characteristics of employment in marine fishing, 2004

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	22,849	31,000	13,505	40,344	53,311	538

Spain

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	MAPYA 2005, indicated percentage of women 0-1%. Data from ISM puts the number of active fishermen at approximately 41.000.
Fish processing	FIAB, Economic report 2004; Gender division assumed 55% male and 45% female. Average production value in fish processing is 111.000 euro/person, while in total food processing in Spain it is 172.000 euro/person. The indicated employment is probably an overestimate.
Aquaculture	Estimate based on production value 323 mln euro (from MAPYA) and assumption of average gross sales of 50,000 euro/fte. Assumed gender division 65-35%.
Inland fishing	MoA
1b. Coastal NUTS 2	
National employment	Eurostat
Fishing	MAPYA 2005, assumed number of women 0.5% in all regions.
Fish processing	Estimate based on total of 27.000 persons (FIAB) and relative regional distribution from the 1999 studies. Gender distribution assumes in all regions 55% male and 45% female.
Aquaculture	Estimate based on regional production value from MAPYA and assumption of average gross sales of 50,000 euro/fte. Assumed gender division 65-35%. Data for Galicia, see note 1.
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on ISM information on fishing and general model for other sectors.
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners = based on assumption one-man-one-boat; deck-hands = total - owners
Full time / part time	Estimate based on ISM 2004, 1% of employees extrapolated also on self-employed.
5. Historical data	
Employment	FAO, 1991 and 1999 studies
Value of production	AER

Data on employment in Galician aquaculture and mussel farming diverges significantly according to source:

Consello regulador de Mexillones de Galicia states: “O sector mexilloeiro, ... xera uns 11.500 postos de traballo directo (dos cales 8.500 son fixos)..”

IGE (Instito Gallego de Estatística), IGE. Macromagnitudes da pesca. Ano 2001-2002.presents tow figures: Marisqueo a pecuario: 5,693 and acuicultua marina: 4,264.

Total employment in Galician aquaculture has been assumed at 9,000 persons.

24. SWEDEN

1. Trends in the fisheries sector, 1998-2005

	Employment				Change/yr 98-03
	1991	1998	2003	2005	
Fishing		2,648	2,360	1,912	-2.3%
Fish processing		1,993	1,885	1,843	-1.1%
Aquaculture		394	200	200	-13.6%
Total		5,035	4,445	3,955	-2.5%
Inland fishing			210		

2. Fisheries dependence, 2005

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
se01 Stockholm	85	0.0%	40	0.0%
se02 Östra Mellansverige	153	0.0%	141	0.0%
se04 Sydsverige	701	0.1%	378	0.1%
se06 Norra Mellansverige	88	0.0%	77	0.0%
se07 Mellersta Norrland	52	0.0%	31	0.0%
se08 Övre Norrland	280	0.1%	91	0.0%
se09 Småland med öarna	261	0.1%	215	0.1%
se0a Västsverige	2376	0.3%	939	0.1%

Major fishing ports	13% vessels	40% kW	55% GT
se04 Sydsverige	Simrishamn		
se0a Västsverige	Träslövsläge, Hönö, Göteborg, Styrösö, Öckerö, Donsö, Rörö, Fotö, Fiskebäck		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	31,237	100	83
Fisheries total	20,402	65	138
Fishing	10,700	34	

4. Average age (years), 2003

National	42
Fisheries	46

5. Fleet and employment characteristics, 2005

	Coastal	Off-shore	Total
Employment	606	1,306	1,912
Number of vessels	1,249	357	1,606
GT	5,185	38,916	44,101
kW	72,093	144,497	216,590

6. Value of landings (mln euro), 1998-2003

	1998	2003	Change/year
Nominal	118	95	-4.3%
Real	118	86	-6.2%

7a. Employment by region and gender, National total 2003, Fisheries 2005

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	2,244	2,070	4,314	3,082	873	3,955
	52%	48%		78%	22%	
Total coastal regions	2,244	2,070	4,314	3,082	873	3,955
se01 Stockholm	486	469	955	66	19	84
se02 Östra Mellansverige	373	340	713	149	4	153
se04 Sydsverige	316	287	603	559	136	695
se06 Norra Mellansverige	198	177	375	83	5	87
se07 Mellersta Norrland	91	82	173	43	9	52
se08 Övre Norrland	120	112	232	197	79	276
se09 Småland med öarna	208	182	390	242	19	260
se0a Västsverige	452	422	874	1,744	603	2,347
Total non-coastal r.						

7b. Employment by fisheries sub-sector, region and gender, 2005

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	1,894	18	1,912	1,014	829	1,843	174	26	200
	99%	1%		55%	45%		87%	13%	
Total coastal regions	1,894	18	1,912	1,014	829	1,843	174	26	200
se01 Stockholm	40	0	40	22	18	40	4	1	4
se02 Östra Mellansverige	140	1	141	3	3	6	5	1	6
se04 Sydsverige	374	4	378	155	127	283	30	4	34
se06 Norra Mellansverige	76	1	77	4	3	7	3	0	4
se07 Mellersta Norrland	31	0	31	10	8	19	2	0	2
se08 Övre Norrland	90	1	91	94	77	170	13	2	15
se09 Småland med öarna	213	2	215	19	15	34	10	1	11
se0a Västsverige	930	9	939	707	578	1,285	107	16	123
Total non-coastal r.									

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	33,979	28,265	31,237	18,791	26,010	20,402

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage			10,700	32,130	26,421	29,561	27,360	23,220	26,822

9. National and fisheries employment by gender and age category, 2005

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	219	218	437	181	87	268
25-34	495	444	939	442	187	629
35-44	558	513	1,071	738	216	954
45-54	516	496	1,011	730	205	935
55-64	406	377	784	710	160	870
65+	50	23	73	282	17	299
Total	2,244	2,070	4,314	3,082	873	3,955

10. Characteristics of employment in marine fishing, 2005

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	606	1,306	1,500	412	1,660	252

Sweden

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat
Fishing	Fiskeriverket, 2005, gender division based on an indication of 10% female overall
Fish processing	Fiskeriverket, 2002, gender division based on an indication of 45% female overall
Aquaculture	Fiskeriverket, gender distribution is assumed male 60%, female 40%; indicated employment includes part time workers, estimate in FTE amounts to 278.
Inland fishing	Fiskeriverket
1b. Coastal NUTS 2	
National employment	
Fishing	Fiskeriverket, 2005, gender division based on an indication of 10% female overall
Fish processing	Fiskeriverket, 2002, gender division based on an indication of 45% female overall
Aquaculture	Regional distribution by gender is estimated on the basis of the relative distribution of fishing and processing.
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2003, all processing industry
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimate based on indications from Fiskeriverket, 2005
4. Further characteristics	
Coastal / off shore	EUFR, 2005
Owners / deckhands	Owners: Fiskeriverket, 2003, deckhands = total - owners
Full time / part time	Estimate. Full time = off shore + 60% coastal; part time = 40% coastal
5. Historical data	
Employment	AER, 1999 studies
Value of landings	AER

25. UNITED KINGDOM

1. Trends in the fisheries sector, 1990-2003

	Employment				Change/yr 98-03
	1990	1998	2003	2005	
Fishing	24,180	16,655	11,774	10,197	-6.9%
Fish processing	24,400	17,682	18,180	18,383	0.6%
Aquaculture		2,727	3,580	3,980	5.4%
Total		37,064	33,534	32,560	-2.0%
Inland fishing			na		

2. Fisheries dependence, 2003

NUTS-2	Total fisheries sector		Fishing	
	Employment	Dependence rate	Employment	Dependence rate
<i>ukc1</i> Tees Valley and Durham	428	0.1%	169	0.0%
<i>ukc2</i> Northumberland, Tyne and	1,195	0.2%	520	0.1%
<i>ukd1</i> Cumbria	1,433	0.6%	63	0.0%
<i>ukd2</i> Cheshire	88	0.0%	35	0.0%
<i>ukd4</i> Lancashire	672	0.1%	193	0.0%
<i>ukd5</i> Merseyside	59	0.0%	33	0.0%
<i>uke1</i> East Riding and North Linc	4,658	1.2%	184	0.0%
<i>uke2</i> North Yorkshire	469	0.1%	258	0.1%
<i>ukf3</i> Lincolnshire	966	0.3%	160	0.1%
<i>ukh1</i> East Anglia	1,690	0.2%	299	0.0%
<i>ukh3</i> Essex	221	0.0%	86	0.0%
<i>ukj2</i> Surrey, East and West Susse	770	0.1%	55	0.0%
<i>ukj3</i> Hampshire and Isle of Wigh	438	0.0%	340	0.0%
<i>ukj4</i> Kent	375	0.1%	349	0.0%
<i>ukk1</i> Gloucestershire, Wiltshire a	658	0.1%	353	0.0%
<i>ukk2</i> Dorset and Somerset	452	0.1%	338	0.1%
<i>ukk3</i> Cornwall and Isles of Scilly	1,330	0.6%	1,156	0.5%
<i>ukk4</i> Devon	1,296	0.2%	742	0.1%
<i>ukl1</i> West Wales and The Valley	999	0.1%	940	0.1%
<i>ukl2</i> East Wales	66	0.0%	15	0.0%
<i>ukm1</i> North Eastern Scotland	5,184	2.3%	1,694	0.7%
<i>ukm2</i> Eastern Scotland	872	0.1%	559	0.1%
<i>ukm3</i> South Western Scotland	2,568	0.3%	505	0.1%
<i>ukm4</i> Highlands and Islands	4,887	1.8%	2,172	0.8%
<i>ukn0</i> Northern Ireland	1,473	0.2%	557	0.1%

Major fishing ports	21% vessels	44% kW	54% GT
<i>uke1</i> East Riding and North Linc	Hull		
<i>ukk3</i> Cornwall and Isles of Scilly	Newlyn		
<i>ukk4</i> Devon	Brixham		
<i>ukm1</i> North Eastern Scotland	Banff, Peterhead, Fraserburgh		
<i>ukm4</i> Highlands and Islands	Oban, Lerwick		
<i>ukn0</i> Northern Ireland	Belfast, Newry		

3. Earning levels (gross annual income, euro), 2003

	Average	Index	F/M-ratio
National average	37,677	100	66
Fisheries total	29,835	79	93
Fishing	20,300	54	

4. Average age (years), 2003

National	40
Fisheries	39

5. Fleet and employment characteristics, 2003 (fleet 2005)

	Coastal	Off-shore	Total
Employment	6,012	5,762	11,774
Number of vessels	5,649	1,419	7,068
GT	21,758	199,605	221,363
kW	310,747	587,429	898,176

6. Value of landings (mln euro), 1998-2003

	1998	2003	Change/yr
Nominal	973	755	-5.1%
Real	973	711	-6.3%

7a. Employment by region and gender, 2003

Region name	National total (1000)			Fisheries total a+b+c		
	Male	Female	Total	Male	Female	Total
National total	15,816	12,880	28,696	24,637	8,897	33,534
	55%	45%		73%	27%	
Total coastal regions	8,778	7,300	16,078	24,469	8,775	33,244
<i>ukc1</i> Tees Valley and Durh	259	213	472	332	96	428
<i>ukc2</i> Northumberland, Tyne	341	290	631	897	298	1,195
<i>ukd1</i> Cumbria	129	99	229	829	603	1,433
<i>ukd2</i> Cheshire	259	222	482	75	13	88
<i>ukd4</i> Lancashire	376	309	685	469	202	672
<i>ukd5</i> Merseyside	326	270	596	54	5	59
<i>uke1</i> East Riding and North	226	177	402	2,653	2,005	4,658
<i>uke2</i> North Yorkshire	208	174	382	392	77	469
<i>ukf3</i> Lincolnshire	177	137	314	612	354	966
<i>ukh1</i> East Anglia	609	516	1,125	1,082	608	1,690
<i>ukh3</i> Essex	449	355	805	178	43	221
<i>ukj2</i> Surrey, East and West	728	595	1,324	450	319	770
<i>ukj3</i> Hampshire and Isle of	512	417	929	414	24	438
<i>ukj4</i> Kent	397	332	730	367	8	375
<i>ukk1</i> Gloucestershire, Wilts	628	517	1,145	534	124	658
<i>ukk2</i> Dorset and Somerset	318	265	582	410	42	452
<i>ukk3</i> Cornwall and Isles of	123	100	223	1,260	69	1,330
<i>ukk4</i> Devon	282	244	526	1,060	236	1,296
<i>ukl1</i> West Wales and The V	425	368	793	982	17	999
<i>ukl2</i> East Wales	293	250	542	51	15	66
<i>ukm1</i> North Eastern Scotlan	130	100	230	3,617	1,567	5,184
<i>ukm2</i> Eastern Scotland	493	436	929	744	128	872
<i>ukm3</i> South Western Scotla	529	463	992	1,734	833	2,568
<i>ukm4</i> Highlands and Islands	144	129	273	4,162	724	4,887
<i>ukn0</i> Northern Ireland	416	323	740	1,110	363	1,473
Total non-coastal r.	7,038	5,579	12,617	169	122	290

7b. Employment by fisheries sub-sector, region and gender, 2003

Region name	Fishing a			Processing b			Aquaculture c		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
National total	11,774		11,774	9,999	8,181	18,180	2,864	716	3,580
	100%	0%		55%	45%		80%	20%	
Total coastal regions	11,774		11,774	9,858	8,066	17,925	2,836	709	3,545
<i>ukc1</i> Tees Valley and Durh	169		169	98	80	178	65	16	81
<i>ukc2</i> Northumberland, Tyn	520		520	358	293	651	20	5	25
<i>ukd1</i> Cumbria	63		63	725	593	1,317	42	11	53
<i>ukd2</i> Cheshire	35		35	5	4	9	35	9	44
<i>ukd4</i> Lancashire	193		193	234	192	426	42	11	53
<i>ukd5</i> Merseyside	33		33	0	0	0	21	5	26
<i>uke1</i> East Riding and North	184		184	2,443	1,998	4,441	27	7	33
<i>uke2</i> North Yorkshire	258		258	77	63	140	57	14	72
<i>ukf3</i> Lincolnshire	160		160	424	347	770	28	7	35
<i>ukh1</i> East Anglia	299		299	726	594	1,321	56	14	70
<i>ukh3</i> Essex	86		86	36	29	65	56	14	70
<i>ukj2</i> Surrey, East and West	55		55	388	317	705	7	2	9
<i>ukj3</i> Hampshire and Isle of	340		340	9	8	17	64	16	81
<i>ukj4</i> Kent	349		349	5	4	10	13	3	16
<i>ukk1</i> Gloucestershire, Wilts	353		353	139	113	252	42	11	53
<i>ukk2</i> Dorset and Somerset	338		338	43	35	78	28	7	35
<i>ukk3</i> Cornwall and Isles of	1,156		1,156	76	62	138	28	7	35
<i>ukk4</i> Devon	742		742	276	226	501	42	11	53
<i>ukl1</i> West Wales and The V	940		940	12	10	21	30	7	37
<i>ukl2</i> East Wales	15		15	11	9	20	25	6	31
<i>ukm1</i> North Eastern Scotlan	1,694		1,694	1,911	1,564	3,475	12	3	15
<i>ukm2</i> Eastern Scotland	559		559	143	117	260	42	10	52
<i>ukm3</i> South Western Scotla	505		505	926	757	1,683	304	76	380
<i>ukm4</i> Highlands and Islands	2,172		2,172	399	327	726	1,591	398	1,989
<i>ukn0</i> Northern Ireland	557		557	396	324	720	157	39	196
Total non-coastal r.				141	115	255	28	7	35

8a. Earning level: national economy and total fisheries sector (gross annual income, euro), 2003

	National total			Fisheries total		
	Male	Female	Total	Male	Female	Total
Wage	44,430	29,384	37,677	30,411	28,201	29,825

8b. Earning level: fisheries sub-sectors (gross annual income, euro), 2003

	Fishing			Processing			Aquaculture		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Wage	20,300		20,300	41,278	28,568	35,559	34,042	24,008	32,035

9. National and fisheries employment by gender and age category, 2003

Age category	National total (1000)			Fisheries total		
	Male	Female	Total	Male	Female	Total
15-24	2,137	1,912	4,049	4,394	2,523	6,918
25-34	3,678	2,853	6,531	6,234	2,379	8,613
35-44	4,266	3,454	7,720	6,781	1,768	8,548
45-54	3,268	2,897	6,165	4,633	1,301	5,933
55-64	2,137	1,576	3,713	2,422	921	3,342
65+	329	188	517	174	6	180
Total	15,816	12,880	28,696	24,637	8,897	33,534

10. Characteristics of employment in marine fishing, 2003

	Fleet		Ownership		Full / part time	
	Coastal	Off-shore	Owners	Deck-hands	Full time	Part time
Number of persons	6,013	5,761	7,068	4,706	9,242	2,532

United Kingdom

Description of sources and estimations

Data	Source / estimation
1a. Total country	
National employment	Eurostat, 2003
Fishing	Defra, 2003, gender M/F=100/0 on basis of expert information
Fish processing	SFIA
Aquaculture	Result of survey of professional organizations by Poseidon Ltd
1b. Coastal NUTS 2	
National employment	Eurostat, 2003
Fishing	Defra, 2003, regional distrib. Estimated on basis of slightly different regional data; gender equal to national distribution
Fish processing	FIFG Mid-term evaluation, 2002/3
Aquaculture	Estimate on basis of the total by Poseidon and regional distributions by Lantra LMI and 1999 studies; gender assumed M/F=80/20. Sources: FRS Scottish Fish Farms Annual Production Survey, 2002; FRS Scottish shellfish farm production survey, 2004; Socio-economic study of the UK trout industry, 2001; Shellfish News No. 18, November 2004
2. Earning levels	
National employment	Eurostat, 2003
Fishing	AER
Fish processing	Eurostat, 2002, all manufacturing
Aquaculture	Eurostat, 2002, craft and related trades worker (isco7)
3. Age distribution	
National	Eurostat
Total fisheries	Estimated on basis of data for fish processing (SFIA, 2000) and general age distribution model.
4. Further characteristics	
Coastal / off shore	EUFR
Owners / deckhands	Owners – based on assumption one-man-one-boat.
Full time / part time	Defra, 2003
5. Historical data	
Employment	AER, 1991 and 1999 studies
Value of landings	AER