

WORKSHOP ON 'NORTH SEA FISHERIES RESEARCH'

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ECONOMIC ASSESSMENT OF EUROPEAN FISHERIES (EAEF)

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Abstract

The main objective of the EAEF was to produce an Annual Economic Report on Economic Performance of Selected European Fishing Fleets (AER) and to implement the EIAA model (Economic Interpretation of ACFM Advice). In 2004 EAEF reported on 89 fleet segments in 20 countries, representing 60-70% of the total value of the European production.

Significant attention was given to the communication with the users. Popularized results were annually presented in flyers and articles were published in the professional journals in various countries. Users were invited to provide feedback. Unfortunately very few comments were received. Communication with the users (industry and administrations) proved more difficult than expected.

The experience from EAEF on communication with the users shows that:

1. Communication with users is difficult on topics outside the accepted paradigm, which for CFP centers around stock assessment.
2. Non-specialists cannot assess the quality of the presented data and may dispute it for a variety of reasons.
3. Economic data and analysis undermine the argument of 'socio-economic importance' of the European fisheries sector. The potential users prefer to follow convenient beliefs rather than accept inconvenient data.
4. Information is only relevant when it is available at the right time and place.
5. Communication is a specialist activity, possibly beyond scope and ability of a research project.
6. The resource allocation of a research project is not flexible enough to allow development of unforeseen tools to respond to newly arising information needs of the stakeholders.

Despite the implementation of the Data Collection Regulation, EAEF has not yet been followed up by a new structure which would produce comparably concise statistics and reports. Development of effective communication means has been consequently delayed.

1. INTRODUCTION

Background and objective of EAEF

The EAEF project was a last of three Concerted Actions carried out between 1994 and 2004¹. These and various other projects aimed to demonstrate that economic analysis could produce a relevant contribution to the formulation and implementation of the Common Fisheries Policy. The potential relevance of economics was recognized at the EU level explicitly in the 1992 review of the CFP and for example by renaming STCF into STECF, 'E' standing for 'Economic'.

The main objective of the EAEF was to continue the preparation of an Annual Economic Report on the Economic Performance of Selected European Fishing Fleets (AER) and to implement the EIAA model (Economic Interpretation of ACFM Advice). Preparation of an annual economic report was called for in the article 16 of the Council Reg 3760/92. It was a result of the 1992 review of the CFP and the installation of the STECF. The 2002 CFP review (Council Reg. 2371/1999) was not as specific in the article 33 relating to consultation of STECF.

Box 1. Article 16 of Council Reg. 3760/92

The Commission shall set up under its auspices a Scientific, Technical and Economic Committee for Fisheries. The Committee shall be consulted at regular intervals and shall draw up an annual report on the situation with regard to fishery resources and developments concerning fishing activity, with reference to biological and technical factors. It shall also report on the economic implications of the fishery resources situation. The Committee shall report annually on the work done and required, to the extent provided for in Article 41 (a) of the Treaty, in the field of scientific and technical research for the fisheries and aquaculture sector.

Development

The first project (1994-1997) stressed as the main priority to compile and exploit data which was already being collected in several EU Members States. Subsequently, the data was homogenized to achieve international comparability in terms of indicators and fleet segments and a consistent presentation was developed. The second and third project aimed to expand the volume of the available data to new countries, including the Baltic states which were going to join the EU.

In the first project six partners covered five EU Member States. The third project covered 20 main European countries with marine fisheries, including three non-EU countries.

2. RESULTS

Between 1996 and 2004 the projects produced nine annual reports on the economic status of the European fisheries. The 2004 edition presented data on 86 fleet segments in 20 countries covering 60-70% of the European fisheries sector in terms of value and volume of production. Coverage by country differed significantly from only a few percent in Greece to 100% in Italy, Denmark, Netherlands, Belgium and some other countries. The last report of the institutes involved in the EAEF Concerted Action was produced under a separate contract with the EC in 2005 to bridge the shift to a new approach, as a consequence of the implementation of the Data Collection Regulation.

The efficiency of the preparation of the Annual Economic Report gradually increased. While in the initial phase long meetings were required to elaborate the analysis and draft the text. The last two editions of the report were prepared almost with a 'push on button', using a database to which all partners uploaded their data through internet and which generated standard tables and graphics. The database contained a model

¹ Concerted Action: *Co-ordination of Research in Fishery Economics* (CT94 1489), 1994-1997;
Concerted Action: *Promotion of Common Methods for Economic Assessment of EU Fisheries*, FAIR PL97-3541, 1998-2001;
Concerted Action: *Economic Assessment of European Fisheries*, Q5CA-2001-01502, 2002-2004

to assess short and medium term performance. The model distinguished three types of short term performance (Deterioration – Stable – Improvement) and four categories of medium term performance of each segment ranging from ‘Very weak’ to ‘Strong’. The results of this model were generated in the standard format along with the other components of the report. Finally, the database checked the consistency and correctness of the various figures and pointed to possible problems. In this way it became possible to devote more time to EU-wide and regional.

Regarding the North Sea, the EAEF reports of 2004 and 2005 presented analysis of this region based on 17 fleet segments from Belgium, Denmark, Germany, The Netherlands and United Kingdom, encompassing a total of more than 2,000 vessel with a total production value decreasing from almost 1 billion Euro in 2001 to about 850 million Euro in 2004. The type of data presented in the regional review of the AER is presented in appendix A.

Furthermore the reports contained standard presentations and a statistical annex for each segment (see appendix B). It was expected that standardized presentation would make the accessibility and comparability of the data easier for the users.

The EAEF project alone generated during the three years of its operation at least:

- 3 Annual Economic Reports, incl. popularized flyers
- 7 reports to STECF (incl. reports on EIAA results)
- 45 articles in professional journals in 12 countries
- 2 articles in Marine Policy
- 6 presentations during three sessions with the staff of the European Commission
- several presentations at conferences
- Presentation to ACFA (Advisory Committee on Fisheries and Aquaculture)
- Several working documents on possible applications of economic data, the statistical quality, descriptions of the data collection methods, etc.

The data generated by the project was used in various studies and Commission reports, e.g.:

- Preparation of the EU Conference on Energy Efficiency in Fisheries, held in Brussels 12-13 May 2006.
- LEI and Framian, The Impact of the Increase of the Oil Price in European Fisheries, Study for the European Parliament, June 2006
- LEI and Framian, Employment in the fisheries sector: current situation, study for EC, April 2006
- Poseidon and Framian, Regional dependency on fisheries, Study for the European Parliament, July 2007
- The data compiled by the project was used in various bio-economic models, e.g. Invest-in-Fish, CEVIS, EFIMAS, etc.

3. COMMUNICATION WITH USERS

Significant attention was given to the communication with the users of the report. Some 600 hard copies of the report were printed annually and distributed through the national partners to industry representatives, relevant administrations, professional journals and interested researchers or individual companies. Digital reports were available at request and through the websites of some of the participating institutes. Furthermore the contents were presented in a popularized form in a four-page full color flyer and articles were published in the professional journals in various countries.

In all published reports and flyers the users were invited to provide feedback, raise questions and make comments to allow the team to improve the utility and accessibility of the compiled data. Unfortunately very few comments were received. Direct exchange with the users proved more difficult than expected.

The reports and the compiled data were primarily relevant for other research projects. However, direct exchange with the stakeholders (industry and administrations) was not sufficiently successful. It did not deliver the results hoped for, namely greater use of economic data and analysis within the Common Fisheries Policy. This can be explained by several observations made in the course of the project in six areas:

- Economics falls outside the accepted paradigm of fisheries management.
- The users do not trust the data.
- The implications of the data are inconvenient.
- Problem of timing.
- Communication skills
- Development of specific tools

Paradigm

The Common Fisheries Policy is based on techno-biological principles. The conservation policy of TACs and quota, accompanied by technical measures, assumes still that it is possible to control and enforce at the required level detail. It was and still seems to be fundamentally disregarded whether the measures work with or against the economic forces of the market. The recognition that fishing is an economic activity has not yet led to an introduction of economically consistent management measures. Economic data is still seen largely as an input to bio-economic models, i.e. within the framework of and driven by the existing techno-biological paradigm. Its independent contribution has not yet been appreciated.

The potential relevance of the economic data and analysis was presented by EAEF at various occasions. However, as it does not fit well within the existing paradigm and most decision makers are not used to economic reasoning, the appreciation of the arguments in favor of economics has remained limited. The usual question was *'How do we use this?'*. This is a rather surprising attitude considering the role which economic analysis plays in public policies in many areas, including environment.

Mistrust versus statistics

Since the 2003 the AER reports included an annex on statistical reliability of the presented data, including standard errors, size of population and sample, and the T-test for representativity of the sample. The project has also produced documents describing the methods of data collection by the various partners. Despite these efforts to demonstrate explicitly the strengths and weaknesses of the data, its value was regularly publicly and privately disputed by arguments as *'You are not getting right data!'* or *'Where does this data come from anyway?'* and *'I know that your data is wrong.'*, etc. The fundamental problem was that the critical users were not willing or open to take note of the evidence which EAEF put forward. And indeed, statistical quality of the data can be only appreciated by those mastering the principles of statistics, which is a domain of statisticians not of stakeholders. The scientific integrity of the EAEF results was questioned, without real examination.

Inconvenience

Economic statistics are considered fundamentally politically sensitive and they are not appreciated if they do not fit a suitable political argument. The interests of the fisheries industry are often defended (by their representatives and national administrators) by putting forward the argument of 'socio-economic' role and importance of the fisheries sector in the coastal regions. Similarly, it is regularly convenient to present the situation of the fishing industry with selective indicators, which may highlight the desired aspect but hide another one. Availability of a consistent set of economic data, and accompanying analysis, may falsify such statements easily.

In this connection it is regrettable that even biologists, as fellow scientists, did not recognize the relevance of the economic contribution. Economic argument pleading for greater competitiveness through higher efficiency and less subsidies could have strengthened the biological argument to protect stocks and harvest at most the recruitment. But within the present fisheries management paradigm only biology is a science,

as exemplified by the common expression ‘scientific and economic ...’. (e.g. in the term STECF), and consequently claims precedence over other domains.

Timing

In order to make a relevant contribution to the fisheries management process, timing is of utmost importance. Information which is available too late is of no use as the decisions have been made. EAEF managed to finalize the draft reports in October, containing the data of the previous year. Running the EIAA model, which could have made a relevant contribution to decision making process at the end of the year, had to take place under tremendous time pressure. Even if the results were delivered October, there was not enough time for the stakeholders to digest them and consider their implications.

The EIAA model showed economic consequences of the various scenarios proposed by ICES. In many cases it showed that taking more restrictive measures to protect stocks did NOT have such devastating effects on the fleets as some ‘stakeholders’ argued.

Communication skills

It must be recognized that effective communication requires special skill, even more if major obstacles (as described above) have to be overcome. It is not certain that people whose profession is scientific research are also skilled communicators, able to ‘sell’ an idea.

The EAEF project did not contain a specific ‘task’ (with time and budget allocation) to communicate the results. Neither were there communication specialists on the team. It is evidently uncertain whether inclusion of this component would have made a significant difference, but it is an issue to consider in the future.

Development of tools

In order to respond effectively to users’ needs it would have been useful to develop specific tools, which would deal with specific topics, e.g. a simulation model to estimate the economic performance of the ongoing year or a model to assess consequences of the development of fuel and fish prices. A similar argument applies to communication tools such as websites, newsletters, workshops, etc.

In order to develop such tools when the need arises sufficient flexibility is required in the project’s mandate to allocate resources accordingly. Such flexibility does not exist, albeit for understandable reasons. It would be in the interest of stakeholders to consider how proper conditions could be created which would facilitate efficient and effective provision of relevant information.

4. OUTLOOK

With the introduction of the Data Collection Regulation the European Commission decided that the whole process of the preparation of the Annual Economic Report had to be formalized and brought under STECF and JRC. This process was initiated in 2005-6. Since then STECF / SGECA has met two times. One report was produced, but not made public in 2007 and the next (2006 data) is under preparation at present and may be completed by June / July.

The institutionalization means that all Member States now are obliged to collect and deliver economic data. This will potentially increase the coverage of the data approaching the full 100%. At the same time, however, the involvement of the administrations, with their own agenda and political sensitivities, implies that the administrations in some MS wish to review the data before it is submitted to the Commission or other users. Consequently the process of completing the report is extended. While EAEF was able to finish the report with data of year ‘t’ by October of ‘t+1’, the present practice is unlikely to deliver a result before the summer of the year ‘t+2’.

EAEF developed and put into operation a database, which generated a significant part of the report, allowing the researchers to focus on actual analysis. Since 2005-6 JRC has not been able to make a new database operational offering comparable features.

In view of the practical problems faced with the implementation of the Data Collection Regulation, it seems unlikely that any attention will be given to address the problems of communication with the stakeholder in foreseeable future.

5. CONCLUSIONS

The experience from the EAEF shows that communication with the users faced a number of significant problems:

1. Paradigm: Communication with users is difficult on topics which fall outside the accepted paradigm, which for CFP centers around stock assessment.
2. Statistics and mistrust: Non-specialists cannot assess statistical quality of the presented data and may dispute it for a variety of reasons.
3. Inconvenience: Well structured economic data and analysis undermines the argument of 'socio-economic importance' of the European fisheries sector. The potential users prefer to follow convenient beliefs rather than accept inconvenient data.
4. Timing: Information is only relevant when it is available at the right time and place.
5. Communication skills: Broad dissemination of information is a specialist activity, possibly beyond scope and ability of a research project. The assumption that scientists also possess this quality should be critically reviewed.
6. Tools: Research projects do not have the flexibility to respond to newly arising information needs of the stakeholders.

In addition it can be concluded that while EAEF did not cover fully the EU, it developed an effective and efficient way to report regularly on the economic status of the European fishing fleets, including those outside EU. With the implementation of the Data Collection Regulation the existing tools were abandoned for the sake of full EU coverage, but a comparably effective and efficient system has not been put in place yet.

Appendix A.

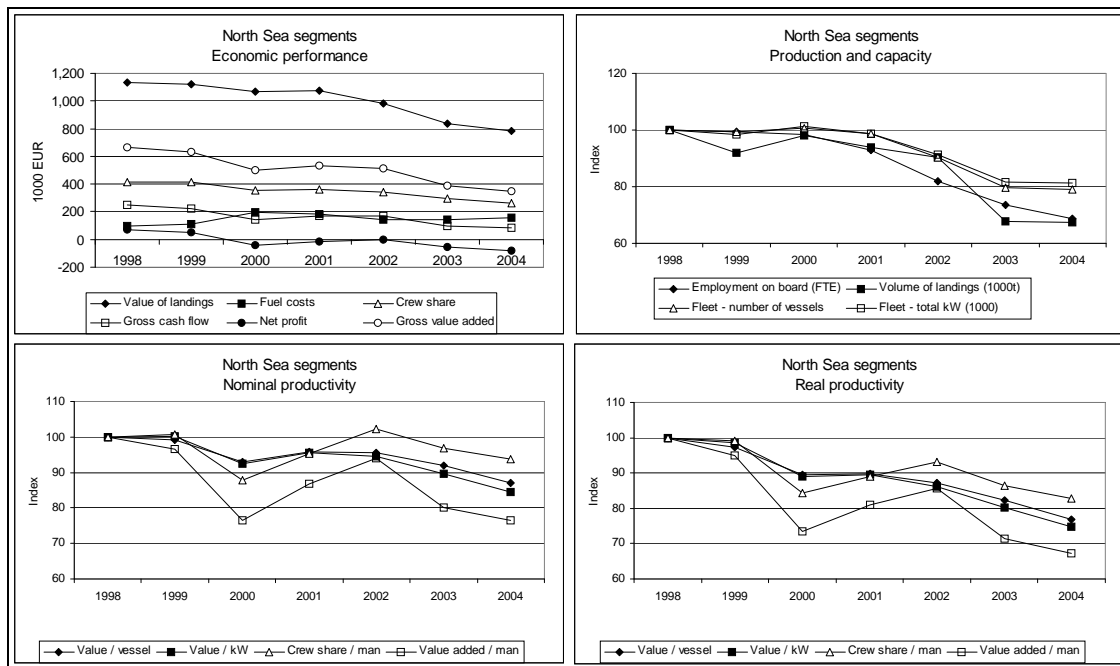
Example of data on North Sea presented in AER

(Source: AER 2004 and 2005)

Regional summary - main indicators for the North Sea, 2003 - 2004

	2003	2004		2003	2004
Number of segments	17	17	VL / man (1000 EUR)	119	120
Value of landings (mEUR)	801	848	GVA / man (1000 EUR)	57	53
Gross cash flow (mEUR)		89	kW / vessel (EUR)	373	377
Net profit (mEUR)		-79	VL / vessel (1000 EUR)	433	416
Gross value added (mEUR)	427	372	VL / kW (EUR)	1,160	1,102
Employment on board	7,476	7,041	VL / tonne (EUR)	779	718
Volume of landings (1000t)	1,144	1,182			
Fleet - number of vessels	2,060	2,040			
Fleet - total kW (1000)	768	769			
Fleet - total GT (1000)		199			

VL = value of landings, GVA = gross value added



Trends of the North Sea segments

List of North Sea fleet segments in 2005 report

Belgium

Beam trawlers < 24 m

Beam trawlers > 24 m

Shrimp beam trawlers

Denmark

Danish seiners

Gillnetters

Purse s. / trawlers >= 40

Trawlers < 24 m

Trawlers 24 - < 40 m

Germany

North Sea trawlers

Shrimp beam trawlers

Netherlands

Beam trawlers <= 24 m

Beam trawlers > 24 m

Shrimp beam trawlers < 24 m

Trawlers > 24 m

United Kingdom

Scot.demersal trawlers < 24 m

Scot.demersal trawlers > 24 m

Scottish seiners

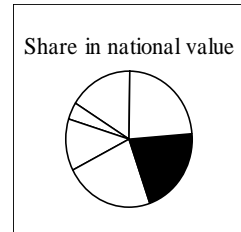
Appendix B.

Standard presentation of a segment in AER 2005 – example Denmark

B-1 Text

2.3 Trawlers 24 - < 40 m

The fleet consist of 118 vessels ranging from 100 to 440 GT with a crew of from 3 to 6 men each. The average size is 247 GT with engine power about 600 kW. The fleet generated 21% of the total value of the Danish fishery in 2004 performing an average of 223 days at sea per vessel. The share of capital input was 26% whereas the labour input was 20% of the total labour. About 44% of the fleet's income was generated by industrial fishery. The important consumption species are Norway lobster and northern prawn.



	2004	Change 2004/2003, %
<i>Economic indicators (average/vessel, EUR)</i>		
□ Value of landings	630,983	-9.1
□ Gross value added	261,364	-16.8
□ Gross cash flow	31,627	-54.2
□ Net profit	-176,119	-31.0
<i>Other economic indicators (total segment)</i>		
□ Employment on board (FTE)	633	-10.2
□ Invested capital (mEUR)	147	-9.4
□ Fleet - number of vessels	118	-4.8
□ Fleet - total GT (1000)	29	-6.4
□ Fleet - total kW (1000)	70	-6.8

Economic performance

Short term: deterioration

Medium term: very weak

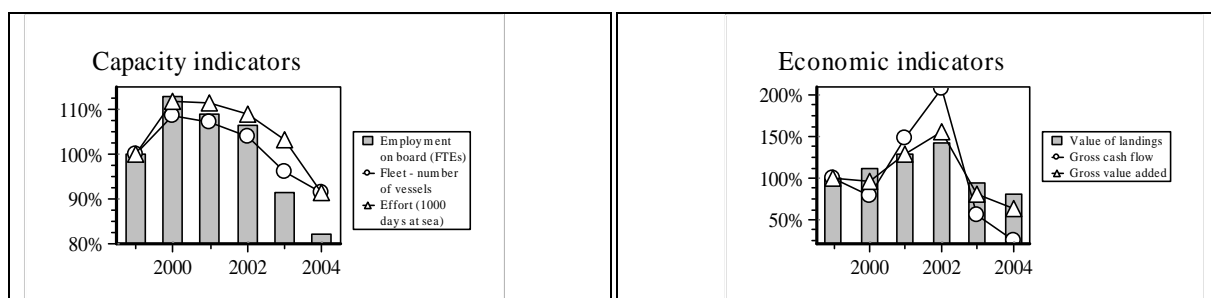
Gross output of the fleet fell by EUR 11.6 mln of which EUR 8 mln was caused by the industrial fishery. As costs were reduced by EUR 6.7 mln, the gross cash flow decreased by 56% to EUR 3.7 mln. After depreciation and payment of interest expenditure the net profit became negative at EUR -20.8 mln.

Assessment for 2005 compared to 2004

Expected revenues: decrease

Costs: increase

A further deterioration in the output from industrial fishery is expected. The figures for the first 8 months of 2005 show a 29% loss compared with the same period last year. Landings of northern prawn in 2005 are 48% above last years volume, but the increase in revenue is only 22% because of lower price. The price of Norway lobster has increased, while the landing volume has fallen. The outlook for 2005 is not favourable due to the disappointing industrial fishery.



B-2 Statistical annex

2.3.1 Denmark: Trawlers 24 - < 40 m, economic and capacity indicators, 1999-2004

	1999	2000	2001	2002	2003	2004
Economic indicators (mEUR)						
Value of landings	92.7	103.7	119.2	131.0	86.0	74.5
Fuel costs	10.1	18.9	17.7	15.7	15.0	15.9
Other running costs	13.1	15.4	16.7	16.4	12.4	11.5
Vessel costs	20.3	22.1	21.3	21.9	19.7	16.2
Crew share	33.7	35.1	40.5	44.8	30.4	27.1
Gross cash flow	15.5	12.2	23.0	32.2	8.6	3.7
Depreciation	14.5	18.2	18.9	17.1	15.5	15.3
Interest	7.1	8.3	10.2	10.3	9.7	9.2
Net profit	-6.2	-14.3	-6.1	4.7	-16.7	-20.8
Gross value added	49.2	47.3	63.5	77.0	39.0	30.8
Other economic indicators						
Employment on board (FTE)	771.0	869.0	841.0	819.9	705.2	633.2
Invested capital (mEUR)	134.6	161.6	169.1	163.1	162.3	147.1
Effort (1000 days at sea)	28.8	32.2	32.1	31.4	29.7	26.3
Capacity indicators						
Volume of landings (1000t)	553.6	691.2	667.3	609.7	382.2	368.2
Fleet - number of vessels	129.0	140.0	138.0	134.0	124.0	118.0
Fleet - total GRT (1000)						
Fleet - total GT (1000)	27.9	32.1	33.3	32.4	31.2	29.2
Fleet - total kW (1000)				81.3	75.4	70.3

2.3.2 Denmark: Trawlers 24 - < 40 m, composition of landings, 1999-2004

Major species	Value (mEUR)						Volume (1000 t)					
	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
Sole	0.1	0.6	0.5	0.4	0.4	0.4	0.0	0.1	0.1	0.1	0.0	0.0
Plaice	2.9	1.7	3.0	1.8	1.9	3.9	1.6	1.1	1.8	1.0	1.0	2.2
Cod	4.7	5.5	5.3	5.3	3.4	3.3	2.4	2.7	2.2	2.3	1.4	1.3
Anglerfish	3.4	3.1	6.2	4.8	3.8	4.0	0.7	0.6	1.2	1.2	1.1	1.3
Herring	12.0	3.7	9.9	9.6	6.2	3.0	56.0	24.5	34.1	28.9	26.9	14.8
Mackerel	0.7	0.4	1.4	1.6	1.2		2.4	1.0	2.4	2.6	2.4	
Industrial fishery	41.8	58.9	62.6	74.3	40.8	32.9	476.0	650.8	612.7	557.2	334.6	335.6
Haddock	0.8	0.8	1.9	1.9	1.1	1.3	0.7	0.6	1.4	2.0	1.2	1.2
Saithe	1.2	1.0	1.5	1.9	2.2	1.5	1.7	1.3	1.8	2.7	3.6	2.6
Witch flounder	0.7	1.2	1.5	1.4	2.2	2.1	0.4	0.6	0.7	0.6	0.8	0.9
Lemon sole	0.4	0.9	1.7	0.7	0.7	1.1	0.1	0.2	0.4	0.1	0.2	0.3
Pollack	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Turbot	0.6	0.3	0.5	0.4	0.3	0.7	0.1	0.0	0.1	0.1	0.0	0.1
Hake	0.3	0.2	0.6	0.4	0.3	0.5	0.1	0.1	0.3	0.3	0.2	0.3
Norway lobster	9.6	8.9	11.8	15.3	10.5	8.0	1.2	1.0	1.2	1.4	1.3	1.1
Northern prawn	9.2	10.4	5.1	6.8	7.0	8.5	4.8	5.4	2.7	3.8	4.2	3.4
Other fish	3.4	1.2	3.1	3.1	2.5	2.5	5.4	1.3	4.2	5.2	3.1	2.9
Dab	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Other income	0.8	4.7	2.2	1.0	1.4	0.7						
Total	92.7	103.7	119.2	131.0	86.1	74.5	553.6	691.2	667.3	609.7	382.2	368.2

2.3.3 Denmark: Trawlers 24 - < 40 m, composition by size and age, 2004

Size class (m)	Number	GT (1000)	kW (1000)	Age class	Number	GT (1000)	kW (1000)
<12				1980 and older	91	22.4	52.3
12-<24				1981-1985	15	3.8	9.6
24-<40	118	29.2	70.3	1986-1990	6	1.4	3.8
>40				1991-1995			
				1996-2000	2	0.4	1.4
				2001 and later	4	1.2	3.2
Total	118	29.2	70.3	Total	118	29.2	70.3