JRC Scientific and Technical Reports

Scientific, Technical and Economic Committee for Fisheries (STECF)

Report of the Working Group on the Balance between Fishing Capacity and Resources: Part II (SGECA/SGRST 08-01)

Joint Working Group on Economic Affairs (SGECA) and on Stock Reviews (SGRST) of the Scientific, Technical and Economic Committee for Fisheries (STECF)

19-22 FEBRUARY, BRUSSELS

Edited by John Anderson & Franz Hölker

EUR 23642 EN - 2008

JRC EUROPEAN COMMISSION

ipsc Institute for the Protection and Security of the Citizen

The mission of the Institute for the Protection and Security of the Citizen (IPSC) is to provide research results and to support EU policy-makers in their effort towards global security and towards protection of European citizens from accidents, deliberate attacks, fraud and illegal actions against EU policies

European Commission
Joint Research Centre
Institute for the Protection and Security of the Citizen

Contact information
Address: TP 051, 21027 Ispra (VA), Italy
E-mail: stecf-secretariat@jrc.it
Tel.: 0039 0332 789343
Fax: 0039 0332 789658

https://stecf.jrc.ec.europa.eu/home
http://ipsc.jrc.ec.europa.eu/
http://www.jrc.ec.europa.eu/

JRC 49101

EUR 23642 EN
ISBN 978-92-79-10480-0
ISSN 1018-5593
DOI 10.2788/39675

Luxembourg: Office for Official Publications of the European Communities

Printed in Italy

TABLE OF CONTENTS

1. Introduction 6

2. Terms of reference 6

3. STECF Comments and Conclusions 6

ANNEX I SGECA/SGRST-08-01: BALANCE BETWEEN FISHING CAPACITY AND RESOURCES (PART II)

4. Introduction 12

4.1. Terms of reference 12

4.2. Participants 15

5. ToR 1 16

6. ToR 2 17

7. TOR 3a) 21

7.1. Return on Investment (ROI) 21

7.2. Current revenue / Break-Even Point Ratio (CR /BEP) 22

7.3. Gross Value Added (GVA) 24

7.4. Average wage per FTE 24

7.5. The ‘F’ indicator (Fishing Mortality Ratio) 25

7.5.1. Single Species F Indicator 25

7.5.2. Multi-species F indicator 28

7.6. The ‘H’ indicator (Harvest or Catch / Biomass Ratio) 29

7.7. Catch per unit of effort (CPUE) 31

7.8. Capacity Utilisation 32

7.9. ToR 3b: 34

7.9.1. Reconciling opposing information of a sub-set of the indicators 34

7.9.2. How to relate indicators with each other in a multi-species/multi-fleet situation 35

7.9.3. Address the consequences of a varying time span for the indicators 35

7.9.4. "Costs and prices test" 35

8. TOR 4 37

8.1. North Sea Mixed Demersal 37

8.1.1. DTS_12-24m 39

8.1.2. DTS_24-40m 43
8.2. Northern Hake 47
8.2.1. DTS_24-40m 48
8.2.2. DFN_24-40m 50
8.2.3. HOK_24-40m 51
8.3. North Sea Flatfish 52
8.3.1. TBB_12-24m 52
8.3.2. TBB_24-40m 56
8.3.3. TBB_40m 59
8.4. Baltic Cod 63
8.4.1. DTS_12-24m 64
8.4.2. DTS_24-40m 65
8.5. Mediterranean Swordfish 67
8.5.1. HOK_12-24m 67
8.6. Mediterranean trawler fishery 68
8.6.1. Beam trawlers_12-24m 68
9. ToR 5 70
10. Acknowledgements 72
11. References 72
12. Appendices 72
Appendix A: North Sea Demersal indicator data tables 73
Appendix B: Northern Hake data tables 76
Appendix C: North Sea Flatfish indicator data tables 83
Appendix D: Baltic Cod indicator data tables 86
Appendix E: Mediterranean indicator data tables 92
Appendix F: Economic Variable Definitions 94
Appendix G: Example Calculation of Capacity Utilisation Indicator 95
ANNEX I DECLARATIONS OF EXPERTS 96

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

STECF COMMENTS ON THE REPORT OF THE JOINT WORKING GROUP ON ECONOMIC AFFAIRS (SGECA) AND ON STOCK REVIEWS (SGRST)

BALANCE BETWEEN FISHING CAPACITY AND RESOURCES (PART II) (SGECA/SGRST-08-01)

19-22 FEBRUARY 2008, BRUSSELS

STECF OPINION EXPRESSED DURING THE PLENARY MEETING (PLEN-08-01)

14-18 APRIL 2008, HAMBURG

1. INTRODUCTION

STECF is requested to review the report of the SGRST-08-01 meeting of February 19-22, 2008 (Brussels), evaluate the findings and make any appropriate comments and recommendations.

2. TERMS OF REFERENCE

1. Undertake a literature review concerned with assessing overcapacity in European fisheries. This task will be frontloaded and will be presented at the start of the meeting.

2. Further study which biological/technical indicators should be recommended to assess the balance question. The biological indicators so far retained by the previous working group (SGECA-SGRST 07-05) are: Ratio between current and target fishing mortality, Catch per unit of effort, Ratio between catch and biomass. Since the balance between capacity and exploitation is to be assessed at national level, these indicators should ideally be fleet and country specific.

a) Biological data are available at Community (region) level and – at least for fisheries shared among Member States -, not at Member States level. The working group is requested to advise ways of addressing this issue. One avenue addressed in the report of the previous working group (p. 7) is to look at MS quotas agreed at Community level where those are restricting in nature, i.e. are being (almost) exhausted before the end of the season or even overshot, and representing a predominant interest of the fleet concerned. Examining the quota utilisation rates by fleets might show a trend over time. A further trend might be established by the "regional view" coming from e.g. a targeted fishing mortality in stocks concerned, in particular when these are not subject to the TAC and quota system;

b) STECF summer 2007 plenary gave a list of indicators that might be considered for the desired simple approach to expressing the balance. Among them was the capacity utilisation rate expressed in real fishing days/maximum possible fishing days. The previous working group explored this indicator and discussed the lack of individual vessel data from DCR calls, and the problem of comparing vessel behaviour within not fully homogenous fleet segments. The working group is requested to finalise this assessment.

3. Draft guidelines for practical steps to improve the reporting on the balance between fishing capacity and fishing opportunities by Member States, based on the preference list of "balance-indicators" already identified by the SGECA-SGRST working group 07-05 and conclusions on point 2 above. The indicators so far identified by the previous working group are:

- Economic indicators: Return on investment, Break-even revenue/current revenue;
- Biological indicators: Ratio between current and target fishing mortality, Catch per Unit of effort, Ratio between catch and biomass,
- Social indicators: Gross value added, evaluation of crew wages

The guidelines should provide the following:

a) for each indicator

– A short discussion of each indicator, in particular its strengths and weaknesses (concerning the balance question in general and usability in different fisheries)

– The data requirements and calculation method

– a recommended minimum time series allowing for building stabilised results

– Benchmarks or reference points guiding on the assessment of balance.

b) for the discussion and conclusions that might be derived from the application of the indicators:

– How to reconcile opposing information of any sub-set of the indicators, for example a positive short-term economic trend versus a negative long-term biological trend

– How to relate indicators with each other in a multi-species/multi-fleet situation, i.e. that each fleet exploits several stocks and each stock is exploited by several fleets. In particular, give guidance on how to relate Fmsy to catch composition analysis of fleet segments which have mixed catches including stocks for which Fmsy is not known

– Address the consequences of a varying time span to which indicators are applied. Results could vary depending on whether the time perspective is considered to be short run or long run. The consequences of this in relation to the indicators must be addressed.

– STECF November 2007 plenary noted that economic, as opposed to physical/technical, measures of output capacity depend upon prices. The working group should consider recommending a "costs and prices test" in the analysis of economic indicators, i.e. a qualitative analysis to what extent cost increases or price per kilo reductions/lack of demand have affected the economic balance, rather than the availability of resources.

4. Apply indicators retained to certain fisheries/fleet segments, and provide a short discussion of the results obtained. Primarily, data from the DCR call of January 2008 shall be used. The absence of biological data from this exercise, where relevant (e.g. biomass, catches that include discards), shall be addressed by referring to other available sources (ICES, RFMOs). About 5 fisheries should be selected. The chairman shall propose a selection in advance of the meeting, having regard to the recommendations made by SGRST-SGECA 07-05. The selection shall be finally fixed in view of the data quality of data coming from the DCR January call.

5. Provide orientation for follow-up work to be done for improving the indicators. Currently, a first set of simple indicators has been developed. Based on this set the outlook of a future, perhaps more sophisticated method can be devised, be it an improvement of the indicators themselves, their relation with each other or the application of indicators to data sets (e.g. trip-related economic data). The discussion on this point shall take into consideration issues such as mixed fisheries, the outline of the fisheries-approach in the new DCR 2008, and an approach to balancing biological, economic and societal indicators.

3. STECF COMMENTS AND CONCLUSIONS

STECF Observations

STECF compliments the SGRST-SGECA 08-01 working group on the progress achieved in developing biological, technical and economic indicators relating to the balance between fleet capacity and fishing opportunities[1]. STECF considers the output of the working group to be a significant contribution to the future approach to be used by Member States when producing their annual reports about capacity and exploitation.

The current list of indicators could be used to gain insight into conservation, structural and economic factors influencing the sustainability and profitability of fisheries.

STECF stresses that careful interpretation of the proposed indicators is required, giving consideration to the following issues:

- The indicators should always be looked at in combination:
    - While it is clear the biological indicators show the level of under/over exploitation of the fisheries resource, they give no information about the economic sustainability of the fishing businesses.
    - Economic indicators, when applied in the short term, do not give good information about the sustainability of the exploitation rates
    - For example, economic performance, measured in terms of Return on Investment or Gross Value Added, may be good but be reliant upon levels of catches that exceed target levels, due to poor management and/or enforcement. Conversely, economic performance may be poor even though catches do not exceed target levels. The significance of the management system in place must be stressed here.
- The indicators do not by themselves provide any solution or way forward. The indicators may give an indication of technical or economic overcapacity, but further analysis would be needed to reveal the causes for this. Thus STECF endorses the

[1] In the TOR and the report the terms fishing opportunities, exploitation and fish stocks are used to address the question of balance. STECF stresses that the question of balance should be related to fishing opportunities.

recommendation made by the subgroup that MS should attempt to identify the factors causing any major annual changes or strong multi-annual trends in the indicators as part of their reporting requirements.

- The evaluation by means of a simple traffic light system is generally recognized by STECF as a useful, simple instrument to interpret each balance indicator individually and collectively. However, target reference points have still to be properly defined for most indicators, so evaluation of current results may prove difficult. Moreover, these reference points will also depend to a large extent on the management objectives, and will thus be hard to define.

STECF has the following specific comments on the use of the indicators:

F/Ft:
In case of multi-species multi-gear fisheries this indicator might be very hard to estimate, since for many species, no agreed Ft values are available yet. Thus, there is still a lot of work to be done to estimate Ftargets for many stocks.
STECF notes that the F indicator only is meaningful if a target F is defined for the segment for which the indicator is calculated. An 'F' indicator calculated for a Member State as a whole reflects whether the Member State's fishing vessels in total are generating a fishing mortality that is above or below the target fishing mortality allocated to that Member State. A partitioning to individual fleet segments as proposed by the working group requires that the target fishing mortality for the Member State is allocated to the fleet segments and the indicator for a segment is calculated as the fishing mortality generated by the segment divided by the target fishing mortality allocated to the segment. The STECF notes that the figures given in section 8 (calculation method is described in table 7.1 row 14) of the Group's report are not calculated in accordance with this method and should be revised.

Current/Break even revenue

There seem to be inconsistencies in the definition of this indicator in this report and the report from the previous working group (SGRST-SGECA-07-05). Therefore, the definition is not clear and interpretation of the results might be misleading. STECF recommends that it should be clearly defined which costs items should be included in this indicator. STECF proposes that capital costs should be excluded. Thus, this indicator is an indication of the short term profitability of the fishery.

ROI

Calculating and evaluating return to capital or Return on Investment (ROI) as an indicator requires some care. Calculation depends upon estimation of the value of physical capital employed in the fishery and hence on the methodology used in order to do this. Evaluating the indicator then depends upon assumptions about interest rates and hence the opportunity cost of capital (which should be excluded from the calculation of the indicator).

STECF notes that the harmonised approach proposed in the new DCR to estimating the capital value of fishing vessels and the opportunity costs of this capital should help here. Nevertheless caution should be used in interpreting this indicator when making comparisons between comparing MS.

STECF Recommendations

STECF recommends the Commission should clarify what policy objectives the indicators are intended to serve. For instance, are they designed to identify failings in current fisheries management and enforcement or are they intended to lead to a new approach of capacity/effort management? Future STECF actions within this issue would benefit from this clarification.

STECF strongly recommends that a common methodology to calculate the indicators should be agreed.

STECF considers that further investigation of the balance between capacity and fishing opportunities is needed. The working group proposed the use of bio-economic models to identify target levels for the different indicators and to better understand issues and causal factors influencing balance between fleet capacity and fishing opportunities.

STECF recommends that the July plenary should consider future steps, based on the literature review that is currently being undertaken, the two reports produced by the WG and the annual reports on the state of Member State fishing fleets. With these documents available, problems and concerns can be identified and included in future work.

STECF recommends that MSs include in their annual reports, absolute values and time trends of all indicators reported, in order to present a more complete picture, which could aid understanding of any issues leading to an undesirable imbalance between fleet capacity and fishing opportunity.

SGECA/SGRST-08-01 WORKING GROUP REPORT ON: BALANCE BETWEEN FISHING CAPACITY AND RESOURCES (PART II)

Brussels, 19-22 February 2008

This report does not necessarily reflect the view of the European Commission and in no way anticipates the Commission's future policy in this area

4. INTRODUCTION

4.1. Terms of reference

The SGRST-SGECA working group is asked to:

1. Undertake a literature review concerned with assessing overcapacity in European fisheries.[2] This task will be frontloaded and will be presented at the start of the meeting.

2. Further study which biological/technical indicators should be recommended to assess the balance question. The biological indicators so far retained by the previous working group (SGECA-SGRST 07-05[3]) are: Ratio between current and target fishing mortality, Catch per unit of effort, Ratio between catch and biomass. Since the balance between capacity and exploitation is to be assessed at national level, these indicators should ideally be fleet and country specific.

a) Biological data are available at Community (region) level and – at least for fisheries shared among Member States, not at Member States level. The working group is requested to advise ways of addressing this issue. One avenue addressed in the report of the previous working group (p. 7) is to look at MS quotas agreed at Community level where those are restricting in nature, i.e. are being (almost) exhausted before the end of the season or even overshot, and representing a predominant interest of the fleet concerned. Examining the quota utilisation rates by fleets might show a trend over time. A further trend might be established by the "regional view" coming from e.g. a targeted fishing mortality in stocks concerned, in particular when these are not subject to the TAC and quota system;

b) STECF summer 2007 plenary gave a list of indicators that might be considered for the desired simple approach to expressing the balance. Among them was the capacity utilisation rate expressed in real fishing days/maximum possible fishing days. The previous working group explored this indicator and discussed the lack of individual vessel data from DCR calls, and the problem of comparing vessel behaviour within not fully homogenous fleet segments. The working group is requested to finalise this assessment.

3. Draft guidelines for practical steps to improve the reporting on the balance between fishing capacity and fishing opportunities by Member States, based on the preference list of "balance-

[2] In particular, but not necessarily limited to, reviewing SEC (2003) 74 "Report of the SGBRE-STECF Expert Working Group on Investigating the Scientific Basis for a follow up to the fourth generation of Multi-annual Guidance Programme (MAGP IV)"; SEC (2003) 73 "Report of the SGBRE-STECF Expert Working Group on Fleet Dynamics"; SEC (2004) 1710 "The Potential Economic Impact on Selected Fishing Fleet Segments of TACs Proposed by ACFM for 2005 (EIAA-model calculations); Report of the Scientific, Technical and Economic Committee for Fisheries (STECF), Subgroup on Economic Assessment (SGECA) (Brussels 27-29 October 2004). Commission Staff Working Paper, Brussels, 23.12.2004; SEC (2004) 1024 "18th Report of the Scientific, Technical and Economic Committee for Fisheries" 29 March – 2 April 2004 (Chapter 5 and Annex II "Organisation of the future economic advice"); SEC (2006), Report of The Joint SGECA - SGRST sub-group meeting on bio-economic modelling. Ispra 4-6 October 2005 and 7 – 9 March 2006. Commission Staff Working Paper.

[3] See document centre JRC.

indicators" already identified by the SGECA-SGRST working group 07-05[4] and conclusions on point 2 above. The indicators so far identified by the previous working group are:

- Economic indicators: Return on investment, Break-even revenue/current revenue;
- Biological indicators: Ratio between current and target fishing mortality, Catch per Unit of effort, Ratio between catch and biomass,
- Social indicators: Gross value added, evaluation of crew wages

The guidelines should provide the following:

a) for each indicator

- A short discussion of each indicator, in particular its strengths and weaknesses (concerning the balance question in general and usability in different fisheries)
- The data requirements and calculation method
- a recommended minimum time series allowing for building stabilised results
- Benchmarks or reference points guiding on the assessment of balance.

b) for the discussion and conclusions that might be derived from the application of the indicators:

- How to reconcile opposing information of any sub-set of the indicators, for example a positive short-term economic trend versus a negative long-term biological trend
- How to relate indicators with each other in a multi-species/multi-fleet situation, i.e. that each fleet exploits several stocks and each stock is exploited by several fleets. In particular, give guidance on how to relate F*msy* to catch composition analysis of fleet segments which have mixed catches including stocks for which F*msy* is not known
- Address the consequences of a varying time span to which indicators are applied. Results could vary depending on whether the time perspective is considered to be short run or long run. The consequences of this in relation to the indicators must be addressed.
- STECF November 2007 plenary noted that economic, as opposed to physical/technical, measures of output capacity depend upon prices. The working group should consider recommending a "costs and prices test" in the analysis of economic indicators, i.e. a qualitative analysis to what extent cost increases or price per kilo reductions/lack of demand have affected the economic balance, rather than the availability of resources.

4. Apply indicators retained to certain fisheries/fleet segments, and provide a short discussion of the results obtained. Primarily, data from the DCR call of January 2008 shall be used. The absence of biological data from this exercise, where relevant (e.g. biomass, catches that include discards), shall be addressed by referring to other available sources (ICES, RFMOs). About 5 fisheries should be selected. The chairman shall propose a selection in advance of the meeting, having regard to the recommendations made by SGRST-SGECA 07-05. The

[4] See document centre JRC.

selection shall be finally fixed in view of the data quality of data coming from the DCR January call.

5. Provide orientation for follow-up work to be done for improving the indicators. Currently, a first set of simple indicators has been developed. Based on this set the outlook of a future, perhaps more sophisticated method can be devised, be it an improvement of the indicators themselves, their relation with each other or the application of indicators to data sets (e.g. trip-related economic data). The discussion on this point shall take into consideration issues such as mixed fisheries, the outline of the fisheries-approach in the new DCR 2008, and an approach to balancing biological, economic and societal indicators.

4.2. Participants

Name	Address	Telephone no.	email
STECF members			
Döring, Ralf	University of Greifswald Department of Landscape Economics Grimmer Str. 88 D-17487 Greifswald, Germany	+49 3834 864127	doering@uni-greifswald.de
Prelezzo, Raul	AZTI - Tecnalia / Unidad de Investigación Marina Txatxarramendi Ugartea z/g 48395 Sukarrieta (Bizkaia), Spain	+34 94 6029400	rprellezo@suk.azti.es
van Oostenbrugge, Hans	Landbouw Economish Instituut-LEI, Fisheries Section, Burg. Patijnlaan 19 2502 LS The Hague The Netherlands	+31 70 3358239	Hans.vanOostenbrugge@wur.nl
Invited experts			
Anderson, John (chair)	Sea Fish Industry Authority 18 Logie Mill Logie Green Road Edinburgh EH7 5RL, UK	+44 131 524 8662	John_Anderson@seafish.co.uk
Calvo Cristina	University of Vigo. Dept. of Fisheries Economics Lagoas Marcosende Vigo, Spain	+34 986814072	cristina.calvo@uvigo.es
Holmes Steven	Fisheries Research Services 375 Victoria Road Aberdeen, AB11 9DB, UK	+44 1224 295507	s.holmes@marlab.ac.uk
Iriondo Ane	AZTI - Tecnalia / Unidad de Investigación Marina Txatxarramendi Ugartea z/g 48395 Sukarrieta (Bizkaia), Spain	+34 946 029 400	airiondo@suk.azti.es
Sørensen Lars-Christian	Institute of Food and Resource Economics, FOI Rolighedsvej 25 1958 Frederiksberg C, Denmark	+45 35 33 68 00	lcs@foi.dk
JRC experts			
Hoelker Franz	Joint Research Centre JRC	+39 0332786448	franz.hoelker@jrc.it
European Commission			
Lindemann Jan Henning	DG FISHERIES AND MARITIME AFFAIRS	+32 229 87086	Jan-Henning.LINDEMANN@ec.europa.eu
Hoelker Franz	Joint Research Centre JRC, STECF secretariat	+39 0332786448	franz.hoelker@jrc.it
Calvo Angel	DG FISHERIES AND MARITIME AFFAIRS	+32 229 93630	Angel-Andres.CALVO-SANTOS@ec.europa.eu
Lindebo, Erik	DG FISHERIES AND MARITIME AFFAIRS	+32 229 94149	Erik.lindebo@ec.europa.eu

5. ToR 1.

Undertake a literature review concerned with assessing overcapacity in European fisheries. This task will be frontloaded and will be presented at the start of the meeting

The literature review is still to be undertaken**.**

6. ToR 2.

Further study which biological/technical indicators should be recommended to assess the balance question. The biological indicators so far retained by the previous working group (SGECA-SGRST 07-05[5]) are: Ratio between current and target fishing mortality, Catch per unit of effort, Ratio between catch and biomass. Since the balance between capacity and exploitation is to be assessed at national level, these indicators should ideally be fleet and country specific.

a) Biological data are available at Community (region) level and – at least for fisheries shared among Member States -, not at Member States level. The working group is requested to advise ways of addressing this issue. One avenue addressed in the report of the previous working group (p. 7) is to look at MS quotas agreed at Community level where those are restricting in nature, i.e. are being (almost) exhausted before the end of the season or even overshot, and representing a predominant interest of the fleet concerned. Examining the quota utilisation rates by fleets might show a trend over time. A further trend might be established by the "regional view" coming from e.g. a targeted fishing mortality in stocks concerned, in particular when these are not subject to the TAC and quota system;

The working group concluded that all three biological indicators proposed during SGECA-SGRST-07-05 potentially have a role to play in assessing the 'balance' question. Their use largely depends on the availability of data. The indicators should be regarded as belonging to a strict hierarchy such that:

- The 'F indicator' (ratio between current and target fishing mortality (F/Ft)) should always be applied in the first instance. This is the preferred biological indicator.
- The 'H indicator' (ratio between catch and biomass, or 'Harvest Ratio') should be applied when information to calculate the 'F indicator' is not available, but information on stock biomass is available.
- The 'CPUE indicator' (Catch per unit of effort) should only be used for those species when calculation of both the 'F' and 'H' indicators is not possible.

A particular advantage of the 'F indicator' is that it accommodates differing sustainable exploitation rates between species i.e. the optimal exploitation rate for each species has already been determined and is expressed as Ft. The F/Ft ratio is dimensionless and facilitates comparisons or combinations across species. To produce values that are relatively straightforward to interpret requires;

- A fish stock subject to a full stock assessment such that current age averaged fishing mortality (F) is known.
- A target value for that mortality (Ft) is available.
- The stock is subject to total allowable catch (TAC) rules and national quotas.

The ratio between current and target fishing mortality (F/Ft) can be applied at MS level by following a two step approach:

[5] See document centre JRC.

1. Distribute F values according to the ratio of a particular fleet segment's catch to the total catch calculated in the stock assessment.
2. Distribute target F values according to relative stability quota shares (including any modifications in habitual quota exchanges).

The WG considered it best to distribute Ft values across MS according to quota share rather than across fleet segments according to fleet track records. Under EU relative stability rules, national quotas are time invariant, and as such represent fixed limits to the proportion of target fishing mortality that can be contributed by individual nations. In a particular MS it may be possible for the share of catch of a particular species to vary between fleet segments over time. Therefore, the F/Ft values need to be considered at both fleet segment level and MS level. The relative F/Ft values for individual fleet segments in each MS give an indication of the relative biological impact of each fleet segment on the resource. In addition, if the F/Ft value for a fleet segment is greater than one, it indicates that the fleet segment is catching more fish (of at least one species) than would be expected from the entire national fleet. If several fleet segments of a MS target the same species, the summation of F/ F_t values for individual species across fleets will show whether national catches are consistent with long term stock management goals. A summation of the composite (cross-species) indicators will not necessarily reflect the situation for individual species.

Unfortunately, the data required to calculate the 'F indicator' is only available for a restricted number of species, (referred to as 'assessed' species). It is not necessary to have 100% of a fleet segment's catch consisting of assessed species; but the 'species averaged' F indicator becomes less meaningful as the percentage of fleet segment catch represented by the assessed species declines. The WG therefore regard the percentage of fleet segment catch represented by assessed species as an important complementary statistic for this indicator.

For some species, e.g. Nephrops, fishing mortalities at age are not possible to assess, but estimates of stock biomass are available. In this situation, the catch/biomass ratio (*or harvest ratio*) can be interpreted as a proxy for the exploitation rate. If existing studies have indicated an optimal value of this 'harvest ratio' then the indicator can be treated in much the same manner as the 'F indicator' and may be labelled H/Ht where 'H' represents harvest ratio. For species where no conclusions have been reached regarding a sustainable harvest ratio, comparisons of harvest ratios across species are not possible. The implications of given values of H are likely to be species specific due to different life history traits and reproductive potential. Until a value of Ht is defined, use of the indicator is restricted to considering trends through time. A steadily increasing harvest ratio with a simultaneously decreasing measure of biomass can potentially indicate over-exploitation of the stock. However, the same trends would also be experienced in a developing fishery that was harvesting the resource at sustainable levels. If values of the harvest ratios are mean standardized with respect to a common time period then the time trends reflect proportional changes relative to a mean value. Such time series are comparable across species, allowing the possibility of constructing a single time series whose values are the weighted average of values for the component species.

For both the F and H indicators, a species aggregated value provides a single indicator value for each fleet segment similar to those reported for the technical, economic and social indicators, however, the impact of a particular fleet segment on an individual stock is lost. If the effect on an individual species is sought then the indicator must be calculated separately for that species.

Partitioning of F and H is based on the assumption that fleet segments from each MS conduct all (or a large majority) of their activity within the area defined by the stock assessment. If a fleet segment takes a proportion of its catch from a second stock area then values of F or H need to be partitioned, again according to the proportion of landings and discards relating to a given stock assessment area. Such data should be available in each MS.

If fishing patterns remain relatively constant, a time series of CPUE should reflect changes in stock abundance. However, changes in stock abundance can be due to effects other than changes in fishing effort, and in isolation a given value of CPUE does not indicate whether a stock is being exploited sustainably or not. Under these circumstances it is possible to consider trends in time only (and if time series are mean standardized it is again possible to combine data for different species into a single series). A consistent decline in CPUE over a prolonged period could be interpreted as a stock under stress. Changes in fleet fishing practices (e.g. changes in fishing grounds or increased technical efficiency) could also cause changes in CPUE for a given species however, and if this indicator is used, it is desirable to combine results with expert knowledge of developments in fishing practices by vessels operating in the associated fleet segments. Data required for the calculation of CPUE for the CPUE measure are provided under the current Data Collection Regulation (DCR) and as such the calculation is naturally specific to fleet segments. If landings estimates only are provided then the indicator measures landings per unit effort (LPUE) rather than CPUE, and a time series for a given species might give a misleading picture if discard practices change.

Most fleet segments catch a range of species. The 'F' indicator can be calculated for some, the 'H' indicator for others and H or CPUE values only for the remainder. The WG could not see a way of combining these indicators further. If the question of the balance between capacity and resources is restricted to species of commercial importance it is possible the F indicator can be calculated for all species considered.

b) STECF summer 2007 plenary gave a list of indicators that might be considered for the desired simple approach to expressing the balance. Among them was the capacity utilisation rate expressed in real fishing days/maximum possible fishing days. The previous working group explored this indicator and discussed the lack of individual vessel data from DCR calls, and the problem of comparing vessel behaviour within not fully homogenous fleet segments. The working group is requested to finalise this assessment.

The WG agreed to establish a technical indicator to describe the 'capacity utilisation' rate. This indicator is a simple measure of potential capacity in a given fleet segment, and the utilisation of that potential capacity, in line with STECF plenary recommendations. Lack of individual vessel data from DCR calls should not be a significant issue as each MS should have sufficient access to effort and capacity data on their fishing fleet. In any case, the WG successfully used aggregated data supplied at the meeting through the DCR data call (Days at sea, kW, GT data) to formulate variations of the 'capacity utilisation' indicator.

Two main issues were identified; a) establishing the maximum possible days at sea for vessels in each fleet segment, and b) understanding the impact of vessel heterogeneity existing in the DCR fleet segments.

For a) the approach involves formulating a ratio consisting of the days at sea spent by a vessel[6] and the total number of days at sea that the vessel could realistically spend in any given year (without considering effort restrictions). Several methods to establish the total possible fishing days per vessel were discussed. The preferred approach was to take the maximum number of days recorded by a vessel in a fleet segment since records began in each of the MS, and use this as a proxy for the maximum possible days at sea (technically and socially) for vessels operating in that segment.

For b), under the current DCR, fleet segment definitions are based on the physical characteristics of vessels and their fishing gears. DCR fleet segments do not take into account the different metiers that vessels' operate in, or the contents of the vessels' catch, which leads to the issue of non-homogeneity of vessels in certain fleet segments (this is more of an issue in some fleet segments than in others). However, under the reform DCR it should be possible to calculate capacity utilisation by metier. If the indicators were to be calculated at metier level, we could claim there is a truly homogenous fleet segment, but this would escalate the amount of analysis required. Further, although it would be possible to report this technical indicator by metier, the maximum no. of sea days would be extremely hard to define at metier level and would depend on the economic circumstances of the fleet and the economic opportunities to be gained from participating in other metiers.

The 'capacity utilisation' technical indicator is discussed further in section 7.8.

[6] Days at Sea = days absent from port, not total days where fishing gears are employed.

7. TOR 3A)

Draft guidelines for practical steps to improve the reporting on the balance between fishing capacity and fishing opportunities by Member States, based on the preference list of "balance-indicators" already identified by the SGECA-SGRST working group 07-05[7] and conclusions on point 2 above. The indicators so far identified by the previous working group are:

- *Economic indicators: Return on investment, Break-even revenue/current revenue;*
- *Biological indicators: Ratio between current and target fishing mortality, Catch per Unit of effort, Ratio between catch and biomass,*
- *Social indicators: Gross value added, evaluation of crew wages*
- *Technical indicators: Capacity Utilisation*

The following section outlines the calculations, theoretical underpinnings; and strengths and weaknesses of each balance indicator recommended as 'balance' indicators during SGECA-SGRST 0705, and agreed by the SGECA-SGRST 0801 WG.

7.1. Return on Investment (ROI)

ROI measures the economic performance of a fleet segment. The ROI calculation is defined as follows:

$$ROI = (Net\ profit + Opportunity\ cost\ of\ capital) / Investment$$

First of all, data on the level of investment is required. Some MS report insurance value of the vessel as a measure of invested capital, others report the replacement or historical value. It is often assumed that this figure reflects the total capital invested in the vessel business. Intangible investments such as fishing rights should also be included in the calculation, when applicable. Large differences in the amount of capital invested are likely to exist between MS, in particular between those MS who have tradable markets in quota and licences and those who do not. A recent EU wide study[8] focussed on defining a common methodology for the calculation of capital invested in tangible assets and capital costs (Perpetual Inventory Method (PIM)), and it is recommended that this methodology is followed by MS when producing ROI estimates.

Net profit is also required to calculate ROI, and net profit is calculated by subtracting variable, fixed and capital costs from income. Consequently, data on these variables are also needed for the ROI calculation, all of which are/will be collected as parameters in the current and revised DCR.

[7] See document centre JRC.

[8] Evaluation of the capital value, investments and capital costs in the fishery sector No FISH/2005/03

The Opportunity cost of capital also needs to be incorporated into the ROI calculation. The current DCR provides only a 'Capital Costs' parameter, and while this should include the opportunity cost of capital and depreciation, there again exists differences between MS i.e. some MS report 'depreciation and interest' instead of depreciation and opportunity costs. This may be because of the lack of explanation given in the current DCR. The WG believes that this issue has been rectified under the reform DCR, so it should not be a problem for MS to perform the calculations once the reform DCR is in place. One potential issue involves double counting the opportunity cost when calculating capital costs. The opportunity cost should be the difference between the alternative possible rate of return (e.g. investment in government bonds) and the current rate of return from the fishing operation.

Reference points are needed in order to interpret the indicator effectively. For instance the *theoretical risk free rate*[9] could be used as a target reference point (TRP). When ROI is lower than the TRP, investment elsewhere is more profitable and it would be inefficient to invest in that particular fleet segment. In a risky business such as fisheries, one would expect ROI to be higher than risk free rates. Risk free rates (government bonds) are now used to estimate opportunity costs. Therefore, stating that the ROI must be higher than the risk free rate is the same as stating that net profit should be larger than zero.

The main weakness of ROI as a 'balance' indicator are that a reasonable reference point for 'balance' is needed; and additionally the sustainability of the resource is not indicated via ROI, as it is purely an economic indicator. One would expect ROI in fisheries to be higher than risk free rates but if there are considerable positive externalities from fisheries e.g. benefits to public health, politicians and fisheries managers may accept lower or even negative returns.

ROI is a long-term economic indicator and consequently the applied time series must correspond to the long-term economic considerations of vessel owners in the fleet segment. As a result, the recommended minimum time series should be five years and preferably more, reflecting the investment outlook of the fishermen.

7.2. Current revenue / Break-Even Point Ratio (CR /BEP)

The ratio between current revenue and the BEP indicates the degree to which a particular fleet segment is economically viable, giving a useful indication of 'balance' from an economic perspective. When the ratio is less than one, cash flow is insufficient to cover fixed costs, indicating an unviable fishery. If the ratio is one or greater than one, current cash flow equals or surpasses current fixed costs indicating an economically viable fishery.

[9] The *"theoretical risk free rate"*, for instance the long-term Treasury bond rate, has been suggested as an applicable reference point [SGECA-SGRST report on subgroup meeting on bio-economic modelling, 2006]. On the face of it, the suggestion seems reasonable but other reference points may be equally appropriate. Other sectors may prove considerably more profitable than an investment in a fishery, which inevitably increases an applied reference point. Furthermore, the fluctuations and inherent dynamics of fish stocks may increase uncertainty and consequently the applied reference point for ROI. From a socio-economic point of view, a sensible reference may be lower than the long-term Treasury bond rate- even lower than zero. This is the case when considerable positive externalities from the fishery are present (for instance positive effects on public health, amenity values etc.). In summary, the theoretical risk free rate provides a sound general reference point whereas the target reference points are case-specific. The WG recommends that if it is being left to MS to define specific target reference points, the MS needs to justify that reference point over alternatives.

The recommended time series for this indicator is three years or more, taking into account both the short and long term behaviour of fishermen.

An obvious weakness of the CR/BEP ratio as a balance indicator is that the state of the resource is not (directly) revealed (this is the same for all economic 'balance' indicators). For example, although cash flow may be enough to cover fixed costs, the resource could still be heavily overexploited, both economically (if it was possible to cover *more* than the fixed costs and in that way collect rents) and biologically.

The BEP[10] is a long-term indicator but is also usable from a short-term perspective. In the short-run, fishermen will stay in the fishery if their Gross Cash Flow (GCF) is positive. In the long-run however, fixed costs must be covered i.e. BEP revenue or more is needed[11]. Consequently, the ratio between current revenue and BEP must be greater than one in the long-run, otherwise economic viability is not present. However, in the short-run decreases in the ratio indicates an economic worsening of the fishery i.e. an increasing gap between current cash flow and fixed costs.

The BEP *"shows the required landings value to cover fixed costs, given the contribution to margin per unit landings value[12]"* The BEP is calculated as:

Break-even Point = Current Fixed Costs / (Current Cash Flow/Current Revenue)

or

Break-even Point = Current Fixed Costs / (1-[Current variable costs/Current Revenue])

The break even revenue calculation implicitly assumes that the ratio between *Current Cash Flow* and *Current Revenue* is constant[13]. Consequently, the assumed returns to scale are neither increasing nor decreasing but remain constant irrespective of the level of activity.

Current fixed costs may include a fixed cost of access to the resource i.e. in limited entry fisheries[14]. This induces higher break-even revenues than in cases where the fixed costs include the fixed costs of the vessel only.

Remuneration of the fish stock i.e. resource rent[15] is possible to include in the fixed costs if estimates are available.

---

[10] In a previous report on the MAGP programmes10, the applicability of the break-even method was assessed. The method "is considered operational on a wider EU-level and sufficiently robust, although not theoretically optimal." Additionally, "the method can handle many species subject to different yield curves by weighting them together using prices." It is furthermore mentioned how the break-even method "could be applied to the input side as well…by changing the fishing capacity in terms of potential number of fishing days (number of vessels times vessel fishing days) proportionally with the required change in output."

[11] [SEC (2003) 74]

[12] SGECA-SGRST report on subgroup meeting on bio-economic modelling, 2006

[13] See [SEC (2003) 74] the mentioned assumption is described as "…the assumption that GCF per unit revenue is known."

[14] In the UK and Netherlands point of view, access to limited entry fisheries can take place by either purchasing or leasing fishing rights. With purchase, this would be a capital investment, and with leasing it would be a variable cost. In Denmark ITQs and licenses are only included in the firms' financial accounts if they have either sold or bought them.

[15] By *resource rent* we mean the net return after all costs of production. Rents may be collected by the supplier of quotas – depending on how close to perfect competition the quota market is

7.3. Gross Value Added (GVA)

In national accounts, GVA is defined as gross output minus intermediate consumption. Simplicity is the strong point of GVA; it is the sum of contributions from the factors of production (i.e. the resource, real capital and labour). When data is available, GVA is simple to calculate and gives an indication of whether rents are extracted from the resource or not, by comparing each of the contributions from the factors of production to contributions from similar factors of production in other sectors. One way to do this could be to compare GVA per Full Time Employee (FTE) to GDP per Capita.

Gross Value Added (GVA) is calculated as:

GVA = Depreciation costs + Interest + Crew share + Net profit

or

GVA = Gross revenues – All expenses (excl. labour remuneration, instalments and interest payments on loans)

One drawback when using GVA as a balance indicator is that the size of the contributions from production factors is not assessed. This means that the size of crew share, interest paid etc. are not evaluated, it is only the sum of these that is reported. Therefore, caution is crucial when assessing the level of GVA. Another drawback of the use of GVA is that no evaluation of the state of the resource is provided. As a result, GVA can be positive and supply considerable crew wages and profits when the status of the fish stock/fishery resource is simultaneously in a poor, unsustainable state. Due to significant variation over time in the variables constituting GVA, a time series of more than 5 years is advisable in order to assess the relative development in the indicator. As mentioned earlier, GVA is the sum of income received by the owners of the production factors. The appropriate level of these different types of income is case and country specific and consequently determining a universal target reference point is not feasible.

7.4. Average wage per FTE

Average crew wages per FTE is calculated as:

Crew share / FTE

As evident from the calculation, wages and turnover are needed as well as the number of full-time employees.

The comparability of “crew wage per FTE” with wages rates in other sectors is an attractive strength of this indicator when considering the ‘balance’ question. In addition, the indicator can supplement the GVA indicator to facilitate an assessment of the remuneration of labour. A potential downside when using crew share per FTE is that the structure of the workforce is not made clear. For instance, a fishery engaging mainly part-time fishermen may or may not be socially or economically optimal, depending on the local situation.

Even with a short time series, crew share per FTE is a useful indicator. Employees need a competitive wage and (theoretically) will leave the fishery if this is not obtained. Using average wages (and minimum wages) in similar areas (jobs with similar risk, education-demands etc.) are intuitively sensible when assessing crew share per FTE. It may be desirable to classify crew wages under the minimum wage of the MS as 'red', up to the average wage 'yellow' and anything over the average wage as 'green'. Again, average wages vary between countries, fisheries and/or fleet segments and consequently no universal target reference point has been defined at this stage.

7.5. The 'F' indicator (Fishing Mortality Ratio)

Of the biological indicators considered for the 'balance' question, the 'F' indicator (F/Ft ratio) is the preferred choice. One particular advantage over the 'H' and 'CPUE' indicators is that the 'F' indicator accommodates differences between species in terms of sustainable exploitation rates, i.e. the optimal exploitation rate for each species has already been determined and is expressed as Ft. The F/Ft ratio is dimensionless and facilitates comparisons or combinations across species. This in turn allows calculation of a single F indicator value for fleet segments catching multiple species. There are, however, problems associated with such a composite value which are discussed at the end of this section. A problem may result with the indicator averaged across species if a fleet with large overall catches has a high F/Ft value for one species (low values for other species) and that one species represents a small proportion of the catch of the fleet. This illustrates the point that this indicator treats the biological issue of balance from a fleet perspective, whereas from a stock perspective, the picture might look very differently. These two perspectives can be compared when F indicators are calculated both at fleet and species level.

An obvious limitation of this indicator is that not all species are subject to stock assessments. For the current exercise a weighted indicator value for any of six species (cod, haddock, whiting, plaice, sole and saithe) contained in the catch was used.

7.5.1. Single Species F Indicator

Time series of overall fishing mortality on the stock (F) is taken from the latest ICES advice. Partial F values for fleet segments are calculated by a simple comparison of catch weights, i.e.

$$F_{fl,s} = F_s * \frac{C_{fl,s}}{C_s},$$

where C_s is the total catch estimated by ICES for the stock and C_{fl} is the catch of the fleet segment. In the data provided at the meeting, landings data was available rather than catch data. To prevent a downward bias in partial F values, fleet landings values were converted to fleet catch values by assuming the same ratio of discards to landings for all fleet segments. The ratio of discards to landings from the ICES assessment was then used to adjust the fleet landings values, i.e.

$$C_{fl,s} = L_{fl,s} + L_{fl,s} * \frac{D_s}{L_s},$$

where D_s and L_s are the discards and the landings at stock level respectively.

F target values were defined according to the following hierarchy.

- Agreed target values according to EU – Norway agreements or EU management plans
- F*msy* values
- F*max* values

In cases where there is more than one F target value for the same species in the same area covered by a single fleet segment definition e.g. Baltic cod, the lower value was chosen consistent with the precautionary principle.

The F target has been apportioned according to the relative stability quota shares for each species. The reasoning can be illustrated by use of the following table of hypothetical nations and fleets.

Table 7.1 Hypothetical nations and fleet segments showing the possibilities for calculation of the 'F' indicator[16].

Row No.	Description	Total	MS1, FL1	MS2 total	MS2, FL1	MS2, FL2
1	EU catches	65	**50**	**15**	**10**	**5**
2	ICES catches	**80**				
3	ICES F	**0.7**				
4	F using EU data	0.57	**0.44**	**0.13**	**0.09**	**0.04**
5	Stock target F (Ft)	**0.2**				
6	F/Ft (no split of Ft)	3.5	2.2	0.65	0.45	0.2
7	Fleet Ft split according to share of EU catches	0.2	0.15	0.05	0.03	0.02
8	F/Ft	3.5	2.84	2.84	2.84	2.84
9	Stock Ft adjusted for EU/ICES catches	0.16				
10	Fleet Ft split according to share of EU catches	0.163	0.125	0.038	0.025	0.013
11	F/Ft	3.5	3.5	3.5	3.5	3.5
12	Quota	100	50	50	--	--
13	Ft split according to national quota	0.2	**0.1**	**0.1**	**0.1**	**0.1**
14	F/Ft	3.5	**4.375**	**1.313**	**0.875**	**0.438**
15	Quota utilisation	0.65	1	0.3	0.2	0.1
16	Ft split according to national quota and relative quota uptake within nations	0.2	0.1	0.1	0.067	0.033
17	**F/Ft**	**3.5**	**4.375**	**1.313**	**1.313**	**1.313**

Table 7.1 gives a hypothetical example for the calculation of the F indicator. Two MS are considered, one with a single fleet and the second with two fleets. They have an equal quota share for a particular species but the uptake of quota share is different between the two MS. In MS2 quota uptake is also different between its constituent fleets. If the Ft value is not partitioned, F/Ft ratios for nations and fleets are always lower than for the stock as a whole (row 6). If the Ft value is partitioned according to the share of total EU catches taken by each fleet, all fleets receive the same F/Ft ratio (rows 8 and 11) and in the case where the Ft value has been adjusted (for differences between total catch recorded for the DCR and ICES estimates used in the stock assessment) all fleets receive the same ratio as that between stock

[16] Values corresponding to the option chosen by the working group are shown in bold.

F and Ft (rows 9 and 11). Additionally, calculations are to be conducted by MS. To work with an adjusted Ft value or (fleet catch) / (EU catch) ratios the total catch recorded for the DCR must be known before the national reports are produced. If the Ft value is partitioned according to national quotas, differences in the impact of different MS on the species can be identified, as can differences in the impact of fleet segments within a given MS, (rows 13 and 14). No prior knowledge of total catches reported to the EU is necessary. When there is more than a single fleet in one MS it becomes necessary to consider the F/Ft ratio at both MS and fleet level to prevent a falsely optimistic picture being produced at fleet level. If relatively stable fleet level quotas are applied in a MS, these can be used to partition the Ft value down to fleet level. Partitioning Ft values in a MS according to the recorded share of catch between fleets leads to the problem of all fleets within the MS receiving the same F/Ft ratio, (row 17).

The partitioning of target F value performed during the meeting did not take account of the habitual quota exchanges between MS. This lead to the situation where a MS with a high quota share under relative stability rules but which gives away a significant part of this quota (and only exerts modest effort on the species) is seen to have a very low indicator value. Conversely, any MS who receives quotas from quota exchanges will have inflated indicator values (see Northern Hake case study). It is recommended that MS take into account quota shares after habitual quota exchanges in future when calculating F targets.

7.5.2. Multi-species F indicator

Fleet segments often catch several species whose F/Ft values can be calculated. To arrive at a single indicator for the fleet segment the individual F/Ft values are combined as follows;

$$\overline{(F/F_t)}_{fl} = \frac{1}{\sum_s C_{fl,s}} \sum_s (F/F_t)_{fl,s} * C_{fl,s}$$

Where $\overline{(F/F_t)}_{fl}$ is the averaged value; and C_s is the catch of a species. Only species where values of F/Ft can be obtained are included in the calculation.

To put this indicator into context it is important to show the proportion of the fleet segment catch that is accounted for by species involved in calculating the indicator. Otherwise one or a number of species used to generate the indicator that constitute(s) a very low proportion of the total catch of a fleet segment could generate a high overall indicator value for that fleet segment when in fact absolute levels of the catch(s) are small.

Two problems exist with the composite indicator. Firstly the impact on an individual species may be overlooked if a fleet with large overall catches has a high F/Ft value for one species (low values for other species) and that one species represents a small proportion of the catch of the fleet. Secondly, if a MS contains more than one fleet segment the overall impact on a given species at MS level can be found by summing that species' F/Ft values across fleets (see Table 7.1). Species composite values of F/Ft do not allow the impact on individual species to be considered and the sum of individual fleet values has no real meaning. The species composite F indicator allows for a single biological indicator value per fleet as for technical, economic and social indicators but true understanding of a fleet segment's evolving impact on species is only possible from consideration of F/Ft values for individual species.

It is suggested a composite species indicator value <1 represents a sustainable fleet segment. Certainly a value >= 1 indicates one or more species where the fleet segment F value is greater then the partial Ft value assigned to the MS. Considering individual species, fleets within a MS take a sustainable catch if the sum of F/Ft values across fleets for that species is <= 1. A value > 1 suggests reducing catches of the species from one or more fleet segments (while fleet segment F/Ft values show relative contributions to the current mortality). Variations in stock recruitment can cause variability in stock assessments (variable total F values) that could in turn cause variability in this indicator. It is therefore considered important that a span of at least five years is used if producing time averaged results. If considering time series of results, data from all available years should be included.

If employing a traffic light system (see section 7.9.1), colours could be assigned according to[17]

- Red: Species composite value >= 1.
- Amber: Species composite value < 1 but F/Ft value for one or more component species > 1 either within fleet segment or when summed across MS fleets.
- Green: All species considered have F/Ft values <= 1 at MS level

7.6. The 'H' indicator (Harvest or Catch / Biomass Ratio)

For some species, e.g. North Sea Nephrops, fishing mortalities at age are not possible but estimates of stock biomass are available. The H indicator (*Harvest ratio or Catch/Biomass ratio*) can then be interpreted as a proxy for the exploitation rate. If studies have indicated an optimal value of this harvest ratio then the indicator can be treated in much the same manner as the 'F indicator' and may be labelled H/Ht where '*H*' represents harvest ratio.

Partial *H* values for fleet segments are calculated by a simple comparison of catch weights, i.e.

$$H_{fl,s} = H_s * \frac{C_{fl,s}}{C_s},$$

where *s* is species, C_s is the total catch estimated by ICES and C_{fl} is the catch of the fleet segment. Conversion of fleet segment landings to fleet segment catch can be performed in the same way as described in Section 7.5.1 if a member state is not able to make use of a fleet specific discard observer programme.

Target harvest ratios should come from a source that has been peer reviewed (including reports of ICES working groups). Ht values should be apportioned across fleets in the same way that Ft values are apportioned, i.e. according to quota share as modified by habitual quota swaps, (see section 7.5.1). If a fleet segment catches more than one species where it is possible to calculate H/Ht values, individual H/Ht values can be combined as follows:

$$\overline{(H/H_t)_{fl}} = \frac{1}{\sum_s C_{fl,s}} \sum_s (H/H_t)_{fl,s} * C_{fl,s}$$

[17] It is not necessary to consider values at MS level if a MS sets fleet specific quotas.

where $\overline{(H/H_t)_{fl}}$ is the averaged value and $C_{fl,s}$ is the fleet's catch of a species. Only species where values of H/Ht can be obtained (but values of F/Ft can not) are included in the calculation.

It might be possible on a species by species basis to determine threshold values by considering historical abundance i.e. a period when the stock was considered in good health and stable compared to a period when stock abundance was in steady decline. If a period exists where stock abundance shows steady increase, the catch/biomass ratios from this period can also be considered. The biomass estimates of the exploited stocks can be derived from any production model or from scientific survey indices. The biomass of the stock is apportioned across fleet segments using quota shares similar to the F indicator. Therefore the same issue concerning quota exchanges applies.

For species where no conclusions have been reached regarding a sustainable harvest ratio, comparisons of harvest ratios across species are not possible. This is because the implications of given values of *H* are likely to be species specific because of different life history traits and reproductive potential. Until a value of *Ht* is defined, use of the indicator is restricted to considering trends through time. A steadily increasing harvest ratio with a simultaneously decreasing measure of biomass can potentially indicate over-exploitation of the stock. However, the same trends would also be experienced in a developing fishery that was still harvesting the resource at sustainable levels.

If values of the harvest ratios are mean standardized with respect to a common time period then the time trends reflect proportional changes relative to a mean value. That is calculate $H_{ms,fl,s}$ such that

$$H_{ms,\,fl,\,s,\,y} = H_{fl,\,s,\,y} \Big/ \frac{\sum_{y} H_{fl,\,s,\,y}}{n}$$

where *y* is year and *n* is the number of years in the time series.

Such time series are comparable across species, allowing the possibility of constructing a single time series whose values are the weighted average of values for the component species, i.e.

$$\overline{H_{ms,\,y,\,fl}} = \frac{1}{\sum_{s} C_{fl,\,s,\,y}} \sum_{s} H_{ms,\,fl,\,s,\,y} * C_{fl,\,s,\,y}$$

where $\overline{H_{ms,\,y,\,fl}}$ is the averaged value and C_s is the catch of a species. Data must be available over the same number of years (for all species used) to form an averaged value and there is an upward bias in combined species time series (see section 7.1.7). If there are only a small number of species for which plotting a harvest ratio time series is possible and appropriate, then the working group considered the better option to plot mean standardised *H* values for individual species.

The catch/biomass ratio can be interpreted as a proxy for the exploitation rate, which is of primary interest. Ideally, the catch figure should include discards. The biomass estimates of the exploited stocks can be derived from any production model or from scientific survey indices. Trends in the catch/biomass ratio over time do allow conclusions about trends in the

exploitation state of a given stock and, in combination with trends in stock abundance, about the sustainability of the historic or future exploitation of the resource.

In the limited time available during the meeting it was not possible to determine threshold values for this indicator. The values are likely to be species specific because of different life history traits and reproductive potential. For this reason the indicator is less readily compared across species than the F/Ft indicator and a reason why it is considered less useful. It might be possible on a species by species basis to determine the threshold values by considering historical abundance i.e. a period when the stock was considered in good health and stable compared to a period when stock abundance was in steady decline. If a period exists where stock abundance shows steady increase, the catch/biomass ratios from this period can also be considered.

The biomass of the stock is apportioned using quota shares similar to the F indicator. Therefore the same issue concerning quota exchanges applies.

7.7. Catch per unit of effort (CPUE)

CPUE estimates can be interpreted as a relative index of stock abundance only and do not allow any direct conclusion of the exploitation state of the stocks, as changes in stock abundance can be due to many causes, not just those related to fishing activity.

If fishing patterns remain relatively constant, time series of CPUE should reflect changes in stock abundance. Changes in stock abundance, however, can be due to effects other than changes in fishing effort, and in isolation a given value of CPUE does not indicate whether a stock is being exploited sustainable. Under these circumstances it is only possible to consider trends in time and therefore CPUE should only be used if neither the 'F' nor 'H' indicators can be calculated.

If time series are mean standardized, it is again possible to combine data for different species into a single series. The composite CPUE index is a combination of the mean standardised values for the individual species weighted by their contribution to the fleet segment catch in that year and is illustrated in table 7.2 (where it is assumed the fleet catch only comprises two species).

Table 7.2 Composite CPUE index

	Species 1			**Species 2**			**Weighted average**
Year	**CPUE**	**Prop. in catch a)**	**Mn. Std. CPUE b)**	**CPUE**	**Prop. in catch c)**	**Mn. Std. CPUE d)**	**= a*b+c*d**
1	100	0.5	0.66	100	0.5	1.33	1.0
2	200	0.8	1.33	50	0.2	0.66	1.2

The problem with this approach is that changes in CPUE of one species relative to another go hand in hand with changes in the relative proportion of the catch. This tends to make the values of the weighted average larger, and the series is no longer centred on the value one. As

such, use of individual index values for individual years would be very problematic as we have lost an absolute reference level for comparison. However, if trends through time are considered, information can still be gained. Graphs can not be interpreted in the same way as those for an individual species (where values for individual years sit relative to the value of one) but a consistently falling CPUE could be interpreted as a stock or stocks under stress. If it is judged that a trend in the composite measure is present, the explanation can be sought by reference to the CPUE series for the component species. The alternative to a composite CPUE measure is to consider CPUE series for the individual species found in the catch, possibly restricting the number of species considered to those consistently representing more than a defined proportion of the catch. The working group did not have enough time to fully resolve the issue and further work is recommended.

Changes in fleet fishing practices (e.g. changes in main areas fished or increasing technical efficiency) could also cause changes in CPUE for a given species, and if this indicator is used it is desirable to combine results with expert knowledge of developments in fishing practices. Data for the CPUE measure are provided under the current DCR and as such are naturally specific to fleet segments. If only landings are provided then the indicator measures landings per unit effort (LPUE) rather than CPUE, and a time series for a given species might give a misleading picture if discard practices change.

7.8. Capacity Utilisation

As discussed under ToR 2b, the WG established Capacity Utilisation as a technical indicator. Capacity Utilisation is calculated as follows:

*(Actual Effort*kW or GT) / (Maximum Effort*kW or GT)*

This indicator is a ratio between the average number of days at sea per vessel and the maximum historical number of days at sea achieved by any vessel within that particular fleet segment. The maximum number of days should be established by the vessel in the fleet segment using the most days at sea in any of the years in the time series, or by an average of the days at sea of the most active vessel in each of the time spans.

In order to take account of different vessel capacities, e.g. the fact a vessel using towed gear might be expected, in a given time period, to catch a greater amount of fish if using a more powerful engine, this exercise should ideally include a weighting of the individual vessel's capacity, by calculating the ratio in terms of kW-days (for active gears) and GT-days (for passive gears) for each vessel in the fleet segment. For example;

*Mobile Gears = KW * Days at Sea*

*Passive Gears = GT * Days at Sea*

Data (days at sea per vessel, GT and kW) is available at Member State level from data collection according to DCR. It should be noted that fleet capacity utilisation measured using kW days or GT days will be influenced more strongly by vessels of higher kW or GT value, (see Appendix G for an illustration).

Theoretically, in a technical sense we would hope to achieve a capacity utilisation rate of 100% in the short term. In reality however, the utilisation rate will be much lower when not

working at the level of fully homogenous fleet segments, which generally the DCR segmentation does not provide.

Capacity utilisation might be low in any given year (short-term) because of a short lived crisis in stock abundance, or deterioration in economic performance (e.g. high fuel costs). However, if capacity utilisation is continually low over a number of years, (long-term) this would be a much more serious problem. This problem is not just specific to capacity utilisation; it applies to most if not all the indicators. This is why we recommend a 5 year moving average for continual monitoring.

There is a need to take account of species, biology and seasonality when calculating this indicator. The UK pelagic fleet is a good example; these vessels could exert exactly the same effort with fewer vessels if they fished more days. There is the issue of economic efficiency vs. other objectives in the fishery. This corresponds with the point made above. This also relates back to the issue of not fully homogenous fleet segments. There are also comparison problems between countries.

This indicator is easy to calculate and is the only one that refers to the potential capacity as a reference point. It roughly shows by how much capacity can be reduced under the existing level of fishing opportunities. It is therefore to be considered the baseline indicator for each fleet segment. The margin between the calculated value and one indicates the technical overcapacity. For evaluation purposes, an indicator of more than 0.9 will only be observed in largely homogeneous fleet segments. Continuous values of e.g. below 0.7 (depending on fleet homogeneity) shall be considered as showing a distinct structural overcapacity (red light).

One problem is the use of days at sea as a measure for effort by particularly the passive gear segments. This is the only option under the existing DCR, however the proposed reform DCR includes many measures of effort, including the no. of pots and traps etc, so once the new DCR is in place, a better method for calculating capacity utilisation in the passive gear segments should be relatively easy to achieve.

7.9. ToR 3b:

7.9.1. Reconciling opposing information of a sub-set of the indicators

Table 7.3 Suggested traffic light system

Fishery	Country	Fleet Segment	Indicator	Indicator Result	Traffic Light
NS Demersal Trawl	UK	DTS1224	F	60%	Green
NS Demersal Trawl	UK	DTS1224	H	90%	Amber
NS Demersal Trawl	UK	DTS1224	CPUE	1.2	Amber
NS Demersal Trawl	UK	DTS1224	ROI	5%	Green
NS Demersal Trawl	UK	DTS1224	CR/BEP	110%	Green
NS Demersal Trawl	UK	DTS1224	GVA (1,000 EuR)	400	Amber
NS Demersal Trawl	UK	DTS1224	Crew Wage (EuR)	20000	Amber
NS Demersal Trawl	UK	DTS1224	Capacity Utilisation	55%	Red
NS Demersal Traw	**UK**	**DTS1224**	**Overall Evaluation**	**Qualitative assessment**	Amber
NS Flatfish	Netherlands	TBB2440	F	110%	Red
NS Flatfish	Netherlands	TBB2440	H	105%	Amber
NS Flatfish	Netherlands	TBB2440	CPUE	1.5	Green
NS Flatfish	Netherlands	TBB2440	ROI	8%	Green
NS Flatfish	Netherlands	TBB2440	CR/BEP	120%	Green
NS Flatfish	Netherlands	TBB2440	GVA (1,000 EuR)	300	Amber
NS Flatfish	Netherlands	TBB2440	Crew Wage (EuR)	24000	Amber
NS Flatfish	Netherlands	TBB2440	Capacity Utilisation	70%	Green
NS Flatfish	**Netherlands**	**TBB2440**	**Overall Evaluation**	**Qualitative assessment**	Green

**** Data contained in these tables is illustrative only and does not represent the actual 'balance' situation in any of the described fleet segments.*

The WG recommends that the simplest and most effective way to reconcile opposing information on any sub-set of 'balance' indicators, would be to employ a relatively simple 'traffic light' system, similar to that set out in table 7.3. This could follow the basic "green, red and yellow" format, or even take a slightly more sophisticated approach similar to that used in the AER where there are various classifications[18] for short and medium term performances defined for various economic indicators. The overall evaluation of the fleet segment receives the same colour as that appearing most often against the individual indicators. Some indicators require a different type of assessment from others. For example, the BEP and F indicators require percentage cut-off points in order to be classified while average wage per FTE and GVA would require some kind of comparison with other similar sectors of the economy. Initial considerations of cut-off points are contained in sections 7.1 to 7.8 but the WG had insufficient time to consider in depth the relevant cut-off points required for each indicator and recommends additional work be undertaken to further develop the traffic light system.

[18] *Look at AER for traffic lights economic indicators (AER 2005, p13)*

7.9.2. How to relate indicators with each other in a multi-species/multi-fleet situation

All indicators have been calculated to be comparable at fleet segment level, including fleets that catch (targeted or otherwise) several species. See description of how biological indicators are calculated in sections 7.5.1 to 7.7.

CPUE can be calculated for each species targeted by each fleet segment however a trend over time is the only indication of balance obtainable from this indicator. It may be desirable to create a mean standardised index to allow comparisons between species - and it should be possible to combine across species to produce a single time trend (but see section 7.7 on the limitations of this approach). This indicator would be undermined if CPUE for a given species altered because of changes in fleet behaviour rather than species abundance. MS could be asked to produce this indicator unless expert opinion could give evidence of this problem.

For many fleets, the value of landings of several species (in various markets) will affect fishing behaviour, and therefore the results of the social, economic and technical indicators will be affected either directly or indirectly. It is therefore advised not to divide between species for the calculation of socio-economic and technical indicators.

7.9.3. Address the consequences of a varying time span for the indicators

As a general rule, the longer the available time series, the better the assessment will be, assuming the quality of the data required to calculate the indicators do not vary between years. For biological data for example, it is usual to take a 10 year moving average, although this is clearly not possible for all indicators. In AER there is a classification of ST and LT performance. The WG recommends further work be undertaken to consider which indicators refer to the short term and long term, or whether it simply got to do with the length of the time series. For the purposes of this research, the WG agreed that a three year time series for the socio-economic data and a five year time series for the technical/biological data is a good starting point.

7.9.4. "Costs and prices test"

A recent STECF plenary report[19] contained a list of factors that affect economic performance in the long run. Each factor (not only price increases or a lack of demand) may create problems when linking economic performance to a target level of removals. But the factors are different with respect to influence of changes or availability of data by the MS to analyse which factors lead to the changes in ROI or GVA etc. These factors are described below:

Capital values: if we assume a normal depreciation procedure this will not change significantly every year.

Interest rate: Interest rates are generally stable between years and *clear observable to show possible effects on capital value etc.*

---

[19] Anonymous (2005) "Technical Developments and Tactical Adaptations of E.U. fleets" (TECTAC) research project funded b the European Union (DG Fisheries, study n°QLRT-2001-01291). Final Report, December.

Output prices: These are important indicators because prices can vary significantly over a year. But with information on market development, auction prices etc. it would be possible to analyse possible changes in the indicators vs. the price differences.

Fuel costs: Over the last years fuel costs are likely to have been the most influential cost factor. But the MS should have enough information to have an idea how influential a fuel price increase/decrease was on the balance indicators.

Catch composition: If it is not possible to find the reasons for significant changes in the economic indicators, then this may be the reason. But for many vessels the catch composition is not that variable over the years because of quota restrictions. In small scale fisheries or mixed fisheries with many species it is also problematic to analyse economic indicators vs. fishing mortality targets etc.

Opportunistic actions: Fishermen may fish less to stabilize output prices or fish different species because of their higher value. The North Sea brown shrimp fishery is such an example were fishermen created a voluntarily quota system to keep prices on a high level.

Illegal Landings: It is clear that this is a problem in many fisheries and by it nature hard to quantify.

We should not underestimate, but also not overestimate, the changes in these important factors that may have an impact on the economic performance of fleet segments. We should be pragmatic and advise the MS that it is their responsibility to identify any changes in these factors that will affect the performance of their fleet segments because they have the data and the required understanding to show the reasons for significant changes.

8. TOR 4.

Apply indicators retained to certain fisheries/fleet segments, and provide a short discussion of the results obtained. Primarily, data from the DCR call of January 2008 shall be used. The absence of biological data from this exercise, where relevant (e.g. biomass, catches that include discards), shall be addressed by referring to other available sources (ICES, RFMOs). About 5 fisheries should be selected. The chairman shall propose a selection in advance of the meeting, having regard to the recommendations made by SGRST-SGECA 07-05. The selection shall be finally fixed in view of the data quality of data coming from the DCR January call.

8.1. North Sea Mixed Demersal

The North Sea mixed demersal fishery consists of several whitefish species such as cod, haddock, hake, saithe and monkfish. The major DCR fleet segment that operates in the North Sea is the demersal trawl/seine segment, however, a large proportion of these vessels predominantly target Nephrops, not demersal species (this is particularly true for the UK fleet). Further, a number of these vessels operate to the west of Scotland, and in the Norwegian sector, and perhaps also the Baltic for some of the other participating countries, for at least part of the year. A number of countries are involved in this fishery, including the UK, Netherlands, France and Denmark.

Results:

Tables 8.1.1 and 8.1.2 summarise each 'balance' indicator by providing (up to) a 5-year average of results obtained. Figures 8.1.1.1 to 8.1.1.9 and 8.1.2.1 to 8.1.2.9 are graphical representations of the time trends for each indicator in each country.

General comment on the indicator results

For the economic and social indicators, the number of years for which data was available varied substantially between countries. Invested Capital and Fixed Costs were two key variables required for the calculation of the economic indicators and these were unavailable for some years in some countries, reducing the quality of the analysis.

ROI for these segments were generally negative, indicating over capitalisation. The CR/BEP ratio was generally less that 1, indicating that over capacity exists in these fleet segments. GVA appears stable for both segments while the wage trend per FTE appears to have improved between 2002 and 2006.

From a technical viewpoint, capacity utilisation was calculated for three countries, Germany, the Netherlands and the UK. This indicator varied between approximately 60% and 80%.

The biological indicator used to assess 'balance' was the F indicator. Species for which assessed F values, Ft values and quota shares were found were cod, haddock, plaice, saithe, sole and whiting. For the DTS 12-24m segment landings data was available in all years except for Germany. The species used to calculate the composite F indicator accounted for roughly 50% of fleet segment landings except for Denmark where only 10% was represented. No

national fleet segment obtained a five year average value greater than one. This indicates that the national fleet segment is, on average across species used to calculate the indicator, not catching more than would be expected by all fleet segments operating within the country.

Time trends are illustrated in Figure 8.1.1.6. This shows sharp rises in the indicator in the final year, particularly for the French fleet. To understand why requires consideration of the species forming the average. Figure 8.1.1.7 shows the results by species for the French fleet. It can be seen the average indicator largely reflects the pattern for whiting. The results files show that whiting constituted between 70% and 90% of the catch of indicator species. For the UK fleet segment the average pattern also reflects the pattern for whiting to a considerable extent. The whiting share of indicator species catch for this fleet has risen from approximately 15% in 2002-2004 to 30% in 2006.

If several fleets operate within a nation summed F/Ft values across fleets for individual species show whether national catches are consistent with long term stock management goals. Summation of the species composite indicators will not necessarily reflect the situation for individual species.

Another problem with a species aggregated indicator results if a nation has no quota for an assessed species. If taking account of quota according to relative stability only this is the situation for Sweden with respect to plaice and sole. Figure 8.1.1.9 shows results for the individual species of cod, haddock and whiting but in all but one year Swedish vessels in this fleet segment also caught plaice and/or sole. The F/Ft indicator value for these species becomes infinite (division by zero) such that a weighted average is also infinite. Such cases probably have to be dealt with on a case by case basis taking into consideration the absolute level of catch of the problem species.

For the DTS 24-40m segment the species capable of being included in the F/Ft indicator increase in importance for the UK but decrease for other nations. Values of the species composite indicator remain below one in all years for this fleet segment except for France (Figure 8.1.2.6). Again for Sweden it is not possible to calculate finite values because Sweden does not receive quota for at least one assessed species recorded in their catch. Taking France, the Netherlands and the UK as examples of trends by species for individual nations it can be seen from the first two nations that again the species averaged patterns are a reflection of the patterns for whiting.

Analysis of the underlying data showed that for the Netherlands fleet there has been a 95% reduction in whiting landings between 2002 and 2006, which is reflected in the rapidly falling share of the fleet segment catch of this species. Figure 8.1.2.9 shows how haddock contributes easily the highest percentage of catch among assessed species within the UK fleet segment. Although the species averaged value for this fleet segment is still well below one, the F/Ft values for haddock have been rising steadily and it is now above one. The value for cod has been falling since 2003, but because haddock makes up the larger proportion of fleet landings the species averaged value has been rising.

For both fleet segments it must be noted that target F values were distributed according to relative stability quota allocations but did not take account of habitual quota swaps.

8.1.1. DTS_12-24m

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1 million Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	No. of cases
Denmark	-10%	5	55%	5	36.75	5	46.2	5	n/a	0	0.17	11.6	5
France	-10%	5	48%	5	92.49	5	38.5	5	n/a	0	0.83	47.6	5
Germany	-65%	2	25%	2	4.84	2	34.6	2	60%	5	0.48	54.7	3
Netherlands	-10%	5	81%	5	2.26	5	40.6	5	79%	5	0.14	44.8	5
UK	-19%	2	49%	2	61.75	5	25.9	2	59%	5	0.57	51.5	5

Table 8.1.1 Indicator Summary Table (5 year average)

Figure 8.1.1.1 ROI

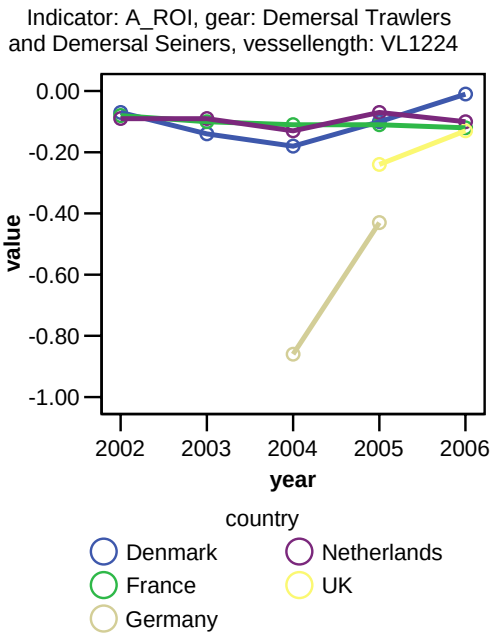


Figure 8.1.1.2 CR/BEP

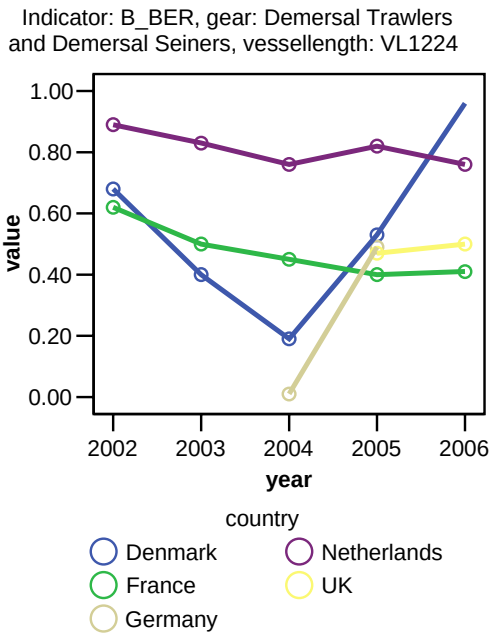


Figure 8.1.1.3 GVA

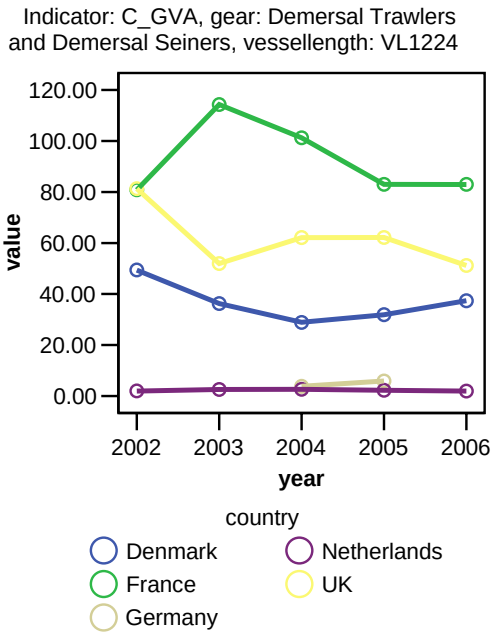


Figure 8.1.1.4 Wage per FTE

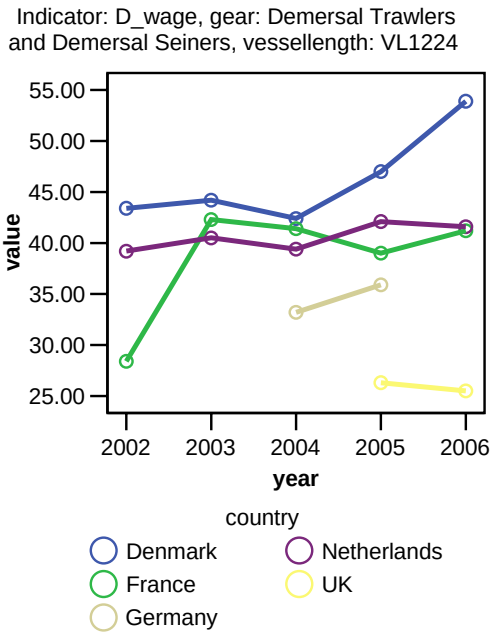


Figure 8.1.1.5 Capacity Utilisation

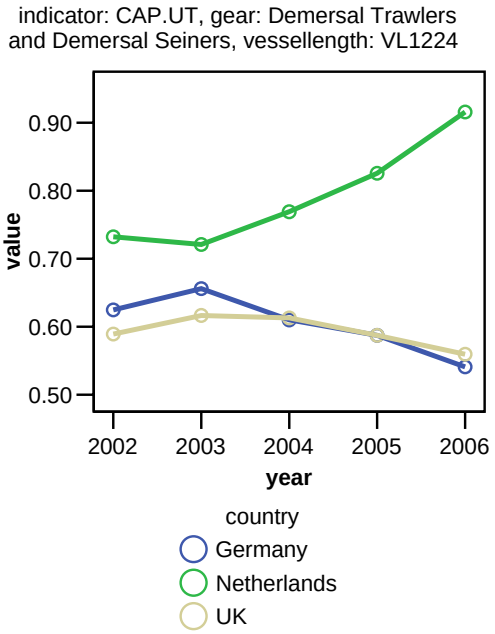


Figure 8.1.1.6 F mortality indicator (species weighted average by country)

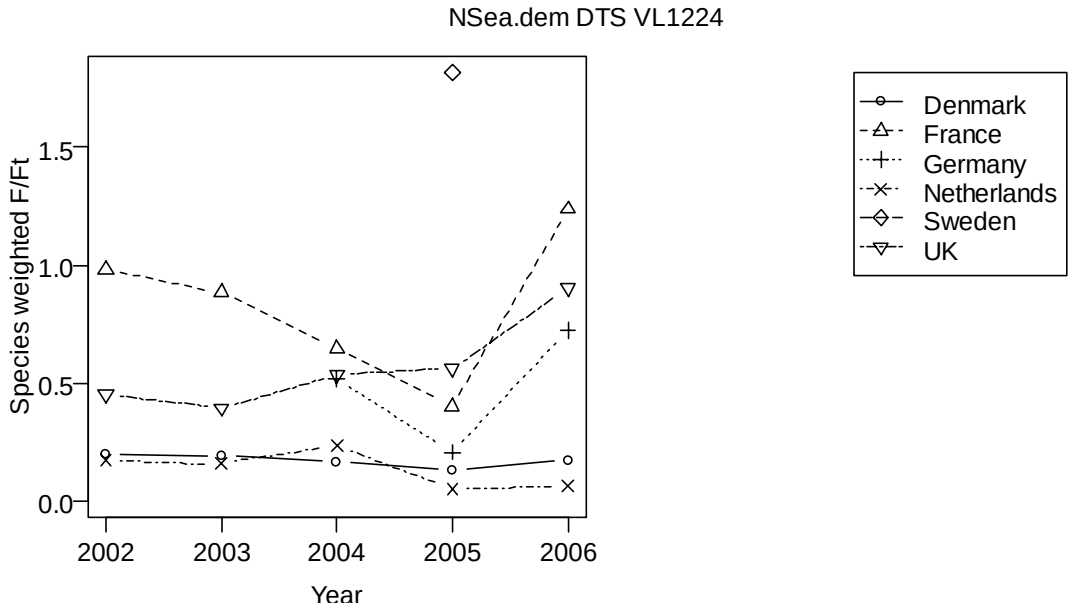


Figure 8.1.1.7 F mortality indicator (France; individual species)

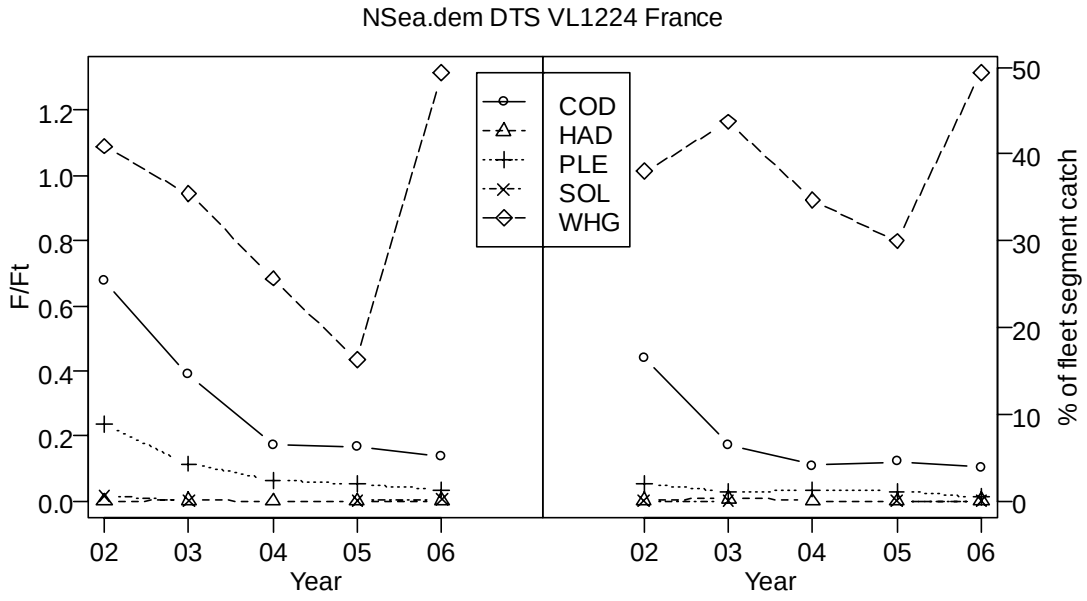


Figure 8.1.1.8 F mortality indicator (UK; individual species)

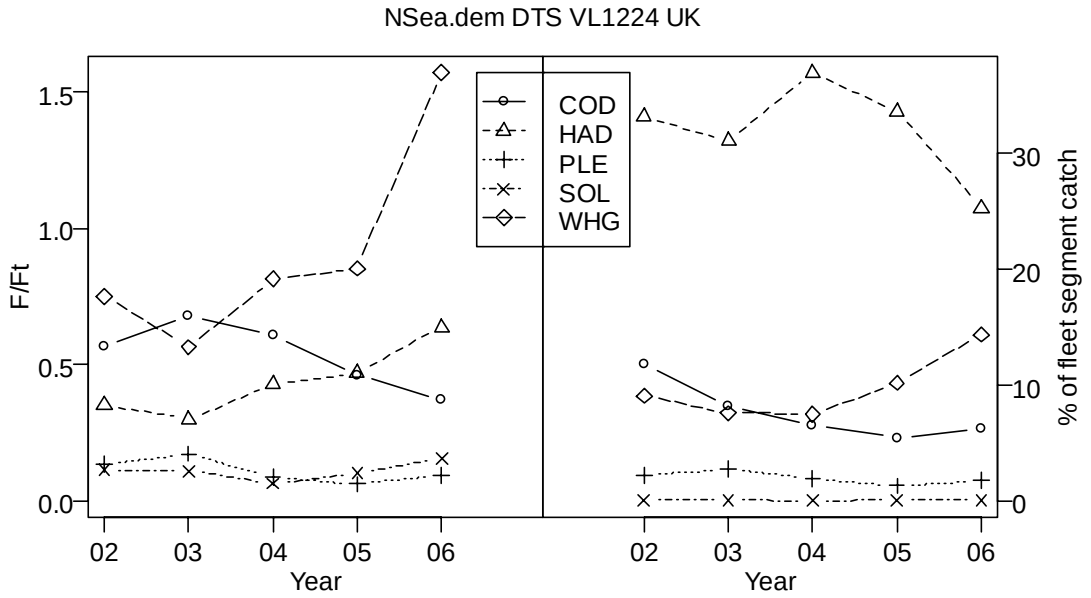
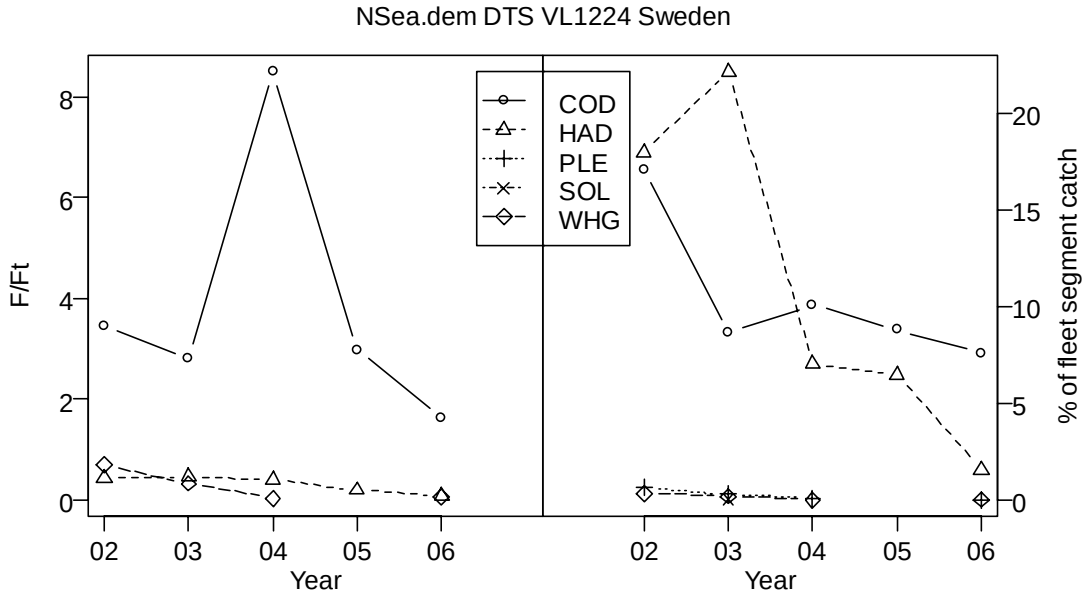


Figure 8.1.1.9 F mortality indicator (Sweden; individual species)



8.1.2. DTS_24-40m

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	No. of cases
France	-10%	5	46%	5.00	28.6	5	38.3	5	n/a	0	0.55	43.7	5
Germany	759%	1	540%	1.00	11.8	1	43.4	1	82%	5	0.50	31.7	3
Netherlands	10%	5	125%	5.00	4.8	5	46.7	5	78%	5	0.32	26.0	5
Sweden	-5%	1	62%	1.00	4.6	5	7.0	1	n/a	0	Inf	26.7	5
UK	-25%	2	28%	2.00	46.7	5	39.2	2	71%	5	0.61	67.8	5

Table 8.1.2 Indicator Summary Table (5 year average)

Figure 8.1.2.1 ROI

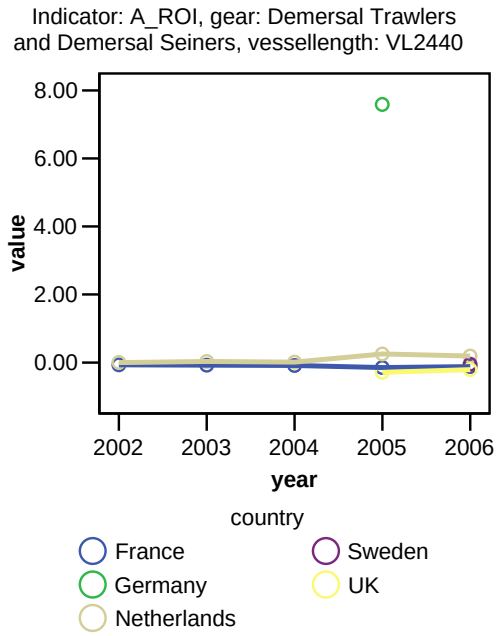


Figure 8.1.2.2 BEP/CR

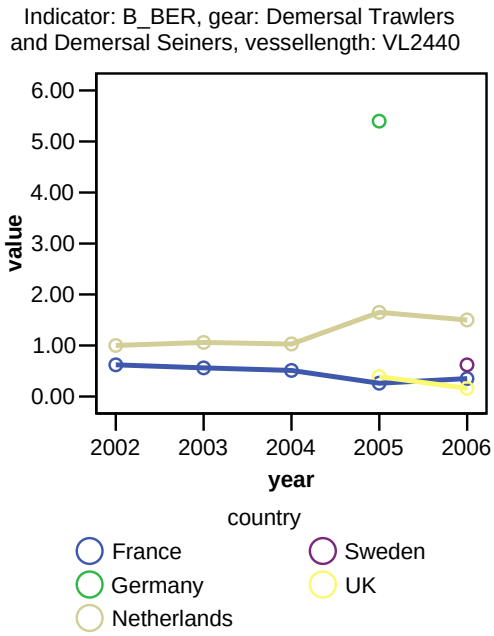


Figure 8.1.2.3 GVA (1 Million Euro)

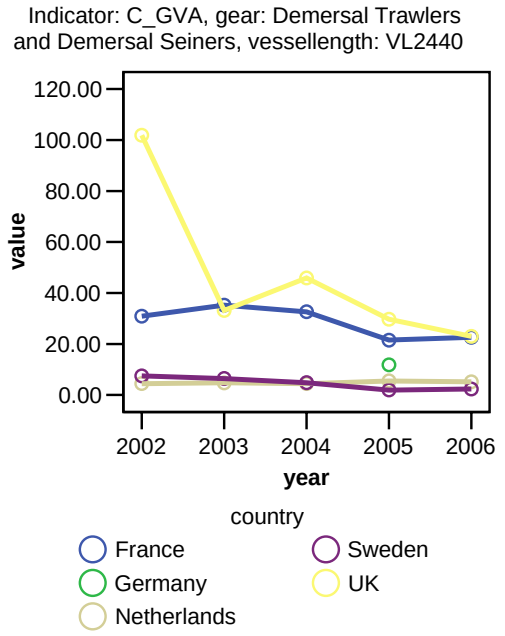


Figure 8.1.2.4 Wage per FTE (1000 Euro)

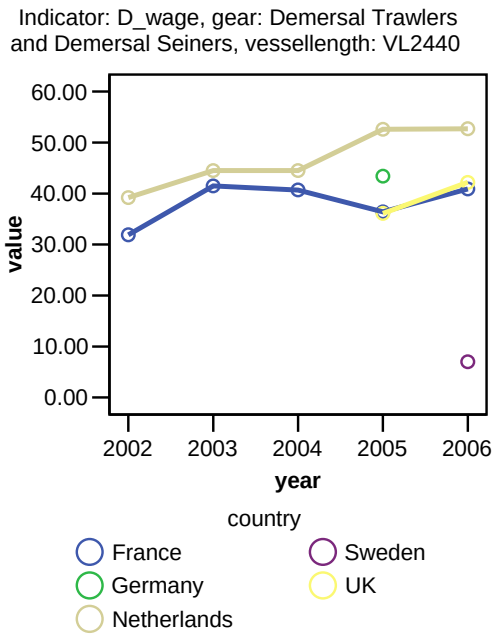


Figure 8.1.2.5 Capacity Utilisation

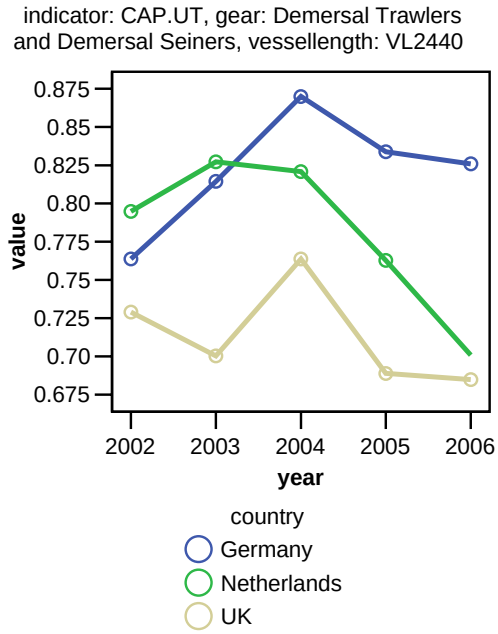


Figure 8.1.2.6 F mortality indicator (species weighted average by country)

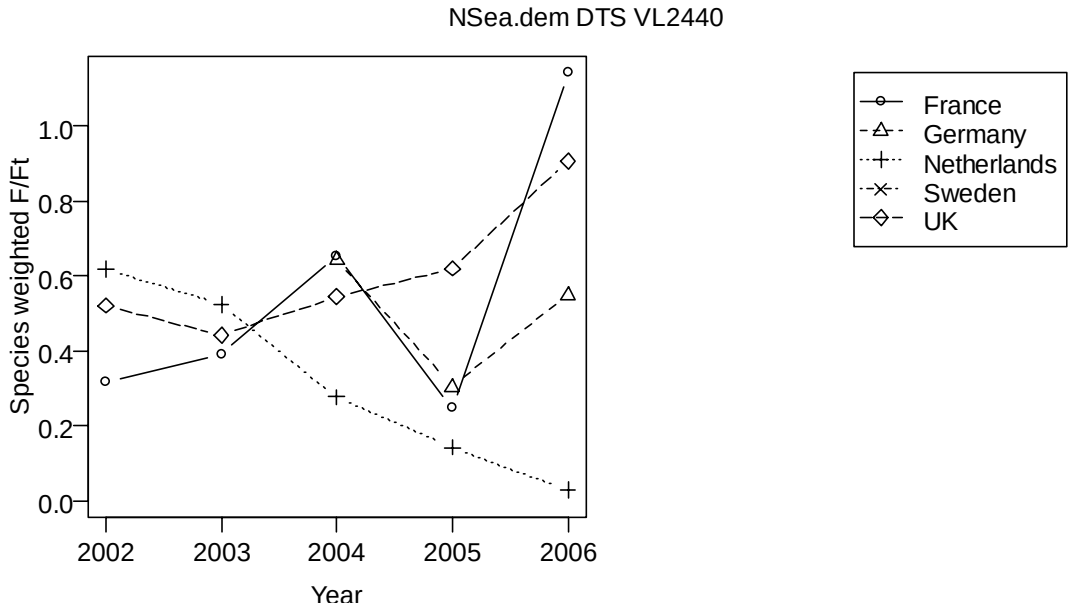


Figure 8.1.2.7 F mortality indicator (France; individual species)

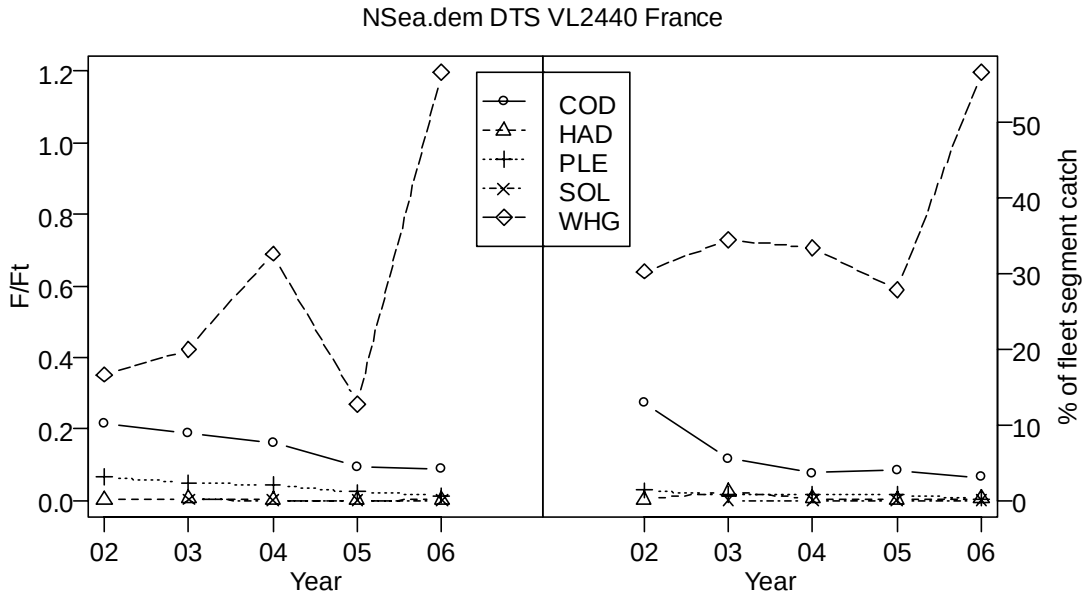


Figure 8.1.2.8 F mortality indicator (Netherlands; individual species)

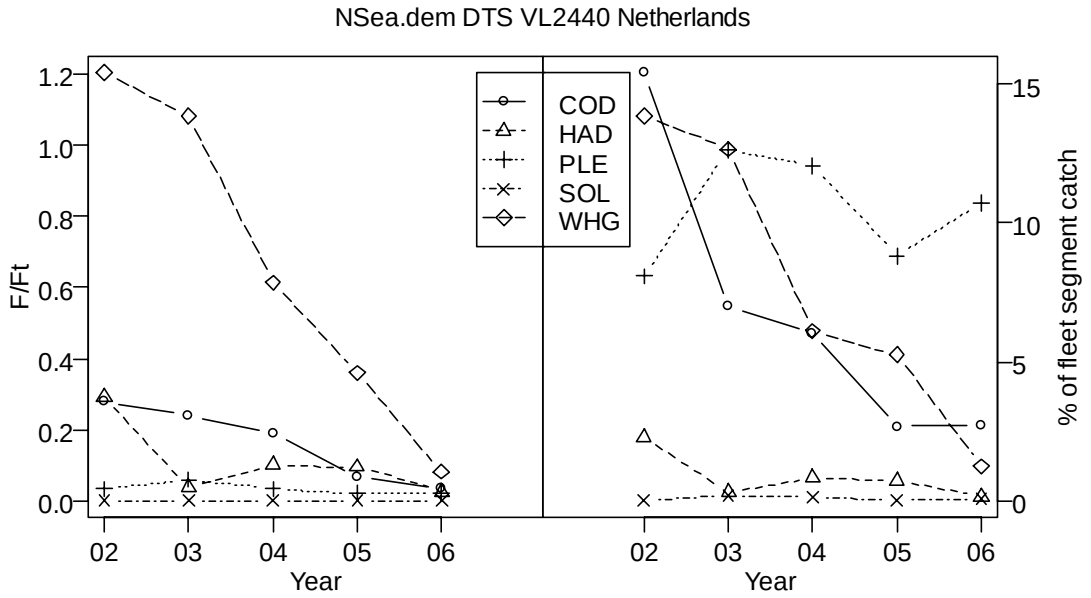
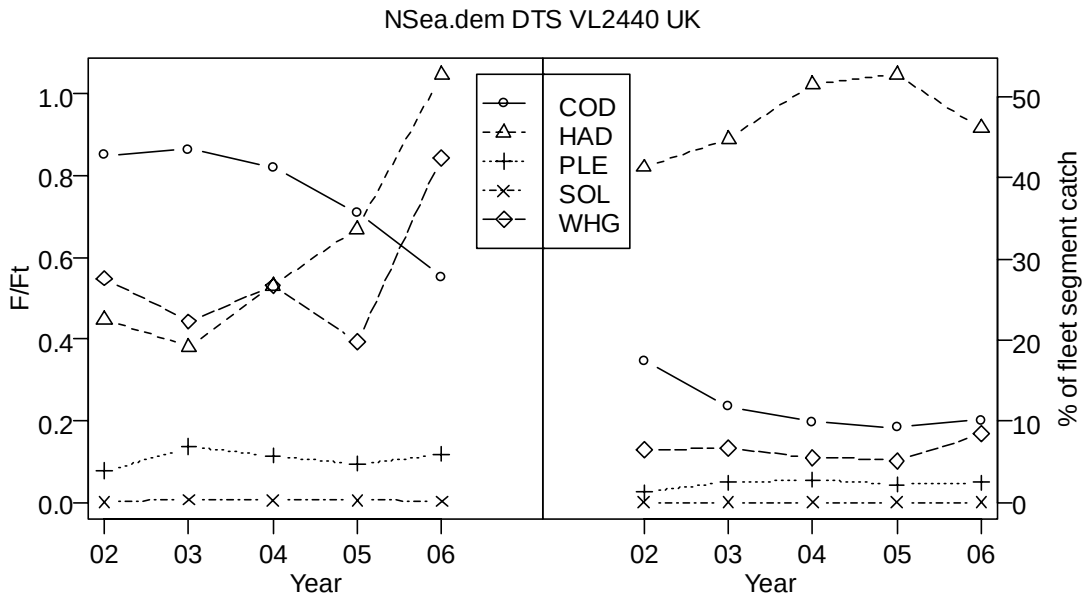


Figure 8.1.2.9 F mortality indicator (UK; individual species)



8.2. Northern Hake

The European Hake is distributed along the Atlantic coast of Europe and extends from Norway and Iceland, southwards to Mauritania. It is also found in the Mediterranean Sea and the southern coast of the Black Sea. Spain accounts for the majority of landings with 59% of the total in 2006. France took 26% of the total, UK 6%, Denmark 3%, Ireland 3% and other countries (Norway, Belgium, Netherlands, Germany, and Sweden) contributing small amounts.

The Northern Hake catches made by the Spanish fleet are concentrated on a single fleet named the "300 fleet" (this fleet accounts for all the Spanish catches of Northern Hake). The different métiers existing in this fleet catch Hake sometimes as a single species fishery (long-liners and pair trawlers), as a target species in a mixed fishery context, where up to 30 species are captured (netters and part of the bottom single trawlers), and finally fisheries targeting some other species (mainly anglerfish and megrim) which is the case of the remaining bottom single trawlers.

Most hake is caught by the larger polyvalent vessels using seine nets or gill-nets as well as demersal trawl, generally as a by-catch along with megrims, anglerfish, and other whitefish. The segments selected are the representative ones to this fishery in each MS. Five for France, three for Spain and one for UK, Denmark and Ireland. The availability of the data is different for each one.

Results:

Tables 8.2.1, 8.2.2 and 8.2.3 summarise each 'balance' indicator by providing (up to) a 5-year average of the results obtained for each fleet segment. Figures 8.2.1.1 to 8.2.3.3 are graphical representations of the 'balance' time trends for each indicator in each country.

General comment on the indicator results

All the data needed to calculate the indicators was supplied for the UK and Denmark. There was no data supplied by Ireland, including technical or socio-economic data.

For the French segments fixed costs were missing so an assumption of 15% of the value of landings was used for all segments. This assumption was used for the calculation of ROI, BER and GVA.

For the Spanish segments no capital cost data was available. To compute the indicators an opportunity cost of capital figure was estimated using invested capital parameter by assuming a borrowing rate of 40% and an interest rate of 5%. Depreciation was calculated by assuming a 20 year economic life-span of the vessel.

In the following tables a summary of all indicators is given for the most representative segments. In terms of the economic indicators, ROI has shown an average negative value for all segments except for the segment DFN_24-40m, while BER has always shown values below one.

In terms of the F/F_{target} it should be taken into account that for the distribution of relative stability principle has been used while not the final quotas, that is there has not been considered the habitual quota exchanges between MS.

There is no real overall conclusion for the Northern hake fishery possible because of the poor data for most of the MS's. Furthermore the overall significance of all these segments to the case study of Northern hake can be very low. In terms of the share of hake in the total landings of each segment, for the segment selected of Denmark, hake accounts only for 1% of the total landing, 3% for UK's segment, while for Spain and France it goes from 2% (French 12-24, DTS) to the 58% (French 24-40, HOK). It also should be taken into account that the northern stock and the southern stock of hake cannot be separated from the regional segmentation, which clearly affects the results for Spanish segments, which in the Atlantic fish two different stocks of hake (Northern and Southern hake).

8.2.1. DTS_24-40m

Table 8.2.1 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	No. of cases	Catch / Biomass indicator	No. of cases
Spain	-0.10	0 (3)*	0.27	0 (3)*	96.19	3	14.60	3	0.48		1.30	5	0.22	5
France	-0.10	0 (5)*	0.46	0 (5)*	28.56	0 (5)*	38.28	5			0.092	5	0.018	5
UK	-0.25	2	0.28	2	46.72	5	39.15	2	0.71		0.37	5	0.063	5

Figure 8.2.1.1 ROI

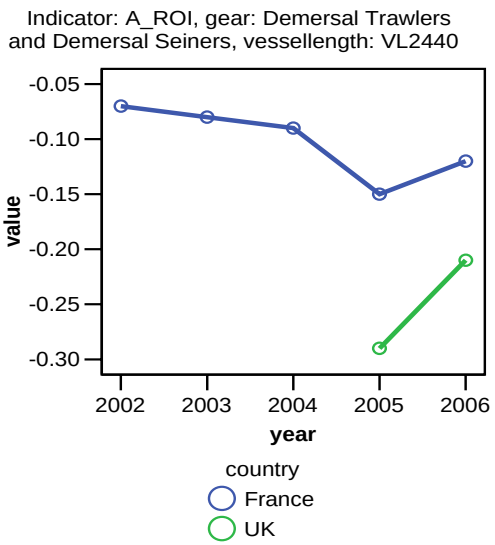


Figure 8.2.1.2 CR/BER

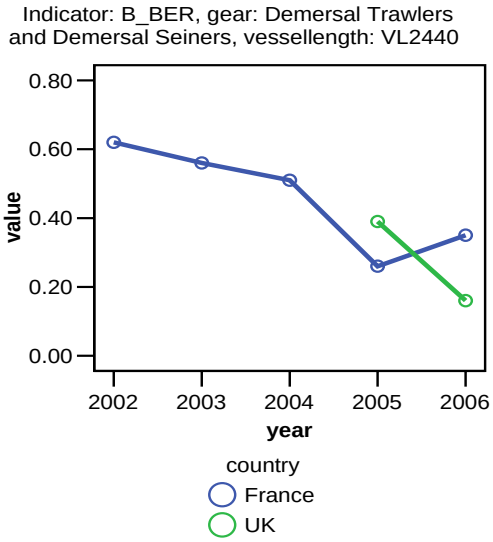


Figure 8.2.1.3 GVA

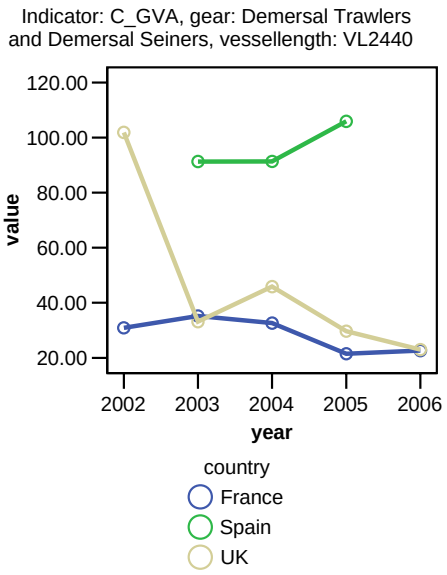


Figure 8.2.1.4 Wage per FTE

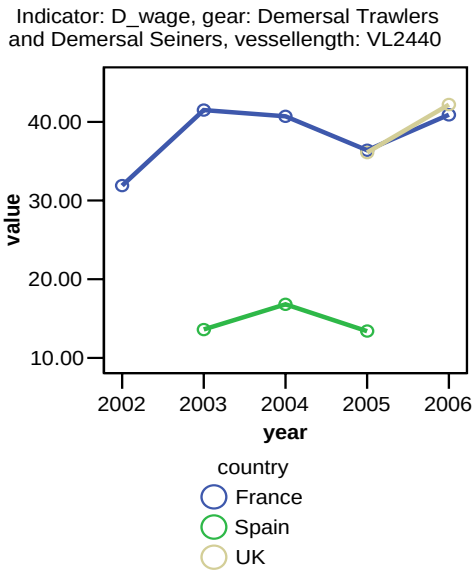


Figure 8.2.1.5 Capacity Utilisation

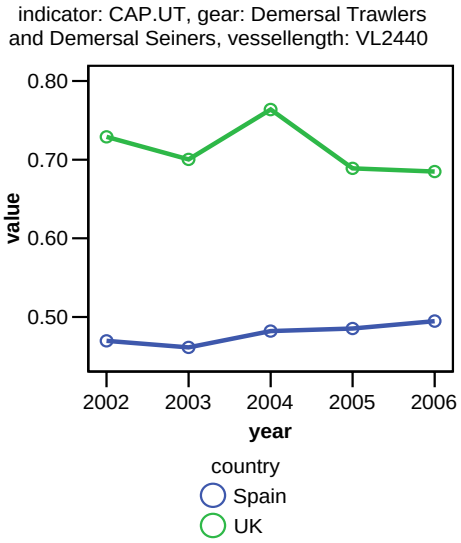


Figure 8.2.1.5 F mortality indicator

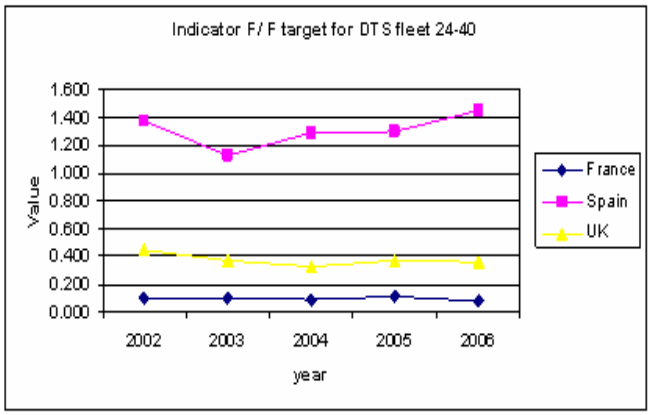
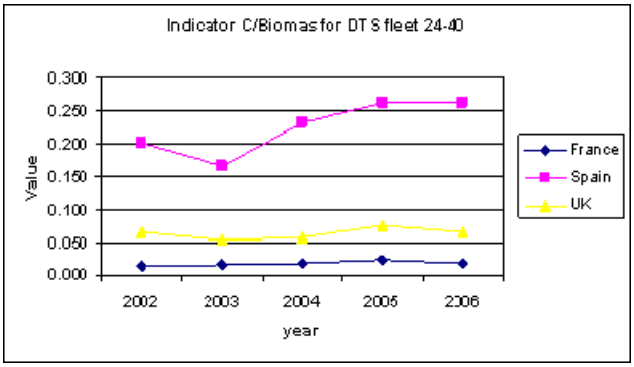


Figure 8.2.1.6 Catch / Biomass indicator



8.2.2. DFN_24-40m

Table 8.2.2 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	No. of cases	Catch / Biomass indicator	No case
Spain	0.01	0 (2) *	1.02	0 (2)*	1.18	2	21.15	2						
France	0.01	0 (2) *	1.01	0 (2)*	11.18	0 (2)*	34.05	2			0.32	5	0.063	

* Under brackets the number of years used for computing the indicators with not complete data (using the assumptions explained)

***** Economic and social indicator graphs not useable******

*****No Capacity Utilisation data available for this segment******

Figure 8.2.2.1 F mortality indicator

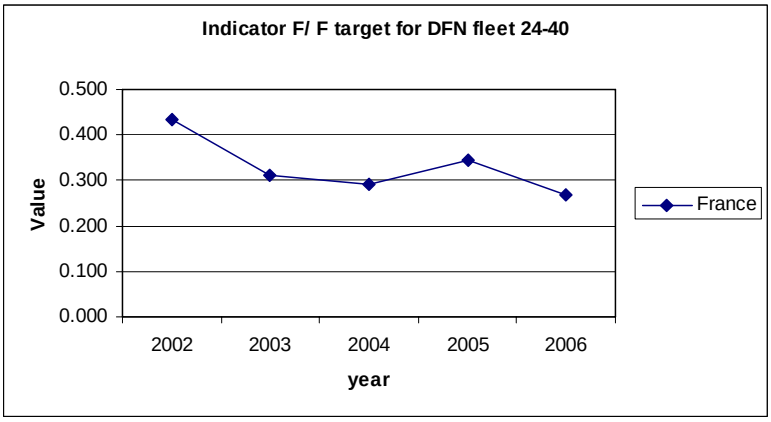
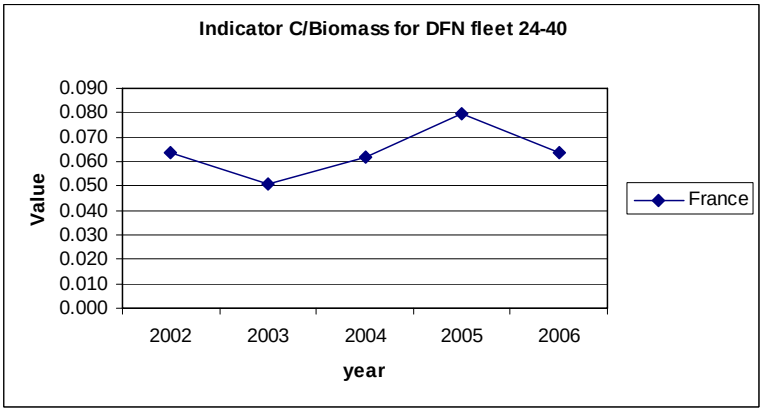


Figure 8.2.2.2 Catch / Biomass indicator



8.2.3. HOK_24-40m

Table 8.2.3 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	BEP/CR	No. of cases	GVA	No. of cases	Wage per FTE	No. of cases	Capacity utilization	No. of cases	F mortality indicator	No. of cases	Catch / Biomass indicator	No. of cases
France	-0.07	0 (1)*	0.76	0 (1)*	3.91 (1)*	0	27.60	1			0.01	5	0.002	5
Spain	-0.04	0 (3)*	0.72	0 (3)*	81.16	3	14.40	3	0.60		1.62	5	0.27	5

* Under brackets the number of years that have been computed using the assumptions explained.

***** Economic and social indicator graphs not useable******

Figure 8.2.3.1 Capacity Utilisation

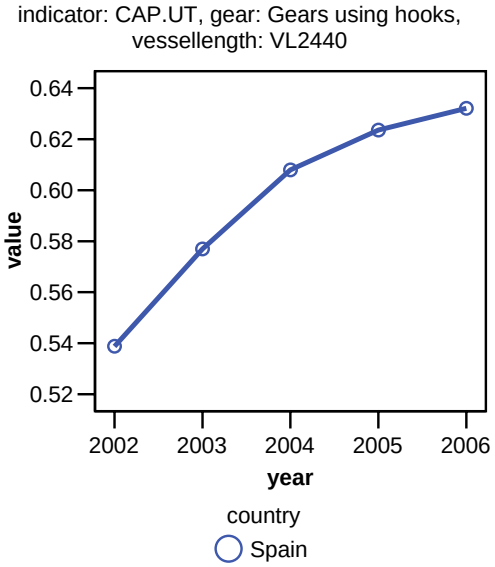


Figure 8.2.3.2 F mortality indicator

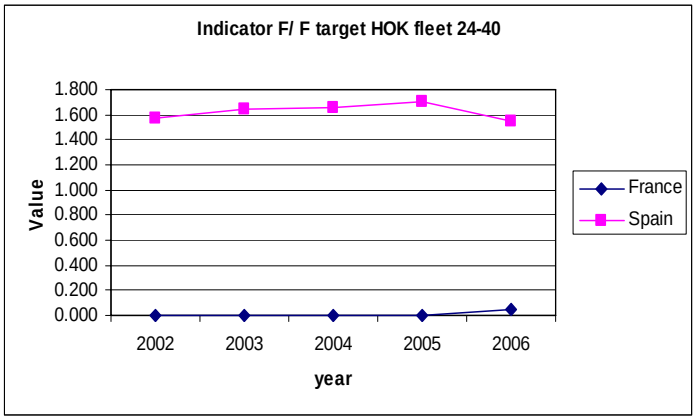
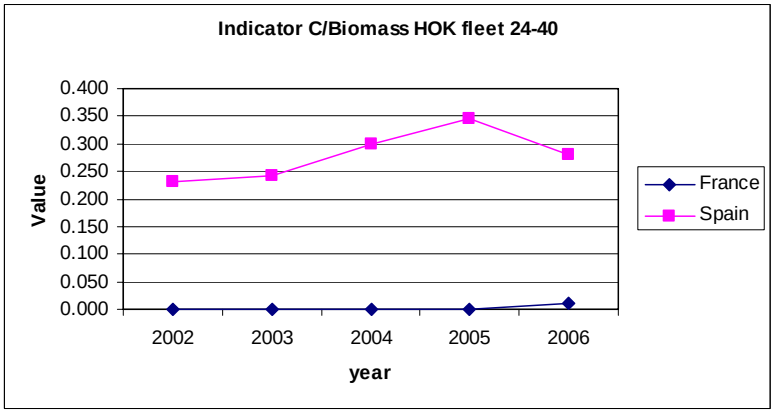


Figure 8.2.3.3 Catch / Biomass indicator



8.3. North Sea Flatfish

The Dutch fishery is the most important fishery for plaice and sole, contributing 39% of the total plaice and 70% of the total sole catch from the North Sea in 2006 (ICES, 2007). The two target species plaice and sole are caught together in a mixed fishery catching more than 100 species. Most important by-catch species are flatfish species, such as flounder, lemon sole, dab, turbot, brill and cod and whiting. The North Sea flatfish fishery is targeted mainly by beam-trawlers from the Netherlands, UK, Belgium, Germany and Denmark. Gillnet fisheries (mainly Danish) also take a minor part of the sole catch. For the purposes of this report, only the beam-trawlers are taken into account. Smaller vessels also catch significant amounts of shrimp in a specialized fishery. Although, the flatfish and shrimp fisheries are very different and have different cost structures, the two fisheries are combined in the DCR and therefore treated as one.

The economic situation in all flatfish fleets has deteriorated over the last years. The most important reasons for this have been the low fishing opportunities and the large increase in fuel prices.

Results:

Tables 8.3.1, 8.3.2 and 8.3.3 summarise each 'balance' indicator by providing (up to) a 5-year average of the results obtained for each fleet segment. Figures 8.3.1.1 to 8.3.3.7 are graphical representations of the 'balance' time trends for each indicator in each country.

8.3.1. TBB_12-24m

Data availability was good for beam-trawlers from 12-24m. Belgium, Denmark and the Netherlands provided data over a four or five year period, data from the UK was available for 1 to 5 years depending on indicator and data from Germany were available for one or two years. Unfortunately data on fixed costs were not available for UK and data on wages were not available for Belgium.

The economic indicators don't show clear trends, although differences between countries are considerable, e.g. return on investment varies from -69% in Germany to 10% in Denmark. Similar differences are found in the other economic indicators. The Gross value added shows that the Dutch fishery is most important for this fleet segment.

Capacity utilisation was only available for a limited number of MS for which the maximum number of days at sea could be estimated. It is low (around 50%) for the fishing fleets where information is available, but this is mainly a result of the value of the maximum number of sea days for these vessels which has been set too high.

In terms of biological (F/Ft) indicator all nations have time averaged values well below one. Also, except for the Belgium fleet the species used in the calculation only comprise a small or modest proportion of the fleet catch. Figure 8.3.1.7 showing results for individual species caught by Netherlands vessels is typical of results from these fleet segments; F/Ft values are approximately of the same magnitude and if any trend is present it is one of falling F/Ft values.

Table 8.3.1 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	No. of cases
Belgium	-22%	4	-28%	4	4.7	5	n/a	0	n/a	0	0.37	43.4	5
Denmark	10%	5	170%	5	6.8	5	62.6	5	n/a	0	0.02	2.4	5
Germany	-69%	2	27%	2	17.0	2	36.4	2	n/a	0	0.27	5.1	3
Netherlands	-8%	5	81%	5	26.1	5	37.7	5	57%	5	0.13	13.8	5
UK	-57%	1	-250%	1	-5.6	5	19.4	2	48%	5	0.01	9.4	5

Figure 8.3.1.1 ROI

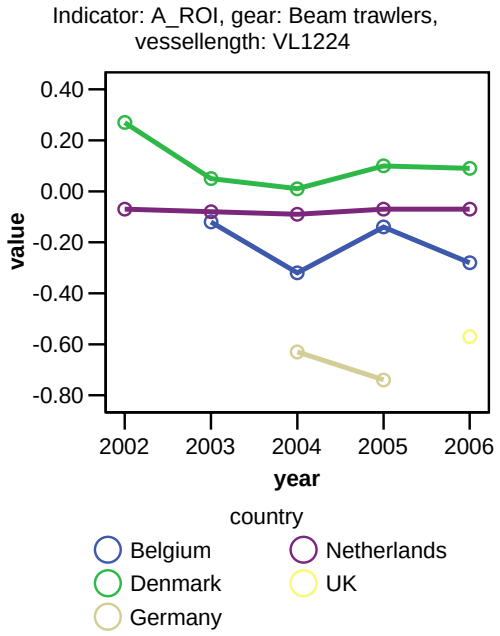


Figure 8.3.1.2 CR/BER

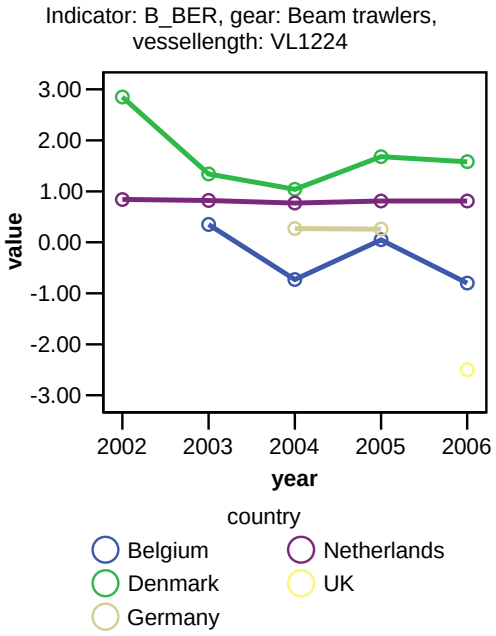


Figure 8.3.1.3 GVA (ml. Euro)

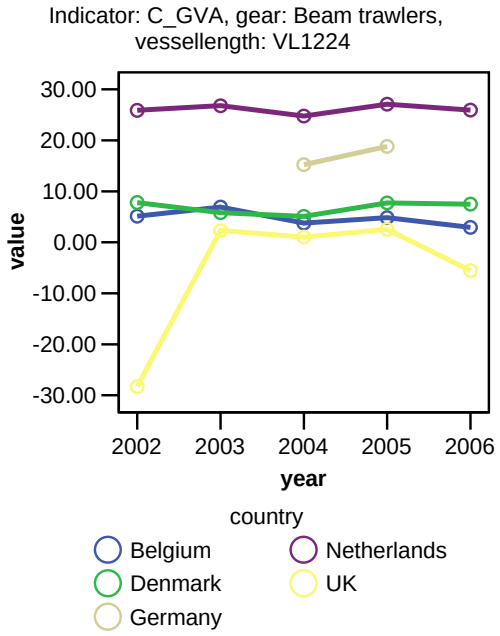


Figure 8.3.1.4 Wage per FTE (kEur)

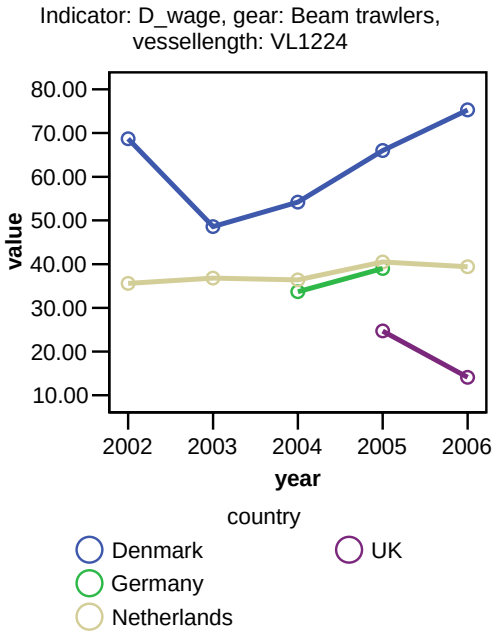


Figure 8.3.1.5 Capacity Utilisation

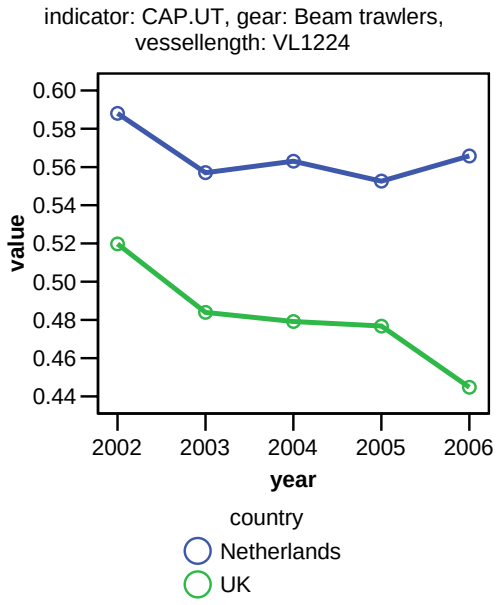


Figure 8.3.1.6 F mortality indicator (species weighted average by country)

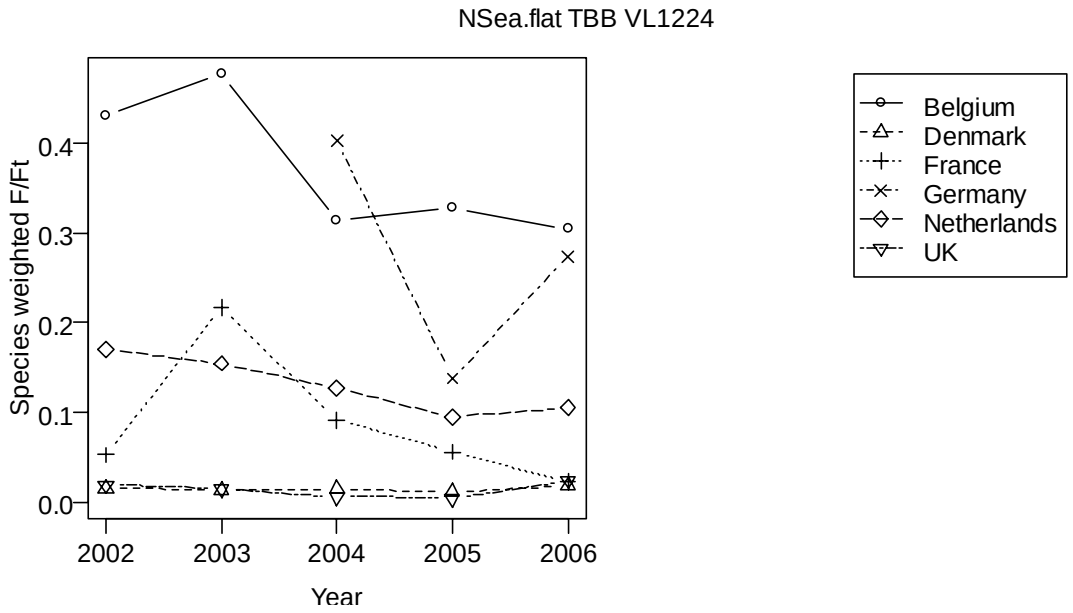
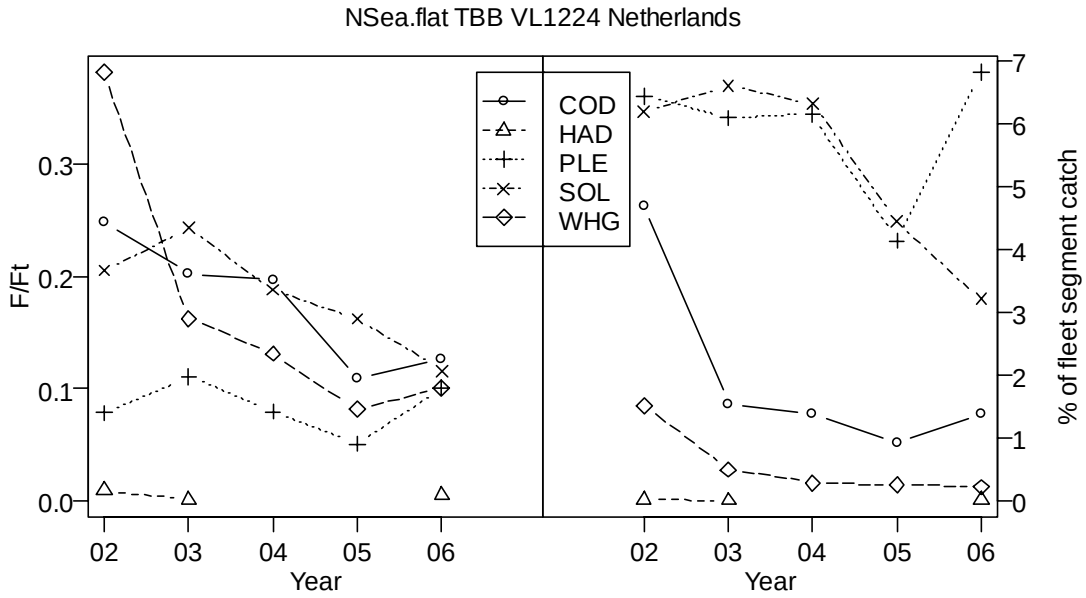


Figure 8.3.1.7 F mortality indicator (Netherlands; individual species)



8.3.2. TBB_24-40m

The beam-trawl 24-40m segment is considerably heterogeneous as it includes large Euro cutters as well as 2000hp cutters. For this group data coverage was comparable to the data coverage for the beam-trawlers between 12-24m, except Germany for which no data were available.

The economic balance indicators for this segment each show a bad economic situation which is on average similar for the different MS (ROI from -7 to -12%). However, trends in the different MS do show marked differences. Both return on investment and the ratio between break even and current revenue are deteriorating for the Belgian fleet from 2004-2005 whereas for the Dutch and Danish fleet these indicators show a slight recovery. Average wage is highest in Denmark and increasing in all fleet segments.

Also for this segment capacity utilisation is low (around 50-70%) for the fishing fleets where information is available. The reason for this is that the maximum number of days at sea is set at a level that is only achievable for larger vessels (around 40m) but not for vessels of 24m, that carry out 25% less fishing effort on average.

The percentage of catch represented by species used to calculate the F/Ft indicator is high for all nations except Germany. Because of this the time averaged value of 1.75 for the Belgium fleet can be regarded as significant. Figure 8.3.2.6 does show the species averaged value to be steadily falling since 2003 however. Looking at the time series of individual species for Belgium (Figure 8.3.2.7) high F/Ft values are seen for plaice, sole and cod. Plaice is the largest contributor to the species weighted result (roughly 40% of the catch is plaice) but cod makes up a bigger percentage of the catch than sole (13-19% of catch versus 10-13%) while at the same time the F/Ft value for cod has been > 3.

Table 8.3.2 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1 million Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	No. of cases
Belgium	-9%	4	49%	4	26.9	5	n/a	0	n/a	0	1.75	74.6	5
Denmark	-7%	5	64%	5	3.7	5	59.4	5	n/a	0	0.16	87.8	5
Germany	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	0.36	35.4	3
Netherlands	-8%	5	88%	5	20.0	5	47.4	5	60%	5	0.39	63.0	5
UK	-12%	1	-10%	1	13.5	5	33.3	2	70%	5	0.59	83.3	5

Figure 8.3.2.1 ROI

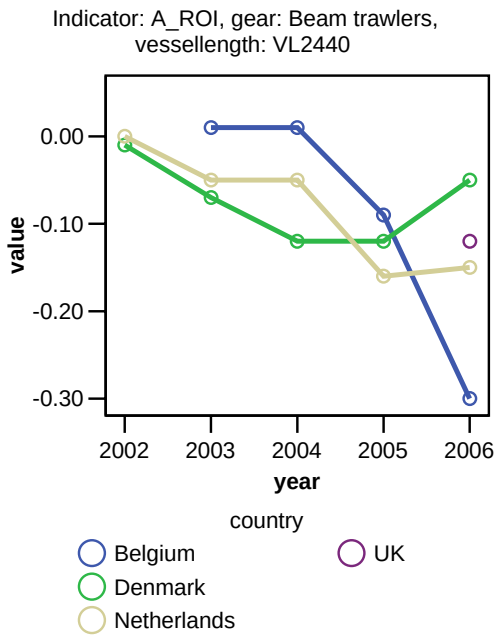


Figure 8.3.2.2 CR/BER

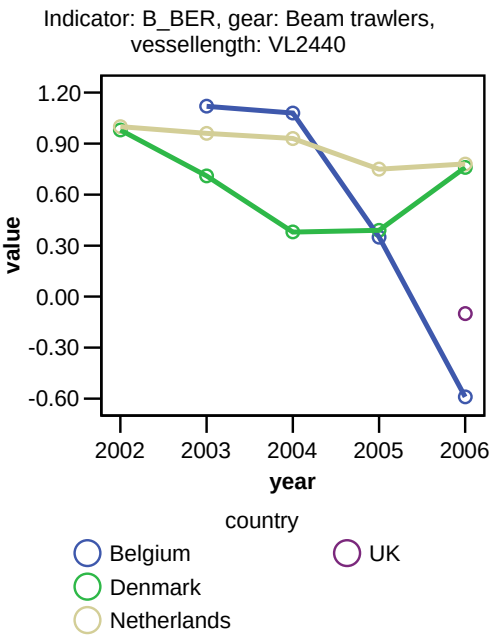


Figure 8.3.2.3 GVA (ml. Euro)

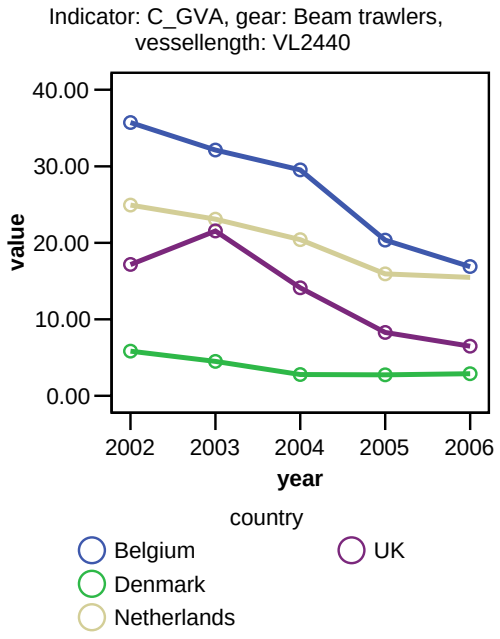


Figure 8.3.2.4 Wage per FTE (k Euro)

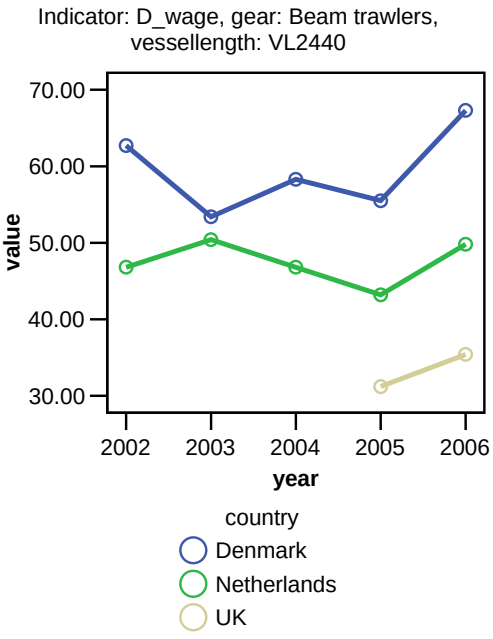


Figure 8.3.2.5 Capacity Utilisation

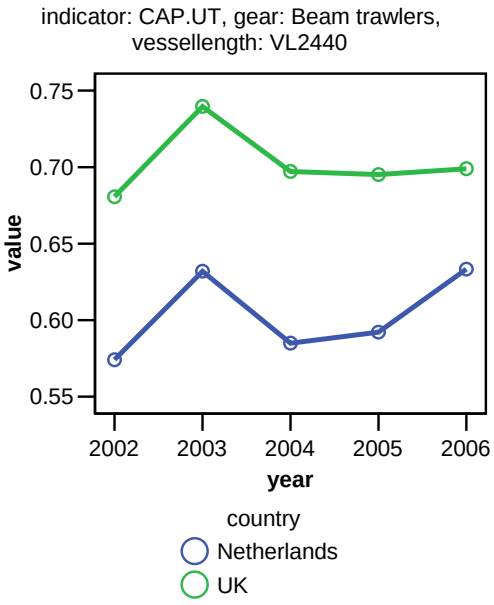


Figure 8.3.2.6 F mortality indicator (species weighted average by country)

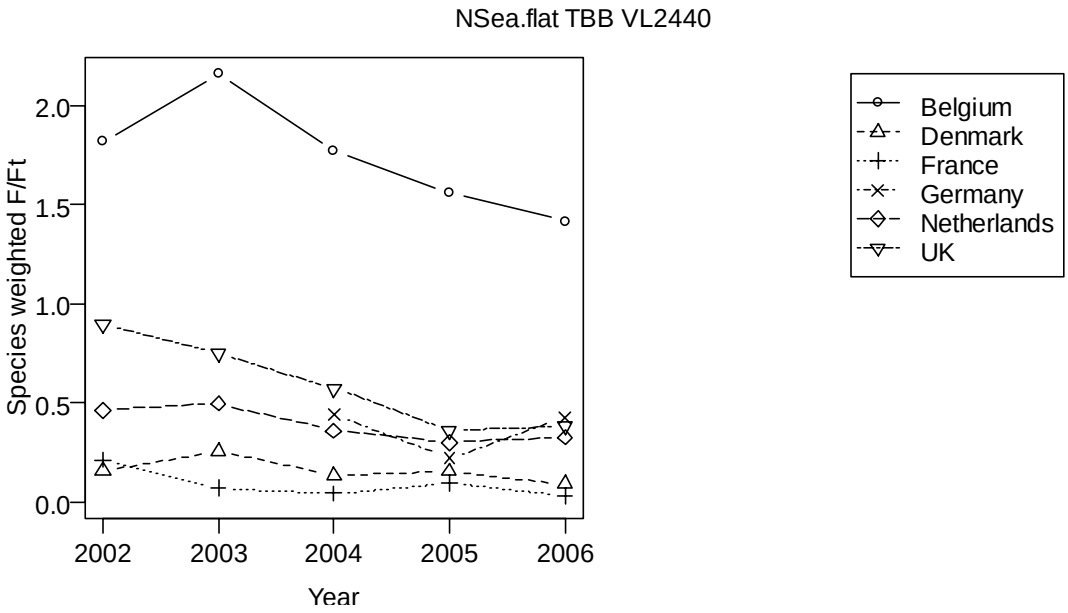
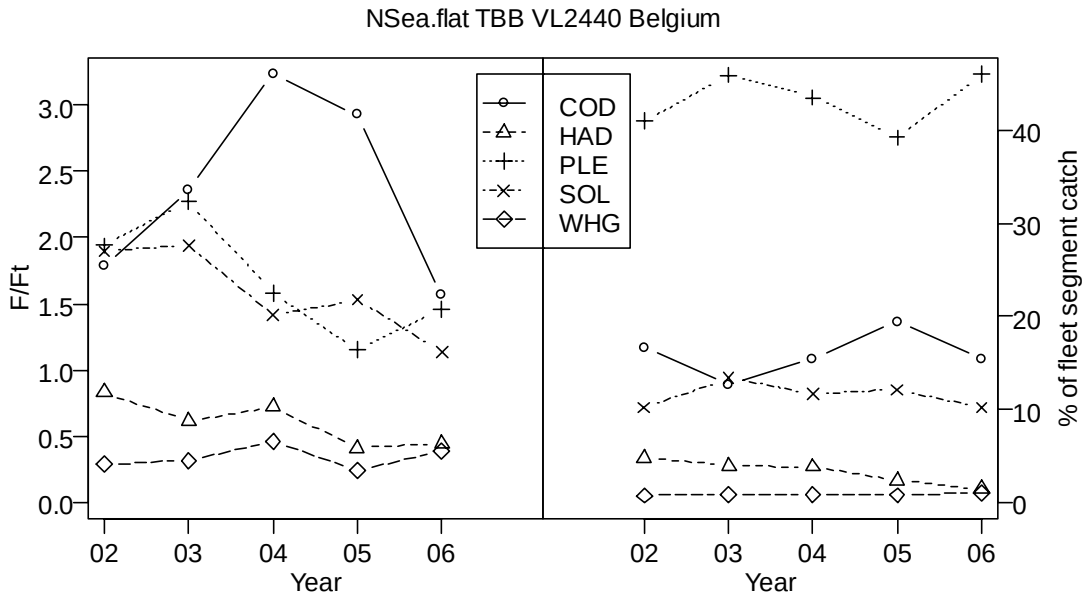


Figure 8.3.2.7 F mortality indicator (Belgium; individual species)



8.3.3. TBB_40m

Only UK and Dutch beam-trawlers over 40 meters are involved in the flatfish fishery in the North Sea. Data were available from both countries, although data coverage of the fixed costs and the wages from the UK was limited to one or two years.

Both fleet segments are in serious economic problems over the last years, but there was some doubt whether the UK data were reliable. With a total Gross value added of over 40 million Euro in 2006, the Dutch beam-trawler segment had the largest contribution to society of all beam-trawler segments. This has been decreasing in recent years due to increasing costs and a decrease in number of vessels. The economic indicators show a decreasing trend which seems to have stopped in 2005, although the return on investment is still negative in 2006.

The capacity utilisation has been high for both fleets, with the UK fleet at almost one in 2005. In 2006 both fleets utilised around 90% of their potential fishing opportunities, set at an arbitrary level of 220 days at sea.

The composite species F/Ft indicator for the UK is below one, although it must be remembered the UK operates vessels in all length classes such that this result is not indicative of the sustainability of the full national beam trawl fleet. The Netherlands >40m fleet has a time averaged indicator in excess of one and this result can be viewed as significant because species representing over 67% of fleet segment catch were used to calculate the value. Figure 8.3.3.6 suggests there may have been a significant drop in species weighted value from 2004 but the value remains above one. Figure 8.3.3.7 shows results for individual species from the Netherlands fleet. F/Ft values are high for plaice, sole and whiting (although whiting values are greater than one in only two years). The drivers of the species weighted result are plaice (42-46% of fleet segment catch) and sole (16-23%). Whiting is not significant (1-2%).

Table 8.3.3 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1 million Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	No. of cases
Netherlands	-3%	5	93%	5	48.7	5	49.0	5	85%	5	1.45	67.7	5
UK	-48%	1	-320%	1	2.8	5	68.9	2	94%	5	0.67	80.6	5

Figure 8.3.3.1 ROI

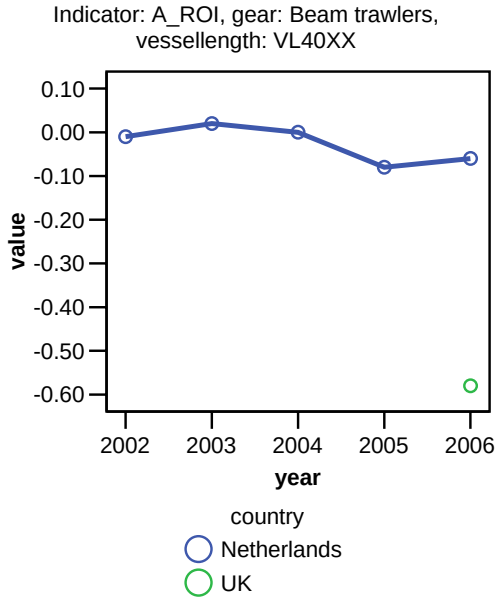


Figure 8.3.3.2 CR/BER

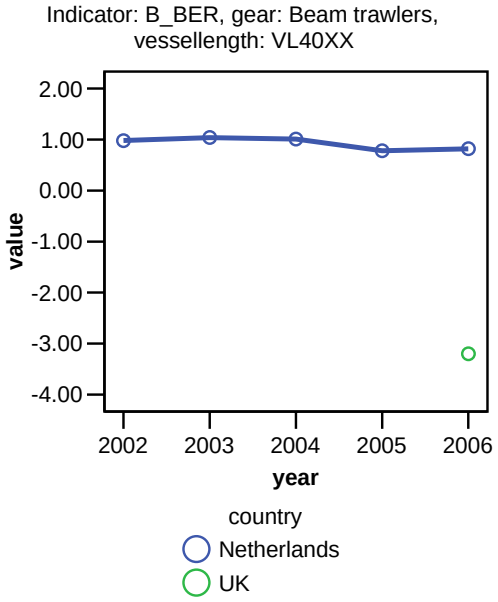


Figure 8.3.3.3 Total GVA (ml. Euro)

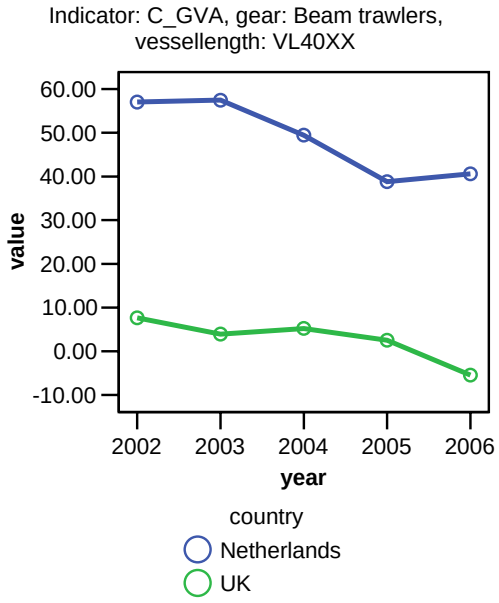


Figure 8.3.3.4 Wage per FTE (kEur)

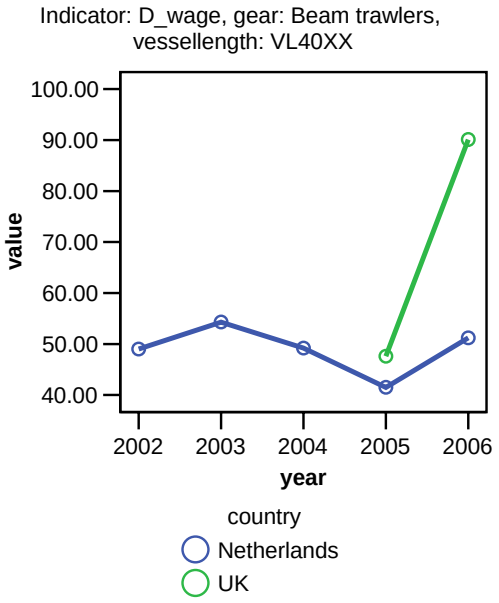


Figure 8.3.3.5 Capacity Utilisation

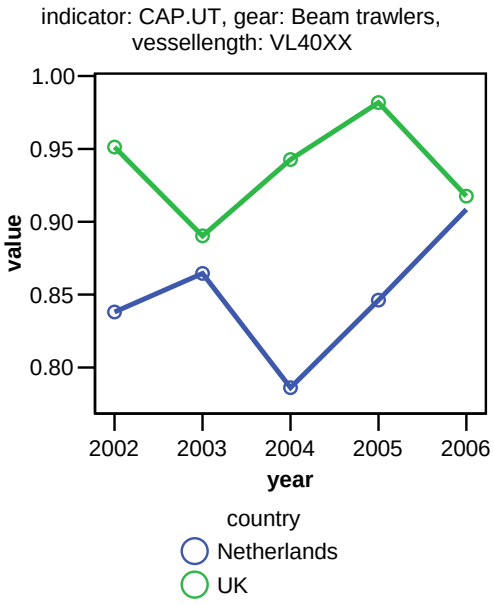


Figure 8.3.3.6 F mortality indicator (species weighted average by country)

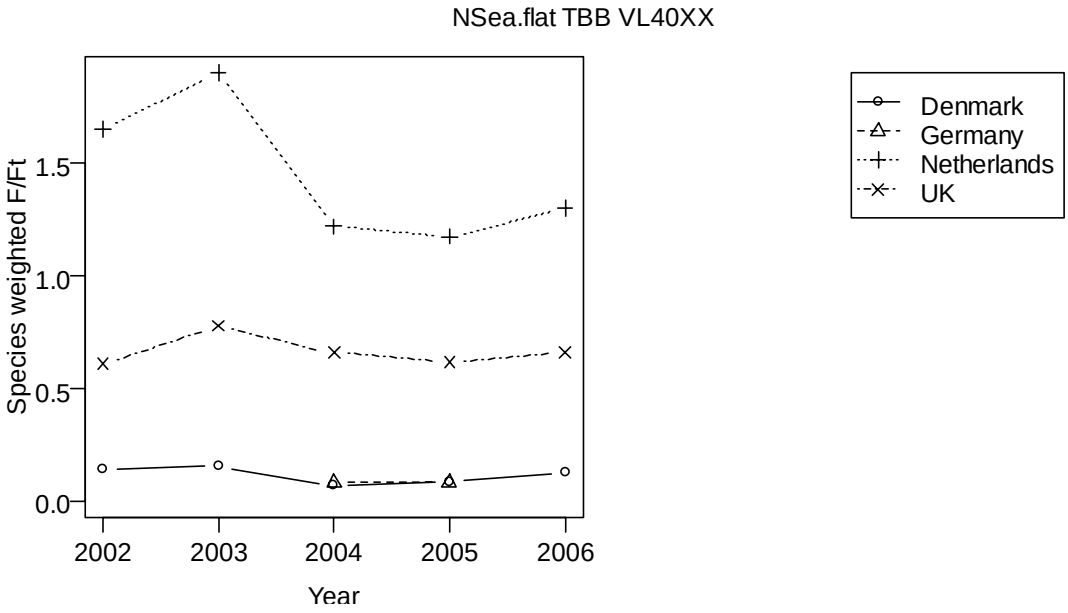
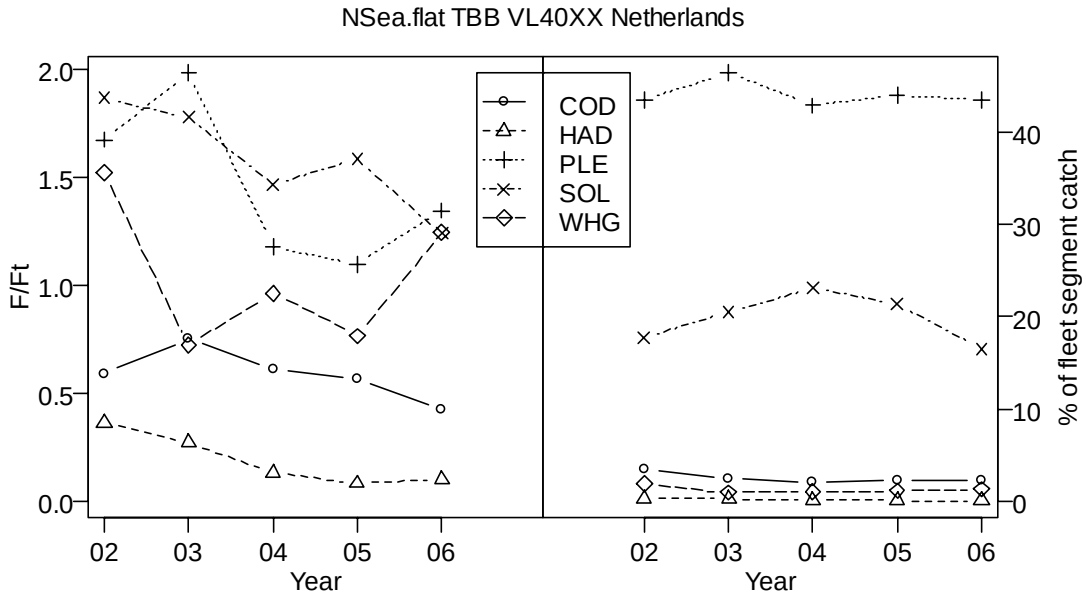


Figure 8.3.3.7 F mortality indicator (Netherlands: individual species)



8.4. Baltic Cod

In the Baltic Sea, cod is one of the three most important target species. All countries around the Baltic Sea are involved in the cod fishery: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. The fleet consists of at least 10.000 vessels but most of them are very small (below 6 m) and often only used part time or in recreational fishing operations. The main gear types in the cod fishery are: bottom otter trawls, gill nets and long-lines. Passive gear types are used in the cod fishery but especially in the case of using gill nets fishermen have often only a very small cod quota to be allowed to sell cod as by-catch (also by-catch in trap nets).

.

There are two cod stocks in the Baltic Sea, western and eastern stock. Both are below long-term reference points (Bpa) and regulated since June 2007 by a long-term management plan. In this plan the reference points for fishing mortality are fixed for the western stock by F=0.6 and the eastern stock by F=0.3. Because for both stocks fishing mortality is still very high quotas for 2008 were reduced by 28% (western) and 5% (eastern).

For the western stock this follows more or less ICES advice to reduce fishing mortality by 40% (ACFM 2007) and limit catches below 13,500 t (estimated catch in 2007 of 28,400 t). With this reduction the stock shall be above Bpa in two years.

In case of the eastern stock ICES advice was still zero catch and changed after the adoption of the long term management plan to a recommendation to reduce the TAC by at least 15% (ACFM 2007). The reduction of the TAC by 5% for 2008 is therefore not sufficient to allow the stock to increase above Bpa in the short term.

Results:

Tables 8.4.1 and 8.4.2 summarise each ‘balance’ indicator by providing (up to) a 5-year average of the results obtained for each fleet segment. Figures 8.4.1.1 to 8.4.2.4 are graphical representations of the ‘balance’ time trends for each indicator in each country.

General comment on the indicator results

The segments DTS VL1224 and VL2440 are most affected by a reduction in cod quotas (TAC for 2008) because for most of these vessels cod is the main target species. The economic data were very limited at the time of the calculations for this report and it was not possible to give a clear picture of these fleet segments. Many countries didn’t provide any data or only for one year or one indicator (see graphs below). Therefore, only three segments are included in the analysis, demersal trawlers 12-24m, 24-40m and Vessels from 12 to 24m using drift and set nets. The results differ much for the trawler segments between Poland and Sweden. But at least the ROI indicator for Sweden with 28% seems relatively high and the numbers for Poland very low (esp. GVA). The larger vessel DTS 24-40m the ROI indicator suggests a bad economic situation for the fleet (overcapitalization). For the segment DFN 12-24m the German data seem to be insufficient because of a ROI of 480%. The small negative ROI in Poland and a 2% ROI for Sweden seem reasonable.

There is no real overall conclusion for the cod fishery possible because of the poor data for most of the states. The bad stock situation may result in further reduction of TAC and

therefore lower catch possibilities in the future. The economic performance of the fleet segments depending on cod catches may further deteriorate.

8.4.1. DTS_12-24m

Table 8.4.1 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1 million Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	No. of cases	Catch / Biomass indicator	No. of cases
Poland	-1%	3	77%	3	1.8	3	n/a	0	0.48	5				
Sweden	28%	1	900%	1	24.0	5	6.4	1	0.52	2				

***** Economic indicator graphs not useable******

Figure 8.4.1.1 GVA

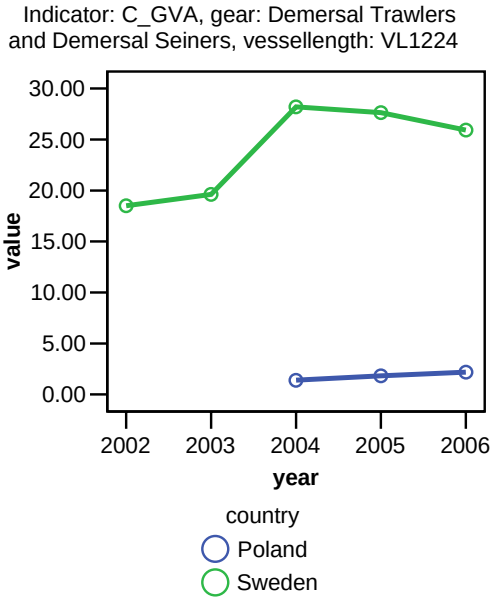


Figure 8.4.1.2 Capacity Utilisation

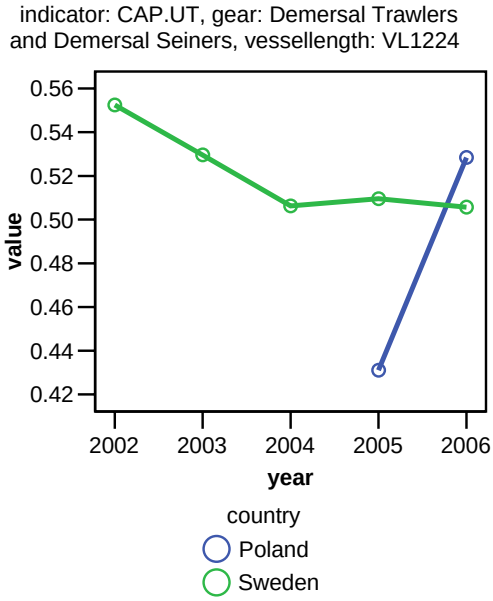


Figure 8.4.1.3 F mortality indicator

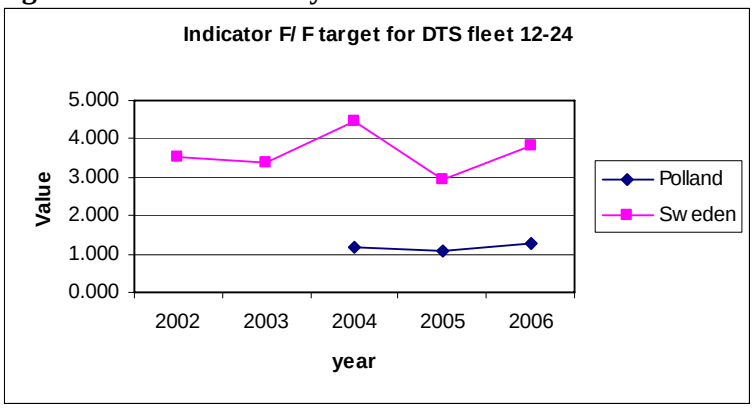
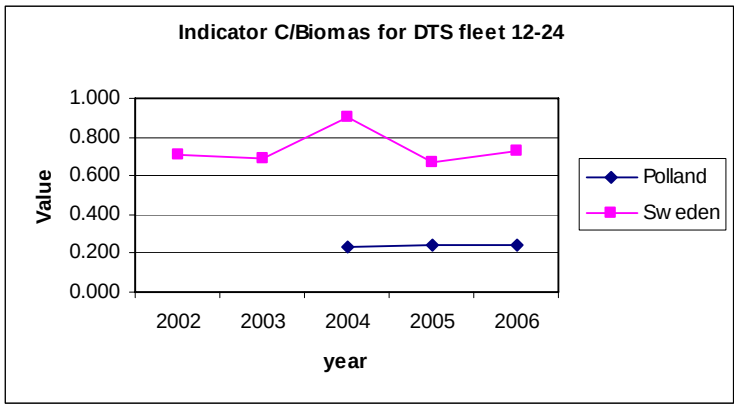


Figure 8.4.1.4 Catch / Biomass indicator



8.4.2. DTS_24-40m

Table 4.4.2 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	No. of cases	Catch / Biomass indicator	Nc o case
Poland	-7%	3	-11%	3	0.0	3	n/a	0	0.58	2				
Sweden	-5%	1	62%	1	4.6	5	7.0	1	0.69	5				

***** Economic indicator graphs not useable******

Figure 8.4.2.1 GVA

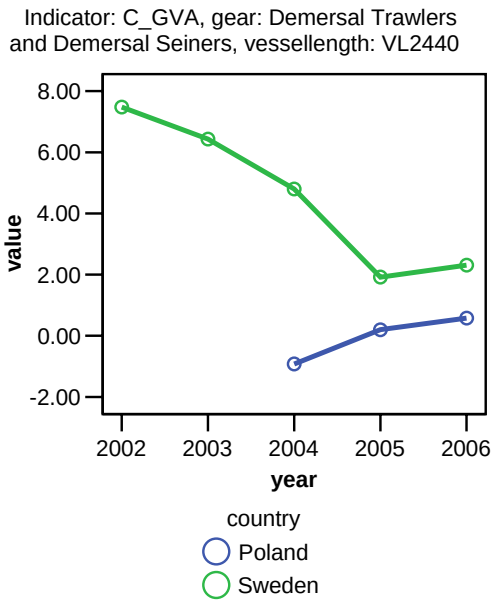


Figure 8.4.2.2 Capacity Utilisation

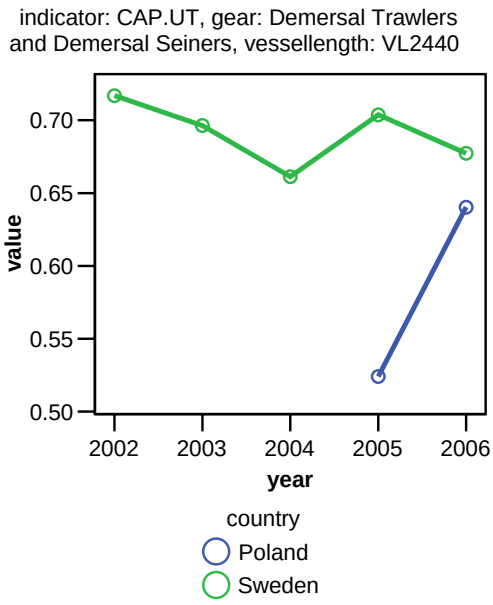


Figure 8.4.2.3 F Mortality indicator

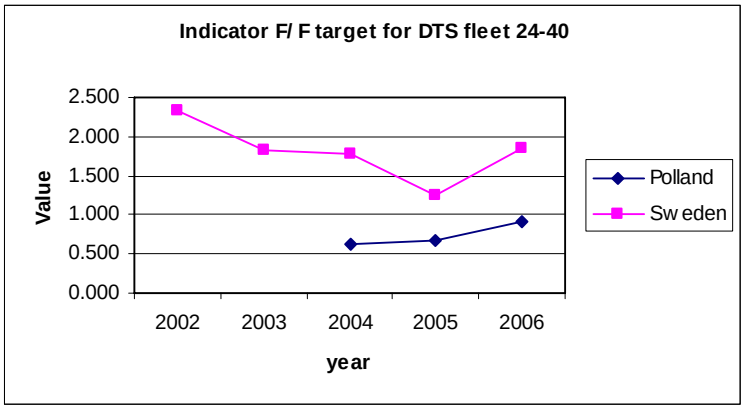
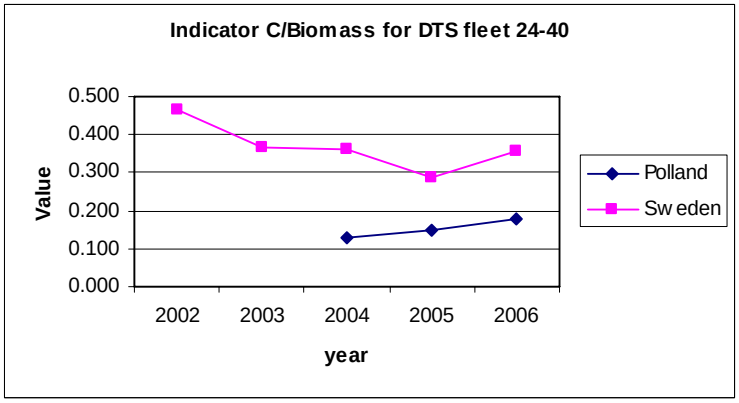


Figure 8.4.2.4 Catch / Biomass indicator



8.5. Mediterranean Swordfish

For Greece the composite CPUE indicator shows a considerable fall before a sharp rise in the 2006. The proportion of swordfish in the catch has grown steadily but the CPUE for this species actually dipped in 2003 and only rose significantly above the 2002 value in 2006. The CPUE for 'ALL' species fell steadily between 2002 and 2005 before improving in 2006. For Italy CPUE values are only available for 2004-2006 but the composite index indicates a rising CPUE. The data files show that the biggest proportion of the catch is accounted for by swordfish (~ 50%) but that the CPUE of this species has been relatively steady. Sharp rises in the CPUE of two other categories have contributed to the species averaged result. The CPUE of unspecified fin fishes was considerably higher in 2005 than 2004 (or 2006) and that of Albacore rose sharply in 2006.

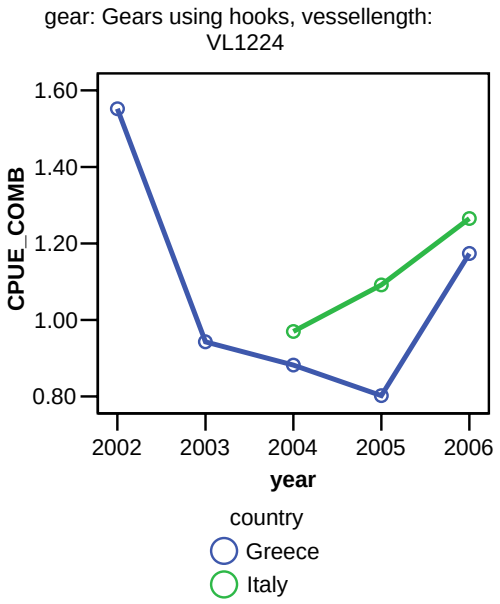
8.5.1. HOK_12-24m

Table 8.4.1 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	Catch / Biomass indicator	% of segment catch
Greece	8,87	3	16,84	3	16,02	3	NA	0			NA	NA	NA	NA
Italy	0,41	1	2,89	1	91,42	3	16.50	1			NA	NA	NA	NA

***** Economic and social indicator graphs not useable******
*****No Capacity Utilisation data available for this segment******

Figure 8.1.1.5 Composite CPUE



8.6. Mediterranean trawler fishery

The composite CPUE time series is given in Figure 8.1.1.8. Over a five year time period no significant trend in this measure can be determined. The next most important species for this fleet segment is Hake (6-8% of catch by weight) and in latter years deep water shrimp (rose to 6.5% of catch by weight). Species code 'ALL' accounted for the majority of catches (approximately 50% of catch by weight) and to a large extent the pattern of the composite measure follows the pattern for this species.

8.6.1. Beam trawlers_12-24m

Table 8.4.1 Indicator Summary Table (5 year average)

Country	ROI	No. of cases	CR/BEP	No. of cases	GVA (1,000,000 Euro)	No. of cases	Wage per FTE (1,000 Euro)	No. of cases	Capacity Utilisation	No. of cases	F mortality indicator	% of segment catch	Catch / Biomass indicator	% of segment catch
Greece	1,20	3	12,27	3	23,10	3	NA	0			NA	NA	NA	
Italy	0,05	1	1,16	1	12,83	3	14,9	1			NA	NA	NA	

***** Economic and social indicator graphs not useable******
*****No Capacity Utilisation data available for this segment******

Figure 8.1.1.8 Composite CPUE

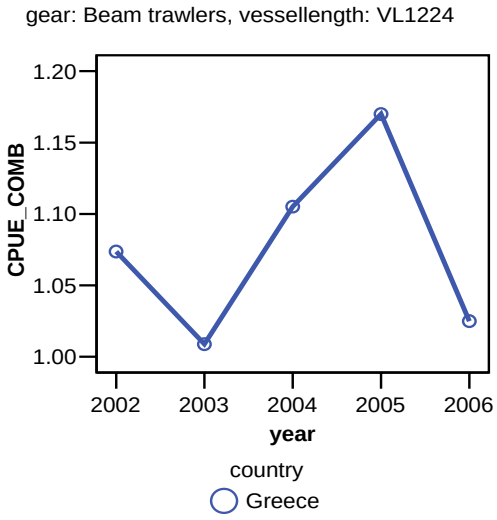


Figure 8.1.1.8 CPUE (Warty Dory)

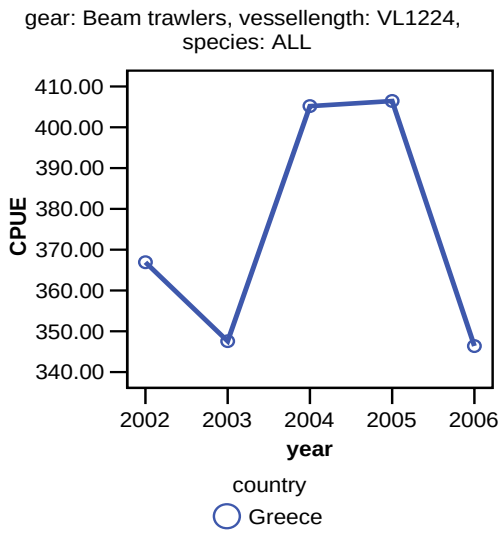


Figure 8.1.1.8 CPUE (Deep-water rose shrimp)

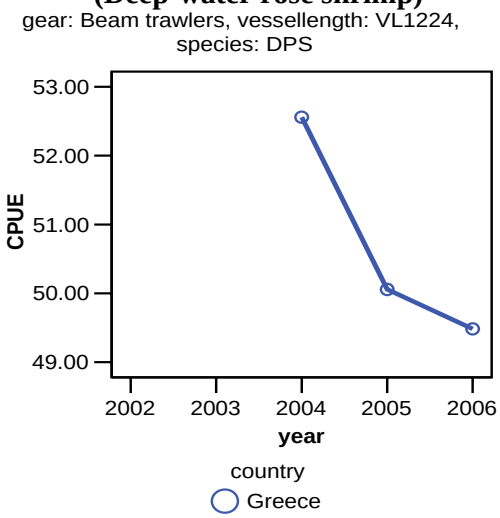


Figure 8.1.1.8 CPUE (Hake)

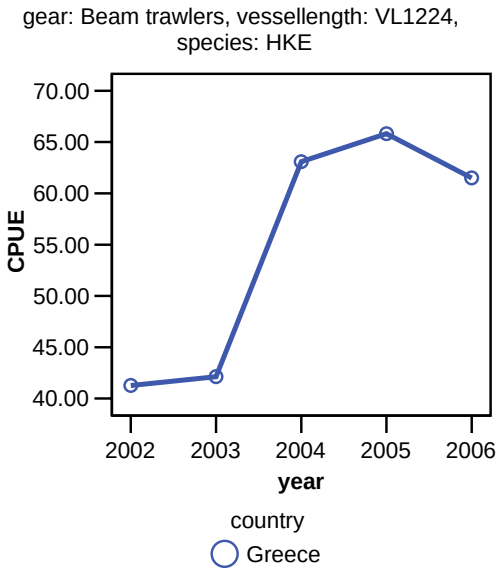
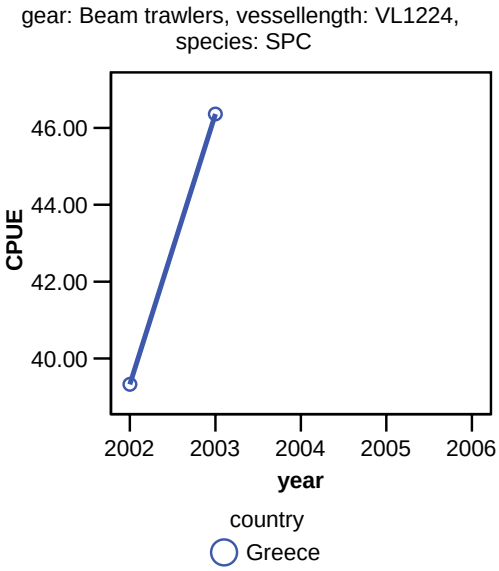


Figure 8.1.1.8 CPUE (Picarel)



9. ToR 5

Provide orientation for follow-up work to be done for improving the indicators.

The proposed reform DCR, due in 2009, gives greater clarity in terms of parameter definitions and clearer guidance on the correct procedures for improving data collection and reporting methodologies. This should ensure that there will be an improvement in the quality and comparability of the biological, socio-economic and transversal data reported by each MS. Therefore, it is hoped that as time moves on, the results of the 'balance' indicators proposed in this report should improve in terms of accuracy.

In most cases each 'balance' indicator is calculated at fleet segment level. While the idea of calculating the indicators on a metier level may be appealing, trip by trip economic data would be needed, and there are no provisions for this level of data collection in the proposed reform DCR.

Concerning fleet aggregation levels, the WG recommends that each MS conducts a thorough analysis of what lies beneath the indicator results by considering, for example, the distribution and variance of the economic parameters that produce the economic indicators. This would provide useful back up information and may provide a greater understanding of the results.

For some indicators, the point that indicates 'balance' has yet to be defined. This is a particular issue for the social indicators e.g. GVA and crew wages; where valid arguments could be made for several reasonable reference points. The WG suggests that the appropriate level of 'balance' for each indicator requires formal ratification.

A relatively simple 'traffic light' system will enable MS's to interpret each balance indicator individually *and* collectively in a relatively straightforward manner. Once the desired target level for each indicator is clearer, appropriate tolerance levels can be established.

In relation to discards work, the WG requests that the segmentation for discards data calls be harmonised with the segmentation used in the DCR. Currently, some case studies are not comparable with existing DCR parameters, and for this research, when calculating biological indicators, the WG were required to make assumptions regarding the level of discards in relation to landings because of this issue. If the data used for discards exercises are consistent with the DCR parameters then the discard to landings ratios can be calculated from empirical data, improving the quality of assessments.

.

In relation to the biological indicators, further work is required to consider whether it is feasible to treat the 'H' indicator in the same way as the 'F' indicator at fleet segment level so that species with an unknown F*msy* can be combined into a single indicator with species where F*msy* is known e.g. Nephrops.

Also concerning biological indicators, for species subject to stock assessments focus has been put on comparing current mortality to long term target rates (Ft). Most assessed species also

have defined precautionary and limit mortality rates (Fpa and Flim)[20]. Use of F/Fpa (and possibly F/Flim) ratios as well as F/Ft might allow better judgements on status of a fleet segment with respect to biological sustainability.

The WG suggests that the capacity utilisation indicator could be improved with the use of Data Envelope Analysis. This method, along with stochastic production functions are currently being explored in the CAFÉ project.

Bio-economic models

Ideally, the optimal scenario would be to produce bio-economic models for every fishery, and have accurate biological and economic data with which to populate the model. This would mean a long-term Maximum Economic Yield (MEY) can be confidently calculated, and used as a reference point with which fisheries managers can take the decisions on fleet structure and so on. Given the multi-species multi-gear nature of most fisheries, this is merely impossible to achieve.

The report "Investing the Scientific basis for a follow up to the fourth generation of Multi-annual Guidance Programme (MAGP IV) 3º Meeting" made by an earlier subgroup on balance between resources and exploitation contains a section reviewing and evaluating bio-economic models [SEC (2003) 74]. The definitions, distinctions and conclusions on bio-economic models and their use when assessing capacity and balancing resources and exploitation are highly relevant.

To a certain extent, the recommendations in the report have been complied with, for instance the increased quality and detail of economic data. Nevertheless, an institutional framework and support is still needed in order to develop useful bio-economic models applicable to all European fisheries. Despite this, the prospective gains from developing applicable bio-economic EU models are still promising and offset the abovementioned difficulties.

In summary, the present development of indicators is not conclusive but ideally part of an ongoing process eventually leading to the use of (numerical) bio-economic models in the assessment of balance between resources and exploitation. This will presumably entail the advised indicators developing into a methodology or analysis in stages and further towards the use of bio-economic models.

---

[20] From ICES workshop on limit and target reference points (WKREF)

> "…the ICES approach to advice is that for stocks and fisheries there should be a high probability that spawning stock biomass (SSB) is above a limit Blim below which recruitment becomes impaired or the dynamics of the stock are unknown, and that fishing mortality is below a value Flim that will drive the spawning stock to that biomass limit. The word 'impaired' is synonymous with the concept that on average recruitment becomes systematically reduced as biomass declines below a certain point due to the effect of fishing. Because of uncertainty in the annual estimation of F and SSB, ICES has defined operational reference points, Bpa (higher than Blim), and Fpa (lower than Flim), where the subscript pa stands for precautionary approach. When a stock is estimated to be at Bpa there should be a high probability that it will be above Blim and similarly if F is estimated to be at Fpa there should be a low probability that F is higher than Flim."

10. ACKNOWLEDGEMENTS

11. REFERENCES

ICES 2007. WGNSSK

ICES. 2007. Report of the Workshop on Limit and Target Reference Points [WKREF], 29 January – 2 February 2007, Gdynia, Poland. Document Number. 89 pp

SEC (2003) 74---- mentioned in section 9

Commission Staff working paper: Report of Joint SGECA-SGRST working group on bio-economic modelling

12. APPENDICES

Appendix A: North Sea Demersal indicator data tables

A.1 Social and Economic indicators

Indicator	gear	vessellength	country	2002	2003	2004	2005	2006
A_ROI	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Combining mobile & passive gears	VL1224	Denmark	-0.03	-0.03	-0.09	-0.07	-0.05
A_ROI	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Denmark	0.00	-0.16	-0.43	-0.13	-0.29
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	France	0.04	-0.08	-0.09	-0.09	-0.07
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Germany	#NULL!	#NULL!	#NULL!	-0.96	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Netherlands	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	UK	#NULL!	#NULL!	#NULL!	-0.69	-0.35
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Denmark	-0.07	-0.14	-0.18	-0.10	-0.01
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	France	-0.08	-0.10	-0.11	-0.11	-0.12
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Germany	#NULL!	#NULL!	-0.86	-0.43	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Netherlands	-0.09	-0.09	-0.13	-0.07	-0.10
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	UK	#NULL!	#NULL!	#NULL!	-0.24	-0.13
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	France	-0.07	-0.08	-0.09	-0.15	-0.12
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Germany	#NULL!	#NULL!	#NULL!	7.59	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Netherlands	0.00	0.03	0.01	0.25	0.19
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	-0.05
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	-0.29	-0.21
A_ROI	Demersal Trawlers and Demersal Seiners	VL40XX	France	-0.25	-0.27	-0.25	-0.15	-0.21
A_ROI	Demersal Trawlers and Demersal Seiners	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL40XX	UK	#NULL!	#NULL!	#NULL!	-0.26	-0.38
B_BER	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Combining mobile & passive gears	VL1224	Denmark	0.81	0.75	0.51	0.57	0.75
B_BER	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Denmark	0.99	0.29	-1.08	0.21	0.06
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	France	1.19	0.73	0.63	0.65	0.68
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Germany	#NULL!	#NULL!	#NULL!	-0.26	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Netherlands	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	UK	#NULL!	#NULL!	#NULL!	-0.65	-0.13
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Denmark	0.68	0.40	0.19	0.53	0.96
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	France	0.62	0.50	0.45	0.40	0.41
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Germany	#NULL!	#NULL!	0.01	0.49	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Netherlands	0.89	0.83	0.76	0.82	0.76
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	UK	#NULL!	#NULL!	#NULL!	0.47	0.50
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	France	0.62	0.56	0.51	0.26	0.35
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Germany	#NULL!	#NULL!	#NULL!	5.40	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Netherlands	1.00	1.06	1.03	1.65	1.50
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.62
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	0.39	0.16
B_BER	Demersal Trawlers and Demersal Seiners	VL40XX	France	-0.05	-0.42	-0.42	0.16	-0.03
B_BER	Demersal Trawlers and Demersal Seiners	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL40XX	UK	#NULL!	#NULL!	#NULL!	0.47	-0.54
C_GVA	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Combining mobile & passive gears	VL1224	Denmark	10.84	7.76	8.92	8.93	10.43
C_GVA	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Denmark	1.52	1.85	0.83	1.11	0.74
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	France	28.77	24.20	21.71	19.71	23.10
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Germany	#NULL!	#NULL!	#NULL!	-0.07	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Netherlands	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	UK	#NULL!	3.87	3.62	4.71	7.10
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Denmark	49.40	36.24	28.87	31.87	37.36
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	France	80.85	114.29	101.29	83.01	82.99
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Germany	#NULL!	#NULL!	3.79	5.89	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Netherlands	1.96	2.54	2.63	2.22	1.93
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	UK	81.31	51.96	62.13	62.17	51.17
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	France	30.89	35.19	32.62	21.50	22.63
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Germany	#NULL!	#NULL!	#NULL!	11.82	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Netherlands	4.42	4.75	4.43	5.50	5.13
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	7.48	6.43	4.80	1.92	2.31
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	UK	101.88	33.15	45.88	29.69	22.99
C_GVA	Demersal Trawlers and Demersal Seiners	VL40XX	France	16.50	7.67	6.84	12.67	8.17
C_GVA	Demersal Trawlers and Demersal Seiners	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL40XX	UK	20.64	23.04	19.43	14.77	0.33
D_wage	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	26.90
D_wage	Combining mobile & passive gears	VL1224	Denmark	51.00	51.80	47.20	49.80	53.80
D_wage	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Denmark	36.20	48.70	51.70	57.50	54.40
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	France	32.80	31.60	33.30	32.30	32.00
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Germany	#NULL!	#NULL!	#NULL!	37.50	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Netherlands	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	UK	#NULL!	#NULL!	#NULL!	27.90	26.40
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Denmark	43.40	44.20	42.40	47.00	53.90
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	France	28.40	42.30	41.40	39.00	41.20
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Germany	#NULL!	#NULL!	33.20	35.90	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Netherlands	39.20	40.50	39.40	42.10	41.60
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	UK	#NULL!	#NULL!	#NULL!	26.30	25.50
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	France	31.90	41.50	40.70	36.40	40.90
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Germany	#NULL!	#NULL!	#NULL!	43.40	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Netherlands	39.20	44.50	44.50	52.60	52.70
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	7.00
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	36.10	42.20
D_wage	Demersal Trawlers and Demersal Seiners	VL40XX	France	61.70	52.00	57.40	54.10	60.90
D_wage	Demersal Trawlers and Demersal Seiners	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL40XX	UK	#NULL!	#NULL!	#NULL!	59.30	48.40

A.2 Biological indicators

Fleet segment	landings_sum	country	fishingtech	year_	vessellength	sum.main.sp	main.sp.pc	weighted.mean.F.Ft
2002DenmarkDTSVL0012	3680275	Denmark	DTS	2002	VL0012	38272	1.04	0.00
2002DenmarkDTSVL1224	12294211	Denmark	DTS	2002	VL1224	2237915	18.20	0.38
2002FranceDTSVL0012	106071.2	France	DTS	2002	VL0012	90430.5	85.25	0.15
2002FranceDTSVL1224	4535752.1	France	DTS	2002	VL1224	2567941.7	56.62	1.83
2002FranceDTSVL2440	1839922.6	France	DTS	2002	VL2440	823779	44.77	0.59
2002FranceDTSVL40XX	24876361	France	DTS	2002	VL40XX	1305822	5.25	0.37
2002NetherlandsDTSVL0012	35745	Netherlands	DTS	2002	VL0012	622	1.74	0.00
2002NetherlandsDTSVL1224	1812630	Netherlands	DTS	2002	VL1224	969564	53.49	0.28
2002NetherlandsDTSVL2440	5282999	Netherlands	DTS	2002	VL2440	2096324	39.68	1.08
2002SwedenDTSVL1224	661692	Sweden	DTS	2002	VL1224	238452	36.04	Inf
2002SwedenDTSVL2440	3890454	Sweden	DTS	2002	VL2440	1432152	36.81	Inf
2002UKDTSVL0012	2302928.7	UK	DTS	2002	VL0012	505605.1	21.95	0.01
2002UKDTSVL1224	56541756.2	UK	DTS	2002	VL1224	31876576.7	56.38	0.78
2002UKDTSVL2440	57291334	UK	DTS	2002	VL2440	38164684.8	66.62	0.86
2002UKDTSVL40XX	906352.8	UK	DTS	2002	VL40XX	350485.8	38.67	0.01
2003DenmarkDTSVL0012	3547683	Denmark	DTS	2003	VL0012	28458	0.80	0.01
2003DenmarkDTSVL1224	12568748	Denmark	DTS	2003	VL1224	1424352	11.33	0.43
2003FranceDTSVL0012	53368.7	France	DTS	2003	VL0012	44529.5	83.44	0.16
2003FranceDTSVL1224	3100790	France	DTS	2003	VL1224	1603479	51.71	2.04
2003FranceDTSVL2440	1761456.5	France	DTS	2003	VL2440	742843.5	42.17	0.89
2003FranceDTSVL40XX	18854323.3	France	DTS	2003	VL40XX	1382786	7.33	0.42
2003NetherlandsDTSVL0012	42263	Netherlands	DTS	2003	VL0012	223	0.53	0.00
2003NetherlandsDTSVL1224	2010720	Netherlands	DTS	2003	VL1224	849541	42.25	0.33
2003NetherlandsDTSVL2440	4718242	Netherlands	DTS	2003	VL2440	1546127	32.77	1.15
2003SwedenDTSVL1224	500824	Sweden	DTS	2003	VL1224	156754	31.30	Inf
2003SwedenDTSVL2440	3416328	Sweden	DTS	2003	VL2440	1150258	33.67	Inf
2003UKDTSVL0012	2108805	UK	DTS	2003	VL0012	276149.5	13.10	0.01
2003UKDTSVL1224	46252634.5	UK	DTS	2003	VL1224	23013988.1	49.76	0.66
2003UKDTSVL2440	40824958.8	UK	DTS	2003	VL2440	26890230.2	65.87	0.71
2003UKDTSVL40XX	940919.6	UK	DTS	2003	VL40XX	182638.9	19.41	0.01
2004DenmarkDTSVL0012	5837823	Denmark	DTS	2004	VL0012	38396	0.66	0.01
2004DenmarkDTSVL1224	20852438	Denmark	DTS	2004	VL1224	1724727	8.27	0.26
2004FranceDTSVL0012	54092.9	France	DTS	2004	VL0012	39180.4	72.43	0.11
2004FranceDTSVL1224	2031752.6	France	DTS	2004	VL1224	817126.1	40.22	1.72
2004FranceDTSVL2440	2128413	France	DTS	2004	VL2440	815084	38.30	1.75
2004FranceDTSVL40XX	8508414	France	DTS	2004	VL40XX	375134	4.41	0.20
2004GermanyDTSVL1224	2539513	Germany	DTS	2004	VL1224	1695123	66.75	0.86
2004GermanyDTSVL2440	8429492	Germany	DTS	2004	VL2440	2957799	35.09	0.91
2004GermanyDTSVL40XX	4242326	Germany	DTS	2004	VL40XX	122316	2.88	0.05
2004NetherlandsDTSVL0012	25855	Netherlands	DTS	2004	VL0012	1549	5.99	0.00
2004NetherlandsDTSVL1224	1912300	Netherlands	DTS	2004	VL1224	764793	39.99	0.43
2004NetherlandsDTSVL2440	3975285	Netherlands	DTS	2004	VL2440	1000897	25.18	0.52
2004SwedenDTSVL1224	1207714	Sweden	DTS	2004	VL1224	208256	17.24	Inf
2004SwedenDTSVL2440	2810320.2	Sweden	DTS	2004	VL2440	558466	19.87	Inf
2004UKDTSVL0012	2728978.8	UK	DTS	2004	VL0012	426194.3	15.62	0.03
2004UKDTSVL1224	48291122.6	UK	DTS	2004	VL1224	25598176.8	53.01	0.83
2004UKDTSVL2440	42896462.3	UK	DTS	2004	VL2440	29918736	69.75	0.80
2004UKDTSVL40XX	1210857.6	UK	DTS	2004	VL40XX	376478.4	31.09	0.01
2005DenmarkDTSVL0012	5084860	Denmark	DTS	2005	VL0012	37809	0.74	0.01
2005DenmarkDTSVL1224	15824194	Denmark	DTS	2005	VL1224	1415378	8.94	0.20
2005FranceDTSVL0012	20057	France	DTS	2005	VL0012	16442	81.98	0.07
2005FranceDTSVL1224	2090576.7	France	DTS	2005	VL1224	746706.7	35.72	0.70
2005FranceDTSVL2440	1389039	France	DTS	2005	VL2440	456816	32.89	0.43
2005FranceDTSVL40XX	13070390	France	DTS	2005	VL40XX	999081	7.64	0.43
2005GermanyDTSVL1224	1658131	Germany	DTS	2005	VL1224	836785	50.47	0.31
2005GermanyDTSVL2440	4125566	Germany	DTS	2005	VL2440	1057604	25.64	0.40
2005GermanyDTSVL40XX	3176144	Germany	DTS	2005	VL40XX	62207	1.96	0.03
2005NetherlandsDTSVL0012	20489	Netherlands	DTS	2005	VL0012	1373	6.70	0.00
2005NetherlandsDTSVL1224	1606684	Netherlands	DTS	2005	VL1224	698382	43.47	0.08
2005NetherlandsDTSVL2440	3780962	Netherlands	DTS	2005	VL2440	663005	17.54	0.23
2005SwedenDTSVL0012	1174	Sweden	DTS	2005	VL0012	1174	100.00	0.08
2005SwedenDTSVL1224	578616	Sweden	DTS	2005	VL1224	88134	15.23	2.20
2005SwedenDTSVL2440	3112383.2	Sweden	DTS	2005	VL2440	619983.4	19.92	Inf
2005UKDTSVL0012	3461022.7	UK	DTS	2005	VL0012	414837.2	11.99	0.06
2005UKDTSVL1224	52026350.6	UK	DTS	2005	VL1224	26387614.2	50.72	0.75
2005UKDTSVL2440	47275520.8	UK	DTS	2005	VL2440	32818794.9	69.42	0.78
2005UKDTSVL40XX	2628006.3	UK	DTS	2005	VL40XX	729667.9	27.77	0.04
2006DenmarkDTSVL0012	4597864	Denmark	DTS	2006	VL0012	59363	1.29	0.01
2006DenmarkDTSVL1224	13848341	Denmark	DTS	2006	VL1224	1542504	11.14	0.31
2006FranceDTSVL0012	2739	France	DTS	2006	VL0012	2294	83.75	0.01
2006FranceDTSVL1224	2695428.4	France	DTS	2006	VL1224	1449469.2	53.78	2.15
2006FranceDTSVL2440	2137801.5	France	DTS	2006	VL2440	1287825.5	60.24	2.00
2006FranceDTSVL40XX	17780515	France	DTS	2006	VL40XX	532860	3.00	0.34
2006GermanyDTSVL1224	4073631	Germany	DTS	2006	VL1224	1914941	47.01	1.32
2006GermanyDTSVL2440	7899099	Germany	DTS	2006	VL2440	2711639	34.33	0.81
2006GermanyDTSVL40XX	6300874	Germany	DTS	2006	VL40XX	166846	2.65	0.10
2006NetherlandsDTSVL0012	27370	Netherlands	DTS	2006	VL0012	15727	57.46	0.04
2006NetherlandsDTSVL1224	1769688	Netherlands	DTS	2006	VL1224	793827	44.86	0.11
2006NetherlandsDTSVL2440	2566005	Netherlands	DTS	2006	VL2440	382288	14.90	0.05
2006SwedenDTSVL0012	6724	Sweden	DTS	2006	VL0012	6724	100.00	0.40
2006SwedenDTSVL1224	475612	Sweden	DTS	2006	VL1224	43776	9.20	Inf
2006SwedenDTSVL2440	2122341.2	Sweden	DTS	2006	VL2440	495508	23.35	Inf
2006UKDTSVL0012	4453730.3	UK	DTS	2006	VL0012	1005371.9	22.57	0.23
2006UKDTSVL1224	47837577.5	UK	DTS	2006	VL1224	22842082.7	47.75	1.40
2006UKDTSVL2440	43221161.2	UK	DTS	2006	VL2440	29081444.2	67.29	1.34
2006UKDTSVL40XX	4208655.9	UK	DTS	2006	VL40XX	1588644.7	37.75	0.18

A.3 Technical Indicator

indicator	gear	vessellength	country	2002	2003	2004	2005	2006
Capacity Utilisation	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Combining mobile & passive gears	VL1224	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL0012	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL0012	Germany	0.47	0.45	0.48	0.48	0.53
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL0012	Netherlands	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL1224	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL1224	Germany	0.62	0.66	0.61	0.59	0.54
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL1224	Netherlands	0.73	0.72	0.77	0.83	0.92
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL1224	UK	0.59	0.62	0.61	0.59	0.56
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL2440	Germany	0.76	0.81	0.87	0.83	0.83
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL2440	Netherlands	0.79	0.83	0.82	0.76	0.70
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL2440	UK	0.73	0.70	0.76	0.69	0.68
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL40XX	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL40XX	Germany	0.79	1.16	0.97	0.95	1.00
Capacity Utilisation	Demersal Trawlers and Demersal Seiners	VL40XX	UK	55.18	51.49	50.33	39.46	38.14

APPENDIX B: NORTHERN HAKE DATA TABLES

B.1 Social and Economic indicators

Indicator	gear	vessellength	country	2002	2003	2004	2005	2006
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	France	-0.08	-0.10	-0.11	-0.11	-0.12
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	France	-0.07	-0.08	-0.09	-0.15	-0.12
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	-0.29	-0.21
A_ROI	Drift nets and fixed nets	VL1224	France	-0.08	-0.11	-0.09	-0.04	-0.08
A_ROI	Drift nets and fixed nets	VL2440	France	#NULL!	#NULL!	#NULL!	0.04	-0.03
A_ROI	Drift nets and fixed nets	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Gears using hooks	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	-0.07
A_ROI	Gears using hooks	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Polyvalent passive gears	VL1224	Denmark	-0.07	-0.07	-0.06	-0.04	-0.02
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	France	0.62	0.50	0.45	0.40	0.41
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	France	0.62	0.56	0.51	0.26	0.35
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	0.39	0.16
B_BER	Drift nets and fixed nets	VL1224	France	0.75	0.59	0.68	0.83	0.68
B_BER	Drift nets and fixed nets	VL2440	France	#NULL!	#NULL!	#NULL!	1.14	0.88
B_BER	Drift nets and fixed nets	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Gears using hooks	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	0.76
B_BER	Gears using hooks	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Polyvalent passive gears	VL1224	Denmark	0.68	0.69	0.69	0.81	0.91
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	France	80.85	114.29	101.29	83.01	82.99
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	France	30.89	35.19	32.62	21.50	22.63
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Spain	#NULL!	91.31	91.34	105.92	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	UK	101.88	33.15	45.88	29.69	22.99
C_GVA	Drift nets and fixed nets	VL1224	France	25.74	30.80	32.48	34.12	31.04
C_GVA	Drift nets and fixed nets	VL2440	France	#NULL!	#NULL!	#NULL!	12.69	9.69
C_GVA	Drift nets and fixed nets	VL2440	Spain	#NULL!	#NULL!	0.97	1.38	#NULL!
C_GVA	Gears using hooks	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	3.91
C_GVA	Gears using hooks	VL2440	Spain	#NULL!	57.76	122.03	63.70	#NULL!
C_GVA	Polyvalent passive gears	VL1224	Denmark	24.99	20.00	16.64	18.71	18.82
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	France	28.40	42.30	41.40	39.00	41.20
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	France	31.90	41.50	40.70	36.40	40.90
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Spain	#NULL!	13.60	16.80	13.40	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	UK	#NULL!	#NULL!	#NULL!	36.10	42.20
D_wage	Drift nets and fixed nets	VL1224	France	26.40	35.20	37.70	41.40	43.00
D_wage	Drift nets and fixed nets	VL2440	France	#NULL!	#NULL!	#NULL!	33.50	34.60
D_wage	Drift nets and fixed nets	VL2440	Spain	#NULL!	#NULL!	31.10	11.20	#NULL!
D_wage	Gears using hooks	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	27.60
D_wage	Gears using hooks	VL2440	Spain	#NULL!	13.90	17.20	12.10	#NULL!
D_wage	Polyvalent passive gears	VL1224	Denmark	38.80	41.30	42.90	47.40	52.30

B.2 Biological indicators

	Indicator= Fp(current) / Ftarget				Indicator= C/Biomasa per		
country	fleet	Datos	Total	country	fleet	Datos	Total
Denmark	DRBVL1224	F_Ind_2002value	0.00000000	Denmark	DRBVL1224	B_Ind_2002value	0.00000070
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000183			B_Ind_2006value	0.00000044
	DTSVL0012	F_Ind_2002value	0.00011744		DTSVL0012	B_Ind_2002value	0.00001724
		F_Ind_2003value	0.00011053			B_Ind_2003value	0.00001805
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00001479
		F_Ind_2005value	0.00002362			B_Ind_2005value	0.00000548
		F_Ind_2006value	0.00002921			B_Ind_2006value	0.00000698
	DTSVL1224	F_Ind_2002value	0.01199955		DTSVL1224	B_Ind_2002value	0.00176115
		F_Ind_2003value	0.01077905			B_Ind_2003value	0.00176041
		F_Ind_2004value	0.01136666			B_Ind_2004value	0.00241948
		F_Ind_2005value	0.00700775			B_Ind_2005value	0.00162518
		F_Ind_2006value	0.00571294			B_Ind_2006value	0.00136511
	PGPVL0012	F_Ind_2002value	0.00451674		PGPVL0012	B_Ind_2002value	0.00066291
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00071076
		F_Ind_2004value	0.00424189			B_Ind_2004value	0.00090292
		F_Ind_2005value	0.00401696			B_Ind_2005value	0.00093158
		F_Ind_2006value	0.00400063			B_Ind_2006value	0.00095595
	PGPVL1224	F_Ind_2002value	0.04398932		PGPVL1224	B_Ind_2002value	0.00645623
		F_Ind_2003value	0.03748562			B_Ind_2003value	0.00612207
		F_Ind_2004value	0.02718568			B_Ind_2004value	0.00578668
		F_Ind_2005value	0.02581475			B_Ind_2005value	0.00598673
		F_Ind_2006value	0.02840362			B_Ind_2006value	0.00678705
	PMPVL0012	F_Ind_2002value	0.00007852		PMPVL0012	B_Ind_2002value	0.00001152
		F_Ind_2003value	0.00034926			B_Ind_2003value	0.00005704
		F_Ind_2004value	0.00042232			B_Ind_2004value	0.00008989
		F_Ind_2005value	0.00018125			B_Ind_2005value	0.00004203
		F_Ind_2006value	0.00023865			B_Ind_2006value	0.00005703
	PMPVL1224	F_Ind_2002value	0.00371902		PMPVL1224	B_Ind_2002value	0.00054583
		F_Ind_2003value	0.00572112			B_Ind_2003value	0.00093436
		F_Ind_2004value	0.00572152			B_Ind_2004value	0.00121787
		F_Ind_2005value	0.00448424			B_Ind_2005value	0.00103995
		F_Ind_2006value	0.00382308			B_Ind_2006value	0.00091353
	PMPVL2440	F_Ind_2002value	0.00672340		PMPVL2440	B_Ind_2002value	0.00098678
		F_Ind_2003value	0.00359828			B_Ind_2003value	0.00058766
		F_Ind_2004value	0.00503328			B_Ind_2004value	0.00107137
		F_Ind_2005value	0.00453274			B_Ind_2005value	0.00105119
		F_Ind_2006value	0.00411691			B_Ind_2006value	0.00098374
	PTSVL1224	F_Ind_2002value	0.02115941		PTSVL1224	B_Ind_2002value	0.00310553
		F_Ind_2003value	0.02157727			B_Ind_2003value	0.00352395
		F_Ind_2004value	0.02115724			B_Ind_2004value	0.00450348
		F_Ind_2005value	0.01430706			B_Ind_2005value	0.00331797
		F_Ind_2006value	0.01213848			B_Ind_2006value	0.00290049
	PTSVL2440	F_Ind_2002value	0.02201709		PTSVL2440	B_Ind_2002value	0.00323141
		F_Ind_2003value	0.02204857			B_Ind_2003value	0.00360092
		F_Ind_2004value	0.01676983			B_Ind_2004value	0.00356958
		F_Ind_2005value	0.01774578			B_Ind_2005value	0.00411545
		F_Ind_2006value	0.02397892			B_Ind_2006value	0.00572977
	PTSVL40XX	F_Ind_2002value	0.00013759		PTSVL40XX	B_Ind_2002value	0.00002019
		F_Ind_2003value	0.00005576			B_Ind_2003value	0.00000911
		F_Ind_2004value	0.00000691			B_Ind_2004value	0.00000147
		F_Ind_2005value	0.00000421			B_Ind_2005value	0.00000098
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000131
	TBBVL1224	F_Ind_2002value	0.00026584		TBBVL1224	B_Ind_2002value	0.00003902
		F_Ind_2003value	0.00031768			B_Ind_2003value	0.00005188
		F_Ind_2004value	0.00029802			B_Ind_2004value	0.00006344
		F_Ind_2005value	0.00014242			B_Ind_2005value	0.00003303
		F_Ind_2006value	0.00016329			B_Ind_2006value	0.00003902
	TBBVL2440	F_Ind_2002value	0.00035925		TBBVL2440	B_Ind_2002value	0.00005273
		F_Ind_2003value	0.00027771			B_Ind_2003value	0.00004536
		F_Ind_2004value	0.00034977			B_Ind_2004value	0.00007445
		F_Ind_2005value	0.00029917			B_Ind_2005value	0.00006938
		F_Ind_2006value	0.00011756			B_Ind_2006value	0.00002809
	TBBVL40XX	F_Ind_2002value	0.00039618		TBBVL40XX	B_Ind_2002value	0.00005815
		F_Ind_2003value	0.00023605			B_Ind_2003value	0.00003855
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00005478
		F_Ind_2005value	0.00024690			B_Ind_2005value	0.00005726
		F_Ind_2006value	0.00016335			B_Ind_2006value	0.00003903
Suma de y_2002value Denmark			0.11548412	Suma de y_2002value Denmark			0.01694940
Suma de y_2003value Denmark			0.10690890	Suma de y_2003value Denmark			0.01746012
Suma de y_2004value Denmark			0.09287997	Suma de y_2004value Denmark			0.01977019
Suma de y_2005value Denmark			0.07880684	Suma de y_2005value Denmark			0.01827619
Suma de y_2006value Denmark			0.08289394	Suma de y_2006value Denmark			0.01980752

France	DFNVL0012	F_Ind 2002value	0.01531763	France	DFNVL0012	B_Ind 2002value	0.002248141407
		F_Ind 2003value	0.01944371			B_Ind 2003value	0.003175503105
		F_Ind 2004value	0.01218747			B_Ind 2004value	0.002594194643
		F_Ind 2005value	0.00893195			B_Ind 2005value	0.001862559838
		F_Ind 2006value	0.01183078			B_Ind 2006value	0.002526240382
	DFNVL1224	F_Ind 2002value	0.33365194		DFNVL1224	B_Ind 2002value	0.048969490753
		F_Ind 2003value	0.23820961			B_Ind 2003value	0.038903957263
		F_Ind 2004value	0.18939434			B_Ind 2004value	0.040313999005
		F_Ind 2005value	0.17383266			B_Ind 2005value	0.040313741541
		F_Ind 2006value	0.12991168			B_Ind 2006value	0.029494874301
	DFNVL2440	F_Ind 2002value	0.43283490		DFNVL2440	B_Ind 2002value	0.063526405076
		F_Ind 2003value	0.31261896			B_Ind 2003value	0.051056224128
		F_Ind 2004value	0.29132458			B_Ind 2004value	0.062010611188
		F_Ind 2005value	0.34334001			B_Ind 2005value	0.079624392986
		F_Ind 2006value	0.26690008			B_Ind 2006value	0.063780805191
	DFNVL40XX	F_Ind 2002value	0.00281024		DFNVL40XX	B_Ind 2002value	0.000412453267
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.000000000000
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.000000000000
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.000000000000
	DRBVL0012	F_Ind 2002value	0.00074773		DRBVL0012	B_Ind 2002value	0.000109742578
		F_Ind 2003value	0.00090746			B_Ind 2003value	0.000148203547
		F_Ind 2004value	0.00032224			B_Ind 2004value	0.000068591029
		F_Ind 2005value	0.00047089			B_Ind 2005value	0.000109205485
		F_Ind 2006value	0.00022272			B_Ind 2006value	0.000053219941
	DRBVL1224	F_Ind 2002value	0.00013174		DRBVL1224	B_Ind 2002value	0.000019335345
		F_Ind 2003value	0.00017623			B_Ind 2003value	0.000028781361
		F_Ind 2004value	0.00000056			B_Ind 2004value	0.000000119354
		F_Ind 2005value	0.00001793			B_Ind 2005value	0.000004158634
		F_Ind 2006value	0.00002633			B_Ind 2006value	0.000006291660
	DTSVL0012	F_Ind 2002value	0.01396228		DTSVL0012	B_Ind 2002value	0.002047751184
		F_Ind 2003value	0.01703883			B_Ind 2003value	0.002782743246
		F_Ind 2004value	0.00918238			B_Ind 2004value	0.001954539133
		F_Ind 2005value	0.01208452			B_Ind 2005value	0.002802535547
		F_Ind 2006value	0.01229019			B_Ind 2006value	0.002936742281
	DTSVL1224	F_Ind 2002value	0.16061708		DTSVL1224	B_Ind 2002value	0.023573482663
		F_Ind 2003value	0.14463705			B_Ind 2003value	0.023621797066
		F_Ind 2004value	0.09039127			B_Ind 2004value	0.019240455538
		F_Ind 2005value	0.09647098			B_Ind 2005value	0.022372699644
		F_Ind 2006value	0.08237012			B_Ind 2006value	0.019682355137
	DTSVL2440	F_Ind 2002value	0.09619334		DTSVL2440	B_Ind 2002value	0.014118125272
		F_Ind 2003value	0.09610413			B_Ind 2003value	0.015696509227
		F_Ind 2004value	0.08691320			B_Ind 2004value	0.019500123237
		F_Ind 2005value	0.10955107			B_Ind 2005value	0.024478475620
		F_Ind 2006value	0.07741475			B_Ind 2006value	0.018498269841
	DTSVL40XX	F_Ind 2002value	0.00383843		DTSVL40XX	B_Ind 2002value	0.000563359329
		F_Ind 2003value	0.00260801			B_Ind 2003value	0.000425607781
		F_Ind 2004value	0.00788814			B_Ind 2004value	0.001674792150
		F_Ind 2005value	0.02581312			B_Ind 2005value	0.005986352509
		F_Ind 2006value	0.02528220			B_Ind 2006value	0.006041187140
	FPOVL0012	F_Ind 2002value	0.00019751		FPOVL0012	B_Ind 2002value	0.000028987673
		F_Ind 2003value	0.00001644			B_Ind 2003value	0.000002621779
		F_Ind 2004value	0.00004217			B_Ind 2004value	0.000003997540
		F_Ind 2005value	0.00007607			B_Ind 2005value	0.000017640519
		F_Ind 2006value	0.00005300			B_Ind 2006value	0.000156034873
	FPOVL1224	F_Ind 2002value	0.00003605		FPOVL1224	B_Ind 2002value	0.000005290792
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.000000000000
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.000000000000
		F_Ind 2006value	0.00000268			B_Ind 2006value	0.000000639396
	HOKVL0012	F_Ind 2002value	0.00159347		HOKVL0012	B_Ind 2002value	0.000233870721
		F_Ind 2003value	0.00271249			B_Ind 2003value	0.000442997656
		F_Ind 2004value	0.00242148			B_Ind 2004value	0.000616430179
		F_Ind 2005value	0.00154352			B_Ind 2005value	0.000358053426
		F_Ind 2006value	0.00303869			B_Ind 2006value	0.000726096075
	HOKVL1224	F_Ind 2002value	0.00013186		HOKVL1224	B_Ind 2002value	0.000019352396
		F_Ind 2003value	0.00266906			B_Ind 2003value	0.000435249878
		F_Ind 2004value	0.00142640			B_Ind 2004value	0.000303619484
		F_Ind 2005value	0.00098130			B_Ind 2005value	0.000227573946
		F_Ind 2006value	0.00003182			B_Ind 2006value	0.000007604554
	HOKVL2440	F_Ind 2002value	0.00005925		HOKVL2440	B_Ind 2002value	0.000008695790
		F_Ind 2003value	0.00004928			B_Ind 2003value	0.000008047869
		F_Ind 2004value	0.00004406			B_Ind 2004value	0.000009377813
		F_Ind 2005value	0.00000551			B_Ind 2005value	0.000001278793
		F_Ind 2006value	0.04993522			B_Ind 2006value	0.011932030886
	MGOVL0012	F_Ind 2002value	0.00001090		MGOVL0012	B_Ind 2002value	0.000001599343
		F_Ind 2003value	0.00000722			B_Ind 2003value	0.000001179899
		F_Ind 2004value	0.00031806			B_Ind 2004value	0.000067699285
		F_Ind 2005value	0.00002417			B_Ind 2005value	0.000005605227
		F_Ind 2006value	0.00002709			B_Ind 2006value	0.000006472396
	MGPVL0012	F_Ind 2002value	0.00079488		MGPVL0012	B_Ind 2002value	0.000116663404
		F_Ind 2003value	0.00002576			B_Ind 2003value	0.000004206375
		F_Ind 2004value	0.00004720			B_Ind 2004value	0.000010046196
		F_Ind 2005value	0.00060605			B_Ind 2005value	0.000140549546
		F_Ind 2006value	0.00043913			B_Ind 2006value	0.000104930907
	MGPVL1224	F_Ind 2002value	0.00066788		MGPVL1224	B_Ind 2002value	0.000098023722
		F_Ind 2003value	0.00036018			B_Ind 2003value	0.000058824463
		F_Ind 2004value	0.00018401			B_Ind 2004value	0.000039166862
		F_Ind 2005value	0.00081354			B_Ind 2005value	0.000188669662
		F_Ind 2006value	0.00026138			B_Ind 2006value	0.000062456295
	MGPVL2440	F_Ind 2002value	0.01342512		MGPVL2440	B_Ind 2002value	0.001970380816
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.000000000000
		F_Ind 2004value	0.00003949			B_Ind 2004value	0.000008405931
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.000000000000
		F_Ind 2006value	0.00002533			B_Ind 2006value	0.000006052962
	PGOVL0012	F_Ind 2002value	0.00000000		PGOVL0012	B_Ind 2002value	0.000000000000
		F_Ind 2003value	0.00000953			B_Ind 2003value	0.000001556717
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00007955			B_Ind 2005value	0.000018448716
		F_Ind 2006value	0.00007547			B_Ind 2006value	0.000018033682
	PGPVL0012	F_Ind 2002value	0.00252273		PGPVL0012	B_Ind 2002value	0.000370256518
		F_Ind 2003value	0.00397720			B_Ind 2003value	0.000649546545
		F_Ind 2004value	0.00193177			B_Ind 2004value	0.000411191525
		F_Ind 2005value	0.00148045			B_Ind 2005value	0.000343331965
		F_Ind 2006value	0.00121232			B_Ind 2006value	0.000289684054
	PGPVL1224	F_Ind 2002value	0.00000407		PGPVL1224	B_Ind 2002value	0.000000596770
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.000000000000
		F_Ind 2004value	0.00005207			B_Ind 2004value	0.000011082870
		F_Ind 2005value	0.00000836			B_Ind 2005value	0.000001938650
		F_Ind 2006value	0.00002959			B_Ind 2006value	0.000198229916
	PMPVL0012	F_Ind 2002value	0.00163603		PMPVL0012	B_Ind 2002value	0.000238649998
		F_Ind 2003value	0.00056352			B_Ind 2003value	0.000092032152
		F_Ind 2004value	0.00035321			B_Ind 2004value	0.000075182779
		F_Ind 2005value	0.00018217			B_Ind 2005value	0.000042246195
		F_Ind 2006value	0.00017277			B_Ind 2006value	0.000041284543
	PMPVL1224	F_Ind 2002value	0.00000000		PMPVL1224	B_Ind 2002value	0.000000000000
		F_Ind 2003value	0.00014625			B_Ind 2003value	0.000024211888
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00045496			B_Ind 2005value	0.000109508922
		F_Ind 2006value	0.00007319			B_Ind 2006value	0.000009541435
	PMPVL2440	F_Ind 2002value	0.00000000		PMPVL2440	B_Ind 2002value	0.000000000000
		F_Ind 2003value	0.00008195			B_Ind 2003value	0.000013679462
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00129163			B_Ind 2005value	0.000299544398
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.000000000000
	PTSVL0012	F_Ind 2002value	0.00264097		PTSVL0012	B_Ind 2002value	0.000387610587
		F_Ind 2003value	0.00360281			B_Ind 2003value	0.000588403204
		F_Ind 2004value	0.00092249			B_Ind 2004value	0.000196359469
		F_Ind 2005value	0.00123954			B_Ind 2005value	0.000278634814
		F_Ind 2006value	0.00090804			B_Ind 2006value	0.000216977017
	PTSVL1224	F_Ind 2002value	0.04309935		PTSVL1224	B_Ind 2002value	0.006325614603
		F_Ind 2003value	0.02222597			B_Ind 2003value	0.003629896657
		F_Ind 2004value	0.00288332			B_Ind 2004value	0.000612735235
		F_Ind 2005value	0.01535437			B_Ind 2005value	0.003560849377
		F_Ind 2006value	0.01129570			B_Ind 2006value	0.002699110204
	PTSVL2440	F_Ind 2002value	0.01678079		PTSVL2440	B_Ind 2002value	0.002462886505
		F_Ind 2003value	0.00049940			B_Ind 2003value	0.000381561397
		F_Ind 2004value	0.00013697			B_Ind 2004value	0.000037763585
		F_Ind 2005value	0.00011337			B_Ind 2005value	0.000026291978
		F_Ind 2006value	0.00126190			B_Ind 2006value	0.000301530789
	PTSVL40XX	F_Ind 2002value	0.00009294		PTSVL40XX	B_Ind 2002value	0.000013640455
		F_Ind 2003value	0.00004698			B_Ind 2003value	0.000007672756
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.000000000000
		F_Ind 2005value	0.00001103			B_Ind 2005value	0.000002557585
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.000000000000
	TBBVL1224	F_Ind 2002value	0.00000000		TBBVL1224	B_Ind 2002value	0.000000000000
		F_Ind 2003value	0.00000835			B_Ind 2003value	0.000001364046
		F_Ind 2004value	0.00000865			B_Ind 2004value	0.000001841461
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.000000000000
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.000000000000
Suma de y_2002value France			1.14377909	Suma de y_2002value France			0.167870414766
Suma de y_2003value France			0.86874128	Suma de y_2003value France			0.141880866560
Suma de y_2004value France			0.69829510	Suma de y_2004value France			0.149637323369
Suma de y_2005value France			0.78987452	Suma de y_2005value France			0.183180746521
Suma de y_2006value France			0.66936157	Suma de y_2006value France			0.159944077490

Ireland	DFNVL1224	F_Ind 2002value	0.31344682	Ireland	DFNVL1224	B_Ind 2002value	0.04600403
		F_Ind 2003value	0.31858908			B_Ind 2003value	0.04710487
		F_Ind 2004value	0.30906868			B_Ind 2004value	0.05580532
		F_Ind 2005value	0.31358394			B_Ind 2005value	0.06348969
		F_Ind 2006value	0.00001491			B_Ind 2006value	0.00000270
	DFNVL2440	F_Ind 2002value	0.10469183		DFNVL2440	B_Ind 2002value	0.01536543
		F_Ind 2003value	0.08043601			B_Ind 2003value	0.01189284
		F_Ind 2004value	0.06573221			B_Ind 2004value	0.01186858
		F_Ind 2005value	0.04243601			B_Ind 2005value	0.00859180
		F_Ind 2006value	0.00001160			B_Ind 2006value	0.00000210
	DRBVL0012	F_Ind 2002value	0.00623838		DRBVL0012	B_Ind 2002value	0.00091560
		F_Ind 2003value	0.00100464			B_Ind 2003value	0.00014854
		F_Ind 2004value	0.00000000			B_Ind 2004value	0.00000000
		F_Ind 2005value	0.00015297			B_Ind 2005value	0.00003097
		F_Ind 2006value	0.00000331			B_Ind 2006value	0.00000060
	DRBVL1224	F_Ind 2002value	0.00420622		DRBVL1224	B_Ind 2002value	0.00061734
		F_Ind 2003value	0.00341440			B_Ind 2003value	0.00050484
		F_Ind 2004value	0.00521866			B_Ind 2004value	0.00094228
		F_Ind 2005value	0.00498972			B_Ind 2005value	0.00101024
		F_Ind 2006value	0.00000497			B_Ind 2006value	0.00000090
	DRBVL2440	F_Ind 2002value	0.00000000		DRBVL2440	B_Ind 2002value	0.00000000
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.00000000
		F_Ind 2004value	0.00198131			B_Ind 2004value	0.00035774
		F_Ind 2005value	0.00227467			B_Ind 2005value	0.00046054
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.00000000
	DTSVL0012	F_Ind 2002value	0.00004047		DTSVL0012	B_Ind 2002value	0.00000594
		F_Ind 2003value	0.00193053			B_Ind 2003value	0.00028544
		F_Ind 2004value	0.00302026			B_Ind 2004value	0.00054534
		F_Ind 2005value	0.00451646			B_Ind 2005value	0.00091442
		F_Ind 2006value	0.00000166			B_Ind 2006value	0.00000030
	DTSVL1224	F_Ind 2002value	0.93196286		DTSVL1224	B_Ind 2002value	0.13678252
		F_Ind 2003value	0.98659025			B_Ind 2003value	0.14587194
		F_Ind 2004value	0.65425921			B_Ind 2004value	0.11813278
		F_Ind 2005value	0.76882920			B_Ind 2005value	0.15566081
		F_Ind 2006value	0.00001823			B_Ind 2006value	0.00000330
	DTSVL2440	F_Ind 2002value	1.09528619		DTSVL2440	B_Ind 2002value	0.16075320
		F_Ind 2003value	0.92360978			B_Ind 2003value	0.13655998
		F_Ind 2004value	0.75990541			B_Ind 2004value	0.13720821
		F_Ind 2005value	0.66538973			B_Ind 2005value	0.13471796
		F_Ind 2006value	0.00001491			B_Ind 2006value	0.00000270
	DTSVL40XX	F_Ind 2002value	0.07190381		DTSVL40XX	B_Ind 2002value	0.01055319
		F_Ind 2003value	0.04819536			B_Ind 2003value	0.00712591
		F_Ind 2004value	0.03101822			B_Ind 2004value	0.00560064
		F_Ind 2005value	0.00580142			B_Ind 2005value	0.00117458
		F_Ind 2006value	0.00001160			B_Ind 2006value	0.00000210
	FPOVL1224	F_Ind 2002value	0.00318623		FPOVL1224	B_Ind 2002value	0.00046764
		F_Ind 2003value	0.00195632			B_Ind 2003value	0.00028925
		F_Ind 2004value	0.00007603			D_Ind 2004value	0.00015010
		F_Ind 2005value	0.00085051			B_Ind 2005value	0.00017220
		F_Ind 2006value	0.00000331			B_Ind 2006value	0.00000060
	HOKVL2440	F_Ind 2002value	0.00000000		HOKVL2440	B_Ind 2002value	0.00000000
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.00000000
		F_Ind 2004value	0.00776653			B_Ind 2004value	0.00140232
		F_Ind 2005value	0.00025814			B_Ind 2005value	0.00005226
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.00000000
	PGPVL0012	F_Ind 2002value	0.01769488		PGPVL0012	B_Ind 2002value	0.00259705
		F_Ind 2003value	0.02386771			B_Ind 2003value	0.00352895
		F_Ind 2004value	0.00782182			B_Ind 2004value	0.00141230
		F_Ind 2005value	0.00649832			B_Ind 2005value	0.00131568
		F_Ind 2006value	0.00000663			B_Ind 2006value	0.00000120
	PMPVL0012	F_Ind 2002value	0.11720873		PMPVL0012	B_Ind 2002value	0.01720252
		F_Ind 2003value	0.00141192			B_Ind 2003value	0.00020876
		F_Ind 2004value	0.00160414			B_Ind 2004value	0.00028964
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.00000000
		F_Ind 2006value	0.00000663			B_Ind 2006value	0.00000120
	PTSVL2440	F_Ind 2002value	0.00010521		PTSVL2440	B_Ind 2002value	0.00001544
		F_Ind 2003value	0.00348907			B_Ind 2003value	0.00051588
		F_Ind 2004value	0.00619781			B_Ind 2004value	0.00111907
		F_Ind 2005value	0.00775371			B_Ind 2005value	0.00156985
		F_Ind 2006value	0.00000166			B_Ind 2006value	0.00000030
	PTSVL40XX	F_Ind 2002value	0.00000000		PTSVL40XX	B_Ind 2002value	0.00000000
		F_Ind 2003value	0.00000000			B_Ind 2003value	0.00000000
		F_Ind 2004value	0.00014583			B_Ind 2004value	0.00002633
		F_Ind 2005value	0.00000000			B_Ind 2005value	0.00000000
		F_Ind 2006value	0.00000000			B_Ind 2006value	0.00000000
	TBBVL1224	F_Ind 2002value	0.00427150		TBBVL1224	B_Ind 2002value	0.00062692
		F_Ind 2003value	0.00755513			B_Ind 2003value	0.00111706
		F_Ind 2004value	0.00809882			B_Ind 2004value	0.00146232
		F_Ind 2005value	0.00637103			B_Ind 2005value	0.00128991
		F_Ind 2006value	0.00000331			B_Ind 2006value	0.00000060
	TBBVL2440	F_Ind 2002value	0.17573565		TBBVL2440	B_Ind 2002value	0.02579241
		F_Ind 2003value	0.12256581			B_Ind 2003value	0.01812192
		F_Ind 2004value	0.06870686			B_Ind 2004value	0.01240568
		F_Ind 2005value	0.06005836			B_Ind 2005value	0.01215970
		F_Ind 2006value	0.00001160			B_Ind 2006value	0.00000210
	TBBVL40XX	F_Ind 2002value	0.05304823		TBBVL40XX	B_Ind 2002value	0.00778579
		F_Ind 2003value	0.00868874			B_Ind 2003value	0.00128467
		F_Ind 2004value	0.01174147			B_Ind 2004value	0.00212003
		F_Ind 2005value	0.01320329			B_Ind 2005value	0.00267320
		F_Ind 2006value	0.00000497			B_Ind 2006value	0.00000090
Suma de y_2002value Ireland			2.89902702	Suma de y_2002value Ireland			0.42548502
Suma de y_2003value Ireland			2.53330476	Suma de y_2003value Ireland			0.37456084
Suma de y_2004value Ireland			1.94316326	Suma de y_2004value Ireland			0.35085677
Suma de y_2005value Ireland			1.90296747	Suma de y_2005value Ireland			0.38528383
Suma de y_2006value Ireland			0.00011930	Suma de y_2006value Ireland			0.00002160

Spain	DTSVL0012	F_Ind_2002value	0.00000000	Spain	DTSVL0012	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00173687			B_Ind_2004value	0.00031361
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	DTSVL1224	F_Ind_2002value	0.00824235		DTSVL1224	B_Ind_2002value	0.00120971
		F_Ind_2003value	0.00545515			B_Ind_2003value	0.00080657
		F_Ind_2004value	0.00887835			B_Ind_2004value	0.00160307
		F_Ind_2005value	0.00667371			B_Ind_2005value	0.00135119
		F_Ind_2006value	0.00056356			B_Ind_2006value	0.00010202
	DTSVL2440	F_Ind_2002value	1.37424901		DTSVL2440	B_Ind_2002value	0.20169607
		F_Ind_2003value	1.12476991			B_Ind_2003value	0.16630244
		F_Ind_2004value	1.28559027			B_Ind_2004value	0.23212566
		F_Ind_2005value	1.29540005			B_Ind_2005value	0.26227284
		F_Ind_2006value	1.44955308			B_Ind_2006value	0.26242188
	DTSVL40XX	F_Ind_2002value	0.01352520		DTSVL40XX	B_Ind_2002value	0.00198507
		F_Ind_2003value	0.01198438			B_Ind_2003value	0.00177195
		F_Ind_2004value	0.04119948			B_Ind_2004value	0.00743896
		F_Ind_2005value	0.06750327			B_Ind_2005value	0.01366703
		F_Ind_2006value	0.08713026			B_Ind_2006value	0.01577375
	HOKVL0012	F_Ind_2002value	0.00216912		HOKVL0012	B_Ind_2002value	0.00031836
		F_Ind_2003value	0.00381825			B_Ind_2003value	0.00056455
		F_Ind_2004value	0.00347815			B_Ind_2004value	0.00062801
		F_Ind_2005value	0.00334395			B_Ind_2005value	0.00067703
		F_Ind_2006value	0.00550769			B_Ind_2006value	0.00099709
	HOKVL1224	F_Ind_2002value	0.08067370		HOKVL1224	B_Ind_2002value	0.01184033
		F_Ind_2003value	0.10257318			B_Ind_2003value	0.01516592
		F_Ind_2004value	0.10848852			B_Ind_2004value	0.01958864
		F_Ind_2005value	0.08965946			B_Ind_2005value	0.01815288
		F_Ind_2006value	0.05786196			B_Ind_2006value	0.01047512
	HOKVL2440	F_Ind_2002value	1.57702791		HOKVL2440	B_Ind_2002value	0.23145757
		F_Ind_2003value	1.64705292			B_Ind_2003value	0.24352440
		F_Ind_2004value	1.65366685			B_Ind_2004value	0.29858542
		F_Ind_2005value	1.70147078			B_Ind_2005value	0.34448785
		F_Ind_2006value	1.54347810			B_Ind_2006value	0.27942572
	MGOVL0012	F_Ind_2002value	0.01006949		MGOVL0012	B_Ind_2002value	0.00147788
		F_Ind_2003value	0.00783733			B_Ind_2003value	0.00115879
		F_Ind_2004value	0.00940906			B_Ind_2004value	0.00169890
		F_Ind_2005value	0.01168386			B_Ind_2005value	0.00236557
		F_Ind_2006value	0.01246149			B_Ind_2006value	0.00225598
	MGOVL1224	F_Ind_2002value	0.16149399		MGOVL1224	B_Ind_2002value	0.02370218
		F_Ind_2003value	0.12597313			B_Ind_2003value	0.01862571
		F_Ind_2004value	0.12422566			B_Ind_2004value	0.02243013
		F_Ind_2005value	0.12188055			B_Ind_2005value	0.02467651
		F_Ind_2006value	0.11108033			B_Ind_2006value	0.02010958
	MGOVL2440	F_Ind_2002value	0.00686558		MGOVL2440	B_Ind_2002value	0.00100765
		F_Ind_2003value	0.00042777			B_Ind_2003value	0.00006325
		F_Ind_2004value	0.00005045			B_Ind_2004value	0.00000911
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	PTSVL0012	F_Ind_2002value	0.00009215		PTSVL0012	B_Ind_2002value	0.00001352
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	PTSVL1224	F_Ind_2002value	0.00513847		PTSVL1224	B_Ind_2002value	0.00075416
		F_Ind_2003value	0.00036821			B_Ind_2003value	0.00005444
		F_Ind_2004value	0.00149954			B_Ind_2004value	0.00027076
		F_Ind_2005value	0.00017588			B_Ind_2005value	0.00003561
		F_Ind_2006value	0.00015254			B_Ind_2006value	0.00002762
	PTSVL2440	F_Ind_2002value	0.00000000		PTSVL2440	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00045788			B_Ind_2003value	0.00006770
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
Suma de y_2002value Spain			3.23954696	Suma de y_2002value Spain			0.47546252
Suma de y_2003value Spain			3.03071810	Suma de y_2003value Spain			0.44810570
Suma de y_2004value Spain			3.23822319	Suma de y_2004value Spain			0.58469227
Suma de y_2005value Spain			3.29779151	Suma de y_2005value Spain			0.66768652
Suma de y_2006value Spain			3.26778900	Suma de y_2006value Spain			0.59158877

UK	DFNVL0012	F_Ind_2002value	0.02218644	UK	DFNVL0012	B_Ind_2002value	0.00325626
		F_Ind_2003value	0.02088005			B_Ind_2003value	0.00308721
		F_Ind_2004value	0.00993182			B_Ind_2004value	0.00179328
		F_Ind_2005value	0.00960354			B_Ind_2005value	0.00194436
		F_Ind_2006value	0.00647496			B_Ind_2006value	0.00117220
	DFNVL1224	F_Ind_2002value	0.14099546		DFNVL1224	B_Ind_2002value	0.02069365
		F_Ind_2003value	0.17223678			B_Ind_2003value	0.02546601
		F_Ind_2004value	0.10033890			B_Ind_2004value	0.01811715
		F_Ind_2005value	0.09144197			B_Ind_2005value	0.01851378
		F_Ind_2006value	0.06076477			B_Ind_2006value	0.01100064
	DFNVL2440	F_Ind_2002value	0.12956484		DFNVL2440	B_Ind_2002value	0.01901600
		F_Ind_2003value	0.13442603			B_Ind_2003value	0.01987551
		F_Ind_2004value	0.10441978			B_Ind_2004value	0.01885399
		F_Ind_2005value	0.09087677			B_Ind_2005value	0.01839934
		F_Ind_2006value	0.04253892			B_Ind_2006value	0.00770109
	DRBVL0012	F_Ind_2002value	0.00004621		DRBVL0012	B_Ind_2002value	0.00000678
		F_Ind_2003value	0.00006154			B_Ind_2003value	0.00000910
		F_Ind_2004value	0.00002861			B_Ind_2004value	0.00000520
		F_Ind_2005value	0.00000049			B_Ind_2005value	0.00000010
		F_Ind_2006value	0.00000506			B_Ind_2006value	0.00000092
	DRBVL1224	F_Ind_2002value	0.00005207		DRBVL1224	B_Ind_2002value	0.00000764
		F_Ind_2003value	0.00016593			B_Ind_2003value	0.00002453
		F_Ind_2004value	0.00017583			B_Ind_2004value	0.00003175
		F_Ind_2005value	0.00013089			B_Ind_2005value	0.00002650
		F_Ind_2006value	0.00002571			B_Ind_2006value	0.00000466
	DRBVL2440	F_Ind_2002value	0.00007430		DRBVL2440	B_Ind_2002value	0.00001090
		F_Ind_2003value	0.00000755			B_Ind_2003value	0.00000112
		F_Ind_2004value	0.00000266			B_Ind_2004value	0.00000046
		F_Ind_2005value	0.00000797			B_Ind_2005value	0.00000161
		F_Ind_2006value	0.00004455			B_Ind_2006value	0.00000807
	DTSVL0012	F_Ind_2002value	0.00361184		DTSVL0012	B_Ind_2002value	0.00053010
		F_Ind_2003value	0.00252974			B_Ind_2003value	0.00037403
		F_Ind_2004value	0.00163903			B_Ind_2004value	0.00029594
		F_Ind_2005value	0.00175981			B_Ind_2005value	0.00035630
		F_Ind_2006value	0.00169077			B_Ind_2006value	0.00030609
	DTSVL1224	F_Ind_2002value	0.15747828		DTSVL1224	B_Ind_2002value	0.02311281
		F_Ind_2003value	0.14656665			B_Ind_2003value	0.02167056
		F_Ind_2004value	0.16248928			B_Ind_2004value	0.02933900
		F_Ind_2005value	0.14773957			B_Ind_2005value	0.02991208
		F_Ind_2006value	0.13801630			B_Ind_2006value	0.02498597
	DTSVL2440	F_Ind_2002value	0.44660444		DTSVL2440	B_Ind_2002value	0.06554734
		F_Ind_2003value	0.36596207			B_Ind_2003value	0.05410783
		F_Ind_2004value	0.32538040			B_Ind_2004value	0.05875056
		F_Ind_2005value	0.37167001			B_Ind_2005value	0.07525008
		F_Ind_2006value	0.35909033			B_Ind_2006value	0.06500842
	DTSVL40XX	F_Ind_2002value	0.04775888		DTSVL40XX	B_Ind_2002value	0.00700948
		F_Ind_2003value	0.05327468			B_Ind_2003value	0.00787691
		F_Ind_2004value	0.04168998			B_Ind_2004value	0.00752753
		F_Ind_2005value	0.03801426			B_Ind_2005value	0.00769655
		F_Ind_2006value	0.05407224			B_Ind_2006value	0.00978904
	FPOVL0012	F_Ind_2002value	0.00069812		FPOVL0012	B_Ind_2002value	0.00010246
		F_Ind_2003value	0.00003324			B_Ind_2003value	0.00000491
		F_Ind_2004value	0.00004184			B_Ind_2004value	0.00000756
		F_Ind_2005value	0.00002008			B_Ind_2005value	0.00000407
		F_Ind_2006value	0.00002891			B_Ind_2006value	0.00000523
	FPOVL1224	F_Ind_2002value	0.00000250		FPOVL1224	B_Ind_2002value	0.00000037
		F_Ind_2003value	0.00017838			B_Ind_2003value	0.00002637
		F_Ind_2004value	0.00000563			B_Ind_2004value	0.00000102
		F_Ind_2005value	0.00000151			B_Ind_2005value	0.00000030
		F_Ind_2006value	0.00002118			B_Ind_2006value	0.00000383
	H0KVL0012	F_Ind_2002value	0.00000000		H0KVL0012	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000060			B_Ind_2005value	0.00000012
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	H0KVL1224	F_Ind_2002value	0.00000336		H0KVL1224	B_Ind_2002value	0.00000049
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	H0KVL2440	F_Ind_2002value	0.12778432		H0KVL2440	B_Ind_2002value	0.01875468
		F_Ind_2003value	0.09972388			B_Ind_2003value	0.01503900
		F_Ind_2004value	0.09363671			B_Ind_2004value	0.01690701
		F_Ind_2005value	0.18306445			B_Ind_2005value	0.03706410
		F_Ind_2006value	0.26916834			B_Ind_2006value	0.05295000
	MGPVL0012	F_Ind_2002value	0.00000000		MGPVL0012	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000228			B_Ind_2003value	0.00000034
		F_Ind_2004value	0.00000339			B_Ind_2004value	0.00000061
		F_Ind_2005value	0.00000117			B_Ind_2005value	0.00000024
		F_Ind_2006value	0.00001871			B_Ind_2006value	0.00000339
	MGPVL1224	F_Ind_2002value	0.00000472		MGPVL1224	B_Ind_2002value	0.00000069
		F_Ind_2003value	0.00000247			B_Ind_2003value	0.00000037
		F_Ind_2004value	0.00000028			B_Ind_2004value	0.00000005
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	PGPVL0012	F_Ind_2002value	0.00000000		PGPVL0012	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000060			B_Ind_2005value	0.00000012
		F_Ind_2006value	0.00001327			B_Ind_2006value	0.00000240
	PMPVL0012	F_Ind_2002value	0.00000000		PMPVL0012	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000000			B_Ind_2003value	0.00000000
		F_Ind_2004value	0.00000031			B_Ind_2004value	0.00000006
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000174			B_Ind_2006value	0.00000031
	PTSVL0012	F_Ind_2002value	0.00001493		PTSVL0012	B_Ind_2002value	0.00000219
		F_Ind_2003value	0.00004422			B_Ind_2003value	0.00000654
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00011317			B_Ind_2005value	0.00002291
		F_Ind_2006value	0.00000108			B_Ind_2006value	0.00000019
	PTSVL1224	F_Ind_2002value	0.00000000		PTSVL1224	B_Ind_2002value	0.00000000
		F_Ind_2003value	0.00000041			B_Ind_2003value	0.00000006
		F_Ind_2004value	0.00000065			B_Ind_2004value	0.00000012
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	PTSVL2440	F_Ind_2002value	0.00000189		PTSVL2440	B_Ind_2002value	0.00000028
		F_Ind_2003value	0.00000081			B_Ind_2003value	0.00000012
		F_Ind_2004value	0.00000000			B_Ind_2004value	0.00000000
		F_Ind_2005value	0.00000000			B_Ind_2005value	0.00000000
		F_Ind_2006value	0.00000000			B_Ind_2006value	0.00000000
	TBBVL0012	F_Ind_2002value	0.00000469		TBBVL0012	B_Ind_2002value	0.00000067
		F_Ind_2003value	0.00000494			B_Ind_2003value	0.00000073
		F_Ind_2004value	0.00000424			B_Ind_2004value	0.00000077
		F_Ind_2005value	0.00000060			B_Ind_2005value	0.00000012
		F_Ind_2006value	0.00000181			B_Ind_2006value	0.00000033
	TBBVL1224	F_Ind_2002value	0.00035000		TBBVL1224	B_Ind_2002value	0.00005137
		F_Ind_2003value	0.00025101			B_Ind_2003value	0.00003711
		F_Ind_2004value	0.00035111			B_Ind_2004value	0.00006340
		F_Ind_2005value	0.00036563			B_Ind_2005value	0.00007403
		F_Ind_2006value	0.00015380			B_Ind_2006value	0.00002784
	TBBVL2440	F_Ind_2002value	0.01582131		TBBVL2440	B_Ind_2002value	0.00232207
		F_Ind_2003value	0.01245118			B_Ind_2003value	0.00184096
		F_Ind_2004value	0.01019203			B_Ind_2004value	0.00184027
		F_Ind_2005value	0.00708497			B_Ind_2005value	0.00143446
		F_Ind_2006value	0.00525931			B_Ind_2006value	0.00095213
	TBBVL40XX	F_Ind_2002value	0.00182308		TBBVL40XX	B_Ind_2002value	0.00026757
		F_Ind_2003value	0.00314966			B_Ind_2003value	0.00046568
		F_Ind_2004value	0.00295066			B_Ind_2004value	0.00053277
		F_Ind_2005value	0.00309024			B_Ind_2005value	0.00062686
		F_Ind_2006value	0.00277720			B_Ind_2006value	0.00050277
Suma de y_2002value UK			1.09488158	Suma de y_2002value UK			0.16069381
Suma de y_2003value UK			0.98194419	Suma de y_2003value UK			0.14518499
Suma de y_2004value UK			0.85328395	Suma de y_2004value UK			0.15406850
Suma de y_2005value UK			0.94498839	Suma de y_2005value UK			0.19132683
Suma de y_2006value UK			0.96016896	Suma de y_2006value UK			0.17382553
Total Suma de y_2002value			1.05430111	Total Suma de y_2002value			0.15189813
Total Suma de y_2003value			1.00333803	Total Suma de y_2003value			0.13266257
Total Suma de y_2004value			1.10221005	Total Suma de y_2004value			0.15330955
Total Suma de y_2005value			1.23734430	Total Suma de y_2005value			0.18014638
Total Suma de y_2006value			1.09013519	Total Suma de y_2006value			0.14908516

B.3 Technical indicator

indicator	gear	vessellength	country	2002	2003	2004	2005	2006
CAP.UT	Demersal Trawlers and Demersal Seiners	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Demersal Trawlers and Demersal Seiners	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Demersal Trawlers and Demersal Seiners	VL2440	Spain	0.47	0.46	0.48	0.49	0.49
CAP.UT	Demersal Trawlers and Demersal Seiners	VL2440	UK	0.73	0.70	0.76	0.69	0.68
CAP.UT	Drift nets and fixed nets	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Drift nets and fixed nets	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Drift nets and fixed nets	VL2440	Spain	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Gears using hooks	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Gears using hooks	VL2440	Spain	0.54	0.58	0.61	0.62	0.63
CAP.UT	Polyvalent passive gears	VL1224	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!

Appendix C: North Sea Flatfish indicator data tables

C.1 Social and Economic indicators

Indicator	gear	vessellength	country	2002	2003	2004	2005	2006
A_ROI	Beam trawlers	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL0012	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	-0.76
A_ROI	Beam trawlers	VL1224	Belgium	#NULL!	-0.12	-0.32	-0.14	-0.28
A_ROI	Beam trawlers	VL1224	Denmark	0.27	0.05	0.01	0.10	0.09
A_ROI	Beam trawlers	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL1224	Germany	#NULL!	#NULL!	-0.63	-0.74	#NULL!
A_ROI	Beam trawlers	VL1224	Netherlands	-0.07	-0.08	-0.09	-0.07	-0.07
A_ROI	Beam trawlers	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	-0.57
A_ROI	Beam trawlers	VL2440	Belgium	#NULL!	0.01	0.01	-0.09	-0.30
A_ROI	Beam trawlers	VL2440	Denmark	-0.01	-0.07	-0.12	-0.12	-0.05
A_ROI	Beam trawlers	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL2440	Netherlands	0.00	-0.05	-0.05	-0.16	-0.15
A_ROI	Beam trawlers	VL2440	UK	#NULL!	#NULL!	#NULL!	#NULL!	-0.12
A_ROI	Beam trawlers	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL40XX	Netherlands	-0.01	0.02	0.00	-0.08	-0.06
A_ROI	Beam trawlers	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	-0.58
A_ROI	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL0012	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	-2.58
B_BER	Beam trawlers	VL1224	Belgium	#NULL!	0.35	-0.73	0.05	-0.80
B_BER	Beam trawlers	VL1224	Denmark	2.85	1.34	1.04	1.68	1.58
B_BER	Beam trawlers	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL1224	Germany	#NULL!	#NULL!	0.27	0.26	#NULL!
B_BER	Beam trawlers	VL1224	Netherlands	0.84	0.82	0.77	0.81	0.81
B_BER	Beam trawlers	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	-2.50
B_BER	Beam trawlers	VL2440	Belgium	#NULL!	1.12	1.08	0.35	-0.59
B_BER	Beam trawlers	VL2440	Denmark	0.98	0.71	0.38	0.39	0.76
B_BER	Beam trawlers	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL2440	Netherlands	1.00	0.96	0.93	0.75	0.78
B_BER	Beam trawlers	VL2440	UK	#NULL!	#NULL!	#NULL!	#NULL!	-0.10
B_BER	Beam trawlers	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL40XX	Netherlands	0.98	1.04	1.01	0.78	0.82
B_BER	Beam trawlers	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	-3.20
B_BER	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL0012	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL0012	UK	-11.19	#NULL!	#NULL!	#NULL!	-4.25
C_GVA	Beam trawlers	VL1224	Belgium	5.12	6.92	3.77	4.83	2.92
C_GVA	Beam trawlers	VL1224	Denmark	7.80	5.81	5.10	7.72	7.49
C_GVA	Beam trawlers	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL1224	Germany	#NULL!	#NULL!	15.21	18.81	#NULL!
C_GVA	Beam trawlers	VL1224	Netherlands	25.89	26.79	24.76	27.10	25.93
C_GVA	Beam trawlers	VL1224	UK	-28.29	2.31	1.03	2.55	-5.55
C_GVA	Beam trawlers	VL2440	Belgium	35.72	32.13	29.53	20.34	16.89
C_GVA	Beam trawlers	VL2440	Denmark	5.83	4.49	2.77	2.73	2.88
C_GVA	Beam trawlers	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL2440	Netherlands	24.93	23.08	20.40	15.93	15.47
C_GVA	Beam trawlers	VL2440	UK	17.16	21.55	14.11	8.27	6.48
C_GVA	Beam trawlers	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL40XX	Netherlands	57.03	57.46	49.44	38.81	40.61
C_GVA	Beam trawlers	VL40XX	UK	7.66	3.92	5.22	2.53	-5.45
C_GVA	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL0012	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL0012	UK	#NULL!	#NULL!	#NULL!	44.80	2.20
D_wage	Beam trawlers	VL1224	Belgium	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL1224	Denmark	68.70	48.60	54.20	66.00	75.30
D_wage	Beam trawlers	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL1224	Germany	#NULL!	#NULL!	33.70	39.00	#NULL!
D_wage	Beam trawlers	VL1224	Netherlands	35.60	36.80	36.40	40.50	39.40
D_wage	Beam trawlers	VL1224	UK	#NULL!	#NULL!	#NULL!	24.70	14.10
D_wage	Beam trawlers	VL2440	Belgium	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL2440	Denmark	62.70	53.40	58.30	55.50	67.30
D_wage	Beam trawlers	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL2440	Netherlands	46.80	50.40	46.80	43.20	49.80
D_wage	Beam trawlers	VL2440	UK	#NULL!	#NULL!	#NULL!	31.20	35.40
D_wage	Beam trawlers	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL40XX	Netherlands	49.00	54.30	49.20	41.50	51.20
D_wage	Beam trawlers	VL40XX	UK	#NULL!	#NULL!	#NULL!	47.60	90.10
D_wage	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	26.90
D_wage	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!

C.2 Biological indicators

id	landings_sum	country	fishingtech	year_	vessellength	sum.main.sp	main.sp.pc	weighted.mean.F.Ft
2002BelgiumTBBVL1224	2910677	Belgium	TBB	2002	VL1224	1584764	54.45	0.69
2002BelgiumTBBVL2440	9563706	Belgium	TBB	2002	VL2440	7022573	73.43	3.21
2002DenmarkTBBVL1224	5042234	Denmark	TBB	2002	VL1224	124412	2.47	0.03
2002DenmarkTBBVL2440	1273627	Denmark	TBB	2002	VL2440	1137053	89.28	0.35
2002DenmarkTBBVL40XX	1180678	Denmark	TBB	2002	VL40XX	1028736	87.13	0.30
2002FranceTBBVL1224	60922	France	TBB	2002	VL1224	51092	83.86	0.08
2002FranceTBBVL2440	190115	France	TBB	2002	VL2440	133504	70.22	0.39
2002NetherlandsTBBVL1224	15359344	Netherlands	TBB	2002	VL1224	2894772	18.85	0.26
2002NetherlandsTBBVL2440	14306852	Netherlands	TBB	2002	VL2440	9485973	66.30	0.84
2002NetherlandsTBBVL40XX	48709718	Netherlands	TBB	2002	VL40XX	32581958	66.89	3.02
2002UKTBBVL0012	284669.3	UK	TBB	2002	VL0012	6596.8	2.32	0.00
2002UKTBBVL1224	1283252.8	UK	TBB	2002	VL1224	177295.7	13.82	0.04
2002UKTBBVL2440	10748848.6	UK	TBB	2002	VL2440	9234734.6	85.91	1.91
2002UKTBBVL40XX	7680154.3	UK	TBB	2002	VL40XX	6376765.8	83.03	1.30
2003BelgiumTBBVL1224	2896462	Belgium	TBB	2003	VL1224	1321957	45.64	0.91
2003BelgiumTBBVL2440	7889536	Belgium	TBB	2003	VL2440	6056712	76.77	4.28
2003DenmarkTBBVL1224	5363188	Denmark	TBB	2003	VL1224	97860	1.82	0.03
2003DenmarkTBBVL2440	1640734	Denmark	TBB	2003	VL2440	1423703	86.77	0.62
2003DenmarkTBBVL40XX	1051472	Denmark	TBB	2003	VL40XX	903217	85.90	0.37
2003FranceTBBVL1224	123406.9	France	TBB	2003	VL1224	93628.5	75.87	0.38
2003FranceTBBVL2440	38196	France	TBB	2003	VL2440	31264	81.85	0.14
2003NetherlandsTBBVL1224	18033294	Netherlands	TBB	2003	VL1224	2658565	14.74	0.26
2003NetherlandsTBBVL2440	12624170	Netherlands	TBB	2003	VL2440	8053022	63.79	0.99
2003NetherlandsTBBVL40XX	42578529	Netherlands	TBB	2003	VL40XX	29978977	70.41	3.85
2003UKTBBVL0012	198413.5	UK	TBB	2003	VL0012	3069.5	1.55	0.00
2003UKTBBVL1224	568551.4	UK	TBB	2003	VL1224	115249.4	20.27	0.03
2003UKTBBVL2440	7199249.5	UK	TBB	2003	VL2440	6027269.6	83.72	1.82
2003UKTBBVL40XX	7927168.7	UK	TBB	2003	VL40XX	6476333.3	81.70	1.86
2004BelgiumTBBVL1224	2522749	Belgium	TBB	2004	VL1224	1010025	40.04	0.46
2004BelgiumTBBVL2440	8242919	Belgium	TBB	2004	VL2440	6207315	75.30	2.64
2004DenmarkTBBVL1224	4935320	Denmark	TBB	2004	VL1224	125614	2.55	0.02
2004DenmarkTBBVL2440	1375801	Denmark	TBB	2004	VL2440	1167942	84.89	0.22
2004DenmarkTBBVL40XX	684782	Denmark	TBB	2004	VL40XX	587822	85.84	0.11
2004FranceTBBVL1224	73589	France	TBB	2004	VL1224	41644	56.59	0.12
2004FranceTBBVL2440	30548	France	TBB	2004	VL2440	24640	80.66	0.06
2004GermanyTBBVL0012	135375	Germany	TBB	2004	VL0012	25	0.02	0.00
2004GermanyTBBVL1224	17718369	Germany	TBB	2004	VL1224	1202178	6.78	0.64
2004GermanyTBBVL2440	3568506	Germany	TBB	2004	VL2440	1265079	35.45	0.66
2004GermanyTBBVL40XX	1175240	Germany	TBB	2004	VL40XX	151430	12.89	0.11
2004NetherlandsTBBVL1224	18245805	Netherlands	TBB	2004	VL1224	2578419	14.13	0.17
2004NetherlandsTBBVL2440	12003695	Netherlands	TBB	2004	VL2440	7878871	65.64	0.53
2004NetherlandsTBBVL40XX	38895936	Netherlands	TBB	2004	VL40XX	26829959	68.98	1.79
2004UKTBBVL0012	153086.4	UK	TBB	2004	VL0012	2418.1	1.58	0.00
2004UKTBBVL1224	389083.6	UK	TBB	2004	VL1224	19789.5	5.09	0.01
2004UKTBBVL2440	7533115.6	UK	TBB	2004	VL2440	6452124.1	85.65	0.96
2004UKTBBVL40XX	9330218.7	UK	TBB	2004	VL40XX	7712316.7	82.66	1.09
2005BelgiumTBBVL1224	2321785	Belgium	TBB	2005	VL1224	869976	37.47	0.45
2005BelgiumTBBVL2440	7046899	Belgium	TBB	2005	VL2440	5199371	73.78	2.25
2005DenmarkTBBVL1224	5254003	Denmark	TBB	2005	VL1224	116158	2.21	0.02
2005DenmarkTBBVL2440	1558482	Denmark	TBB	2005	VL2440	1359572	87.24	0.26
2005DenmarkTBBVL40XX	879381	Denmark	TBB	2005	VL40XX	759484	86.37	0.14
2005FranceTBBVL1224	41549	France	TBB	2005	VL1224	23165	55.75	0.08
2005FranceTBBVL2440	26791	France	TBB	2005	VL2440	23912	89.25	0.11
2005GermanyTBBVL0012	182704	Germany	TBB	2005	VL0012	11	0.01	0.00
2005GermanyTBBVL1224	7167621	Germany	TBB	2005	VL1224	338540	4.72	0.23
2005GermanyTBBVL2440	1083170	Germany	TBB	2005	VL2440	517976	47.82	0.37
2005GermanyTBBVL40XX	228731	Germany	TBB	2005	VL40XX	147305	64.40	0.11
2005NetherlandsTBBVL1224	18271776	Netherlands	TBB	2005	VL1224	1780824	9.75	0.13
2005NetherlandsTBBVL2440	10621519	Netherlands	TBB	2005	VL2440	6432345	60.56	0.44
2005NetherlandsTBBVL40XX	37222201	Netherlands	TBB	2005	VL40XX	25599214	68.77	1.72
2005UKTBBVL0012	90517.9	UK	TBB	2005	VL0012	3701.9	4.09	0.01
2005UKTBBVL1224	392594.6	UK	TBB	2005	VL1224	13382.9	3.41	0.01
2005UKTBBVL2440	5328772.8	UK	TBB	2005	VL2440	4302108.2	80.73	0.60
2005UKTBBVL40XX	9322380.6	UK	TBB	2005	VL40XX	7201198.4	77.25	1.01
2006BelgiumTBBVL1224	2418851	Belgium	TBB	2006	VL1224	950069	39.28	0.48
2006BelgiumTBBVL2440	6161972	Belgium	TBB	2006	VL2440	4556960	73.95	2.37
2006DenmarkTBBVL1224	4904375	Denmark	TBB	2006	VL1224	141231	2.88	0.04
2006DenmarkTBBVL2440	727166	Denmark	TBB	2006	VL2440	659991	90.76	0.17
2006DenmarkTBBVL40XX	981649	Denmark	TBB	2006	VL40XX	890725	90.74	0.24
2006FranceTBBVL1224	31848.3	France	TBB	2006	VL1224	7076	22.22	0.03
2006FranceTBBVL2440	14495.8	France	TBB	2006	VL2440	12115.9	83.58	0.04
2006GermanyTBBVL0012	210494	Germany	TBB	2006	VL0012	4	0.00	0.00
2006GermanyTBBVL1224	16061894	Germany	TBB	2006	VL1224	594735	3.70	0.50
2006GermanyTBBVL2440	4575140	Germany	TBB	2006	VL2440	1043301	22.80	0.73
2006NetherlandsTBBVL1224	17982880	Netherlands	TBB	2006	VL1224	2089704	11.62	0.17
2006NetherlandsTBBVL2440	9834171	Netherlands	TBB	2006	VL2440	5751380	58.48	0.56
2006NetherlandsTBBVL40XX	37599820	Netherlands	TBB	2006	VL40XX	23843735	63.41	2.18
2006UKTBBVL0012	81426.4	UK	TBB	2006	VL0012	4126	5.07	0.01
2006UKTBBVL1224	479693.1	UK	TBB	2006	VL1224	22345.2	4.66	0.03
2006UKTBBVL2440	4585354.6	UK	TBB	2006	VL2440	3680218	80.26	0.72
2006UKTBBVL40XX	8213956.3	UK	TBB	2006	VL40XX	6432169.3	78.31	1.23

C.3 Technical indicator

indicator	gear	vessellength	country	2002	2003	2004	2005	2006
CAP.UT	Beam trawlers	VL0012	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL0012	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL1224	Belgium	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL1224	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL1224	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL1224	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL1224	Netherlands	0.59	0.56	0.56	0.55	0.57
CAP.UT	Beam trawlers	VL1224	UK	0.52	0.48	0.48	0.48	0.44
CAP.UT	Beam trawlers	VL2440	Belgium	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL2440	Denmark	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL2440	France	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL2440	Netherlands	0.57	0.63	0.58	0.59	0.63
CAP.UT	Beam trawlers	VL2440	UK	0.68	0.74	0.70	0.70	0.70
CAP.UT	Beam trawlers	VL40XX	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Beam trawlers	VL40XX	Netherlands	0.84	0.86	0.79	0.85	0.91
CAP.UT	Beam trawlers	VL40XX	UK	0.95	0.89	0.94	0.98	0.92
CAP.UT	Combining mobile & passive gears	VL0012	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Combining mobile & passive gears	VL1224	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Combining mobile & passive gears	VL40XX	UK	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!

Appendix D: Baltic Cod indicator data tables

D.1 Social and Economic indicators

Indicator	gear	vessellength	country	2002	2003	2004	2005	2006
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Poland	#NULL!	#NULL!	0.05	#NULL!	#NULL!
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	5.11
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Poland	#NULL!	#NULL!	-0.02	-0.02	0.01
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.28
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Poland	#NULL!	#NULL!	-0.09	-0.08	-0.04
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	-0.05
A_ROI	Demersal Trawlers and Demersal Seiners	VL40XX	Estonia	#NULL!	#NULL!	#NULL!	0.17	#NULL!
A_ROI	Drift nets and fixed nets	VL1224	Germany	#NULL!	#NULL!	#NULL!	4.81	#NULL!
A_ROI	Drift nets and fixed nets	VL1224	Poland	#NULL!	#NULL!	-0.02	0.00	#NULL!
A_ROI	Drift nets and fixed nets	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.02
A_ROI	Drift nets and fixed nets	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Drift nets and fixed nets	VL2440	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Drift nets and fixed nets	VL2440	Poland	#NULL!	#NULL!	-0.03	#NULL!	#NULL!
A_ROI	Gears using hooks	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Passive gears	VL0012	Estonia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Passive gears	VL0012	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Passive gears	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.15
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Poland	#NULL!	#NULL!	2.26	#NULL!	#NULL!
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	39.09
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Poland	#NULL!	#NULL!	0.54	0.62	1.14
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	9.00
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Poland	#NULL!	#NULL!	-0.86	-0.05	0.59
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.62
B_BER	Demersal Trawlers and Demersal Seiners	VL40XX	Estonia	#NULL!	#NULL!	#NULL!	2.16	#NULL!
B_BER	Drift nets and fixed nets	VL1224	Germany	#NULL!	#NULL!	#NULL!	4.81	#NULL!
B_BER	Drift nets and fixed nets	VL1224	Poland	#NULL!	#NULL!	0.54	1.00	#NULL!
B_BER	Drift nets and fixed nets	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	1.35
B_BER	Drift nets and fixed nets	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Drift nets and fixed nets	VL2440	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Drift nets and fixed nets	VL2440	Poland	#NULL!	#NULL!	0.23	#NULL!	2.49
B_BER	Gears using hooks	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	5.30
B_BER	Passive gears	VL0012	Estonia	#NULL!	#NULL!	#NULL!	0.19	#NULL!
B_BER	Passive gears	VL0012	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Passive gears	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	3.20
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Poland	#NULL!	#NULL!	0.11	#NULL!	#NULL!
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Sweden	22.36	35.33	34.95	30.74	22.17
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Poland	#NULL!	#NULL!	1.39	1.82	2.18
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Sweden	18.50	19.62	28.20	27.64	25.92
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Poland	#NULL!	#NULL!	-0.92	0.20	0.58
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	7.48	6.43	4.80	1.92	2.31
C_GVA	Demersal Trawlers and Demersal Seiners	VL40XX	Estonia	#NULL!	#NULL!	#NULL!	8.89	#NULL!
C_GVA	Drift nets and fixed nets	VL1224	Germany	#NULL!	#NULL!	#NULL!	2.33	#NULL!
C_GVA	Drift nets and fixed nets	VL1224	Poland	#NULL!	#NULL!	1.41	2.29	#NULL!
C_GVA	Drift nets and fixed nets	VL1224	Sweden	7.19	10.79	12.68	6.31	0.27
C_GVA	Drift nets and fixed nets	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Drift nets and fixed nets	VL2440	Latvia	2.23	2.03	1.88	1.15	#NULL!
C_GVA	Drift nets and fixed nets	VL2440	Poland	#NULL!	#NULL!	0.26	#NULL!	3.38
C_GVA	Gears using hooks	VL1224	Sweden	#NULL!	#NULL!	#NULL!	0.09	0.34
C_GVA	Passive gears	VL0012	Estonia	#NULL!	#NULL!	#NULL!	0.29	#NULL!
C_GVA	Passive gears	VL0012	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Passive gears	VL0012	Sweden	14.40	21.87	19.68	12.16	7.15
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	1.60
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	6.40
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	7.00
D_wage	Demersal Trawlers and Demersal Seiners	VL40XX	Estonia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Drift nets and fixed nets	VL1224	Germany	#NULL!	#NULL!	#NULL!	32.00	#NULL!
D_wage	Drift nets and fixed nets	VL1224	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Drift nets and fixed nets	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	1.10
D_wage	Drift nets and fixed nets	VL2440	Germany	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Drift nets and fixed nets	VL2440	Latvia	3.30	3.60	3.60	4.70	#NULL!
D_wage	Drift nets and fixed nets	VL2440	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Gears using hooks	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.90
D_wage	Passive gears	VL0012	Estonia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Passive gears	VL0012	Latvia	#NULL!	#NULL!	#NULL!	0.70	#NULL!
D_wage	Passive gears	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	0.40

D.2 Biological indicators

Indicator= Fp(current) / Ftarget					Indicator= C/Biomasa per		
Country	fleet	Datos	Total	Country	fleet	Datos	Total
Denmark	DRBVL1224	Indic2002value	0.00151	Denmark	DRBVL1224	Indic_B2002value	0.00030
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00879			Indic_B2004value	0.00178
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.01458			Indic_B2006value	0.00281
	DTSVL0012	Indic2002value	0.14387		DTSVL0012	Indic_B2002value	0.02856
		Indic2003value	0.10282			Indic_B2003value	0.02080
		Indic2004value	0.13335			Indic_B2004value	0.02700
		Indic2005value	0.10479			Indic_B2005value	0.02393
		Indic2006value	0.11079			Indic_B2006value	0.02135
	DTSVL1224	Indic2002value	3.10585		DTSVL1224	Indic_B2002value	0.61657
		Indic2003value	3.06643			Indic_B2003value	0.62034
		Indic2004value	2.63997			Indic_B2004value	0.53445
		Indic2005value	2.49936			Indic_B2005value	0.57077
		Indic2006value	2.93073			Indic_B2006value	0.56473
	PGPVL0012	Indic2002value	2.61452		PGPVL0012	Indic_B2002value	0.51903
		Indic2003value	2.37464			Indic_B2003value	0.48039
		Indic2004value	2.30878			Indic_B2004value	0.46740
		Indic2005value	2.21601			Indic_B2005value	0.50607
		Indic2006value	1.94779			Indic_B2006value	0.37532
	PGPVL1224	Indic2002value	0.83221		PGPVL1224	Indic_B2002value	0.16521
		Indic2003value	0.72947			Indic_B2003value	0.14757
		Indic2004value	0.52765			Indic_B2004value	0.10682
		Indic2005value	0.42536			Indic_B2005value	0.09714
		Indic2006value	0.38228			Indic_B2006value	0.07366
	PMPVL0012	Indic2002value	0.40081		PMPVL0012	Indic_B2002value	0.07957
		Indic2003value	0.34106			Indic_B2003value	0.06900
		Indic2004value	0.42018			Indic_B2004value	0.08506
		Indic2005value	0.38309			Indic_B2005value	0.08749
		Indic2006value	0.47609			Indic_B2006value	0.09174
	PMPVL1224	Indic2002value	0.57063		PMPVL1224	Indic_B2002value	0.11328
		Indic2003value	0.46967			Indic_B2003value	0.09501
		Indic2004value	0.51803			Indic_B2004value	0.10487
		Indic2005value	0.51920			Indic_B2005value	0.11857
		Indic2006value	0.62075			Indic_B2006value	0.11961
	PMPVL2440	Indic2002value	0.01082		PMPVL2440	Indic_B2002value	0.00215
		Indic2003value	0.00627			Indic_B2003value	0.00127
		Indic2004value	0.02972			Indic_B2004value	0.00602
		Indic2005value	0.00542			Indic_B2005value	0.00124
		Indic2006value	0.00007			Indic_B2006value	0.00001
	PTSVL1224	Indic2002value	1.90295		PTSVL1224	Indic_B2002value	0.37777
		Indic2003value	2.01758			Indic_B2003value	0.40816
		Indic2004value	1.70512			Indic_B2004value	0.34519
		Indic2005value	1.49368			Indic_B2005value	0.34111
		Indic2006value	1.73561			Indic_B2006value	0.33444
	PTSVL2440	Indic2002value	0.32097		PTSVL2440	Indic_B2002value	0.06372
		Indic2003value	0.14465			Indic_B2003value	0.02926
		Indic2004value	0.18456			Indic_B2004value	0.03736
		Indic2005value	0.16404			Indic_B2005value	0.03746
		Indic2006value	0.21064			Indic_B2006value	0.04059
	PTSVL40XX	Indic2002value	0.00006		PTSVL40XX	Indic_B2002value	0.00001
		Indic2003value	0.00071			Indic_B2003value	0.00014
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000
	TBBVL1224	Indic2002value	0.04109		TBBVL1224	Indic_B2002value	0.00816
		Indic2003value	0.03201			Indic_B2003value	0.00648
		Indic2004value	0.02533			Indic_B2004value	0.00513
		Indic2005value	0.02408			Indic_B2005value	0.00550
		Indic2006value	0.04348			Indic_B2006value	0.00838
	TBBVL2440	Indic2002value	0.02398		TBBVL2440	Indic_B2002value	0.00476
		Indic2003value	0.00714			Indic_B2003value	0.00144
		Indic2004value	0.00681			Indic_B2004value	0.00138
		Indic2005value	0.00534			Indic_B2005value	0.00122
		Indic2006value	0.00109			Indic_B2006value	0.00021
	TBBVL40XX	Indic2002value	0.01352		TBBVL40XX	Indic_B2002value	0.00268
		Indic2003value	0.00282			Indic_B2003value	0.00057
		Indic2004value	0.00327			Indic_B2004value	0.00066
		Indic2005value	0.00278			Indic_B2005value	0.00064
		Indic2006value	0.00068			Indic_B2006value	0.00013
Estonia	PGVL0012	Indic2002value	0.00000	Estonia	PGVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00043			Indic_B2006value	0.00008
	PTSVL2440	Indic2002value	0.00000		PTSVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.21059			Indic_B2006value	0.04058

Germany	DFNVL1224	Indic2002value	0.00000	Germany	DFNVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.07348			Indic_B2004value	0.01487
		Indic2005value	0.01565			Indic_B2005value	0.00357
		Indic2006value	0.06371			Indic_B2006value	0.01228
	DTSVL0012	Indic2002value	0.00000		DTSVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.15319			Indic_B2004value	0.03101
		Indic2005value	0.05528			Indic_B2005value	0.01262
		Indic2006value	0.11721			Indic_B2006value	0.02258
	DTSVL1224	Indic2002value	0.00000		DTSVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	1.17358			Indic_B2004value	0.23759
		Indic2005value	0.94579			Indic_B2005value	0.21599
		Indic2006value	1.18175			Indic_B2006value	0.22771
	DTSVL2440	Indic2002value	0.00000		DTSVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.40589			Indic_B2004value	0.08217
		Indic2005value	0.24726			Indic_B2005value	0.05647
		Indic2006value	0.44467			Indic_B2006value	0.08568
	DTSVL40XX	Indic2002value	0.00000		DTSVL40XX	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00010			Indic_B2004value	0.00002
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00005			Indic_B2006value	0.00001
	MGPVL1224	Indic2002value	0.00000		MGPVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.18443			Indic_B2006value	0.03554
	PGOVL1224	Indic2002value	0.00000		PGOVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00130			Indic_B2004value	0.00026
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PGOVL2440	Indic2002value	0.00000		PGOVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00408			Indic_B2006value	0.00079
	PGVL0012	Indic2002value	0.00000		PGVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.45188			Indic_B2004value	0.09148
		Indic2005value	0.27355			Indic_B2005value	0.06247
		Indic2006value	0.63592			Indic_B2006value	0.12254
	PMPVL0012	Indic2002value	0.00000		PMPVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.07282			Indic_B2006value	0.01403
	PTSVL0012	Indic2002value	0.00000		PTSVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00422			Indic_B2005value	0.00096
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL1224	Indic2002value	0.00000		PTSVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.03488			Indic_B2004value	0.00706
		Indic2005value	0.01804			Indic_B2005value	0.00412
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL2440	Indic2002value	0.00000		PTSVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.17904			Indic_B2004value	0.03625
		Indic2005value	0.02597			Indic_B2005value	0.00593
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL40XX	Indic2002value	0.00000		PTSVL40XX	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.10293			Indic_B2006value	0.01983
	TBBVL0012	Indic2002value	0.00000		TBBVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000
	TBBVL1224	Indic2002value	0.00000		TBBVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.04894			Indic_B2004value	0.00991
		Indic2005value	0.01871			Indic_B2005value	0.00427
		Indic2006value	0.05144			Indic_B2006value	0.00991
	TBBVL2440	Indic2002value	0.00000		TBBVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00003			Indic_B2004value	0.00001
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000

Latvia	DFNVL2440	Indic2002value	1.21196	Latvia	DFNVL2440	Indic_B2002value	0.24060
		Indic2003value	1.21196			Indic_B2003value	0.24518
		Indic2004value	1.28122			Indic_B2004value	0.25938
		Indic2005value	0.93217			Indic_B2005value	0.21288
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PGVL0012	Indic2002value	0.00000		PGVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.01558			Indic_B2004value	0.00315
		Indic2005value	0.01143			Indic_B2005value	0.00261
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL1224	Indic2002value	0.00000		PTSVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00139			Indic_B2005value	0.00032
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL2440	Indic2002value	0.45016		PTSVL2440	Indic_B2002value	0.08937
		Indic2003value	0.34628			Indic_B2003value	0.07005
		Indic2004value	0.41553			Indic_B2004value	0.08412
		Indic2005value	0.43665			Indic_B2005value	0.09972
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL40XX	Indic2002value	0.00000		PTSVL40XX	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000
Poland	DFNVL1224	Indic2002value	0.00000	Poland	DFNVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	1.10779			Indic_B2004value	0.22427
		Indic2005value	0.80947			Indic_B2005value	0.18486
		Indic2006value	1.06033			Indic_B2006value	0.20432
	DFNVL2440	Indic2002value	0.00000		DFNVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.18940			Indic_B2004value	0.03834
		Indic2005value	0.09384			Indic_B2005value	0.02143
		Indic2006value	0.00000			Indic_B2006value	0.00000
	DTSVL0012	Indic2002value	0.00000		DTSVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.01449			Indic_B2004value	0.00293
		Indic2005value	0.02293			Indic_B2005value	0.00524
		Indic2006value	0.00000			Indic_B2006value	0.00000
	DTSVL1224	Indic2002value	0.00000		DTSVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	1.16257			Indic_B2004value	0.23536
		Indic2005value	1.05723			Indic_B2005value	0.24144
		Indic2006value	1.25963			Indic_B2006value	0.24272
	DTSVL2440	Indic2002value	0.00000		DTSVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.63241			Indic_B2004value	0.12803
		Indic2005value	0.66115			Indic_B2005value	0.15099
		Indic2006value	0.91611			Indic_B2006value	0.17653
	HOKVL1224	Indic2002value	0.00000		HOKVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.22024			Indic_B2004value	0.04459
		Indic2005value	0.20954			Indic_B2005value	0.04785
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PGVL0012	Indic2002value	0.00000		PGVL0012	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	1.23960			Indic_B2004value	0.25095
		Indic2005value	1.10783			Indic_B2005value	0.25299
		Indic2006value	1.44815			Indic_B2006value	0.27905
	PMPVL1224	Indic2002value	0.00000		PMPVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.06603			Indic_B2004value	0.01337
		Indic2005value	0.03172			Indic_B2005value	0.00724
		Indic2006value	0.00000			Indic_B2006value	0.00000
	PTSVL2440	Indic2002value	0.00000		PTSVL2440	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.60330			Indic_B2004value	0.12214
		Indic2005value	0.43311			Indic_B2005value	0.09891
		Indic2006value	0.54152			Indic_B2006value	0.10435

Sweden	DFNVL1224	Indic2002value	0.88092	Sweden	DFNVL1224	Indic_B2002value	0.17488
		Indic2003value	1.21511			Indic_B2003value	0.24582
		Indic2004value	1.01872			Indic_B2004value	0.20623
		Indic2005value	0.49243			Indic_B2005value	0.11246
		Indic2006value	0.31153			Indic_B2006value	0.06003
	DTSVL0012	Indic2002value	0.03353		DTSVL0012	Indic_B2002value	0.00666
		Indic2003value	0.10322			Indic_B2003value	0.02088
		Indic2004value	0.09353			Indic_B2004value	0.01893
		Indic2005value	0.03813			Indic_B2005value	0.00871
		Indic2006value	0.06597			Indic_B2006value	0.01271
	DTSVL1224	Indic2002value	3.54658		DTSVL1224	Indic_B2002value	0.70407
		Indic2003value	3.40498			Indic_B2003value	0.68883
		Indic2004value	4.45817			Indic_B2004value	0.90253
		Indic2005value	2.94836			Indic_B2005value	0.67331
		Indic2006value	3.80291			Indic_B2006value	0.73279
	DTSVL2440	Indic2002value	2.34255		DTSVL2440	Indic_B2002value	0.46504
		Indic2003value	1.81792			Indic_B2003value	0.36777
		Indic2004value	1.77333			Indic_B2004value	0.35900
		Indic2005value	1.24651			Indic_B2005value	0.28466
		Indic2006value	1.85487			Indic_B2006value	0.35742
	HOKVL1224	Indic2002value	0.27416		HOKVL1224	Indic_B2002value	0.05443
		Indic2003value	0.24624			Indic_B2003value	0.04981
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.22799			Indic_B2005value	0.05206
		Indic2006value	0.29157			Indic_B2006value	0.05618
	PGVL0012	Indic2002value	3.05616		PGVL0012	Indic_B2002value	0.60671
		Indic2003value	3.16844			Indic_B2003value	0.64098
		Indic2004value	3.16945			Indic_B2004value	0.64164
		Indic2005value	2.46242			Indic_B2005value	0.56234
		Indic2006value	2.20778			Indic_B2006value	0.42542
	PTSVL1224	Indic2002value	0.00000		PTSVL1224	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.01024			Indic_B2005value	0.00234
		Indic2006value	0.00523			Indic_B2006value	0.00101
	PTSVL2440	Indic2002value	0.31356		PTSVL2440	Indic_B2002value	0.06225
		Indic2003value	0.07018			Indic_B2003value	0.01420
		Indic2004value	0.26401			Indic_B2004value	0.05345
		Indic2005value	0.21376			Indic_B2005value	0.04882
		Indic2006value	0.45260			Indic_B2006value	0.08721
	PTSVL40XX	Indic2002value	0.03418		PTSVL40XX	Indic_B2002value	0.00678
		Indic2003value	0.00059			Indic_B2003value	0.00012
		Indic2004value	0.03480			Indic_B2004value	0.00704
		Indic2005value	0.00019			Indic_B2005value	0.00004
		Indic2006value	0.00000			Indic_B2006value	0.00000
(en blanco)	(en blanco)	Indic2002value	0.00000	(en blanco)	(en blanco)	Indic_B2002value	0.00000
		Indic2003value	0.00000			Indic_B2003value	0.00000
		Indic2004value	0.00000			Indic_B2004value	0.00000
		Indic2005value	0.00000			Indic_B2005value	0.00000
		Indic2006value	0.00000			Indic_B2006value	0.00000
Finland	DFNVL1224	Indic2002value	0.09599	Finland	DFNVL1224	Indic_B2002value	0.01906
		Indic2003value	0.14568			Indic_B2003value	0.02947
		Indic2004value	0.12003			Indic_B2004value	0.02430
		Indic2005value	0.08024			Indic_B2005value	0.01832
		Indic2006value	0.02475			Indic_B2006value	0.00477
Total Suma de y_2002value			0.00000	Total Suma de y_2002value			4.41162
Total Suma de y_2003value			0.00000	Total Suma de y_2003value			4.25355
Total Suma de y_2004value			0.00000	Total Suma de y_2004value			5.85350
Total Suma de y_2005value			0.00000	Total Suma de y_2005value			5.24706
Total Suma de y_2006value			0.00000	Total Suma de y_2006value			4.96906

D.3 Technical indicator

indicator	gear	vessellength	country	2002	2003	2004	2005	2006
CAP.UT	Demersal Trawlers and Demersal Seiners	VL0012	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Demersal Trawlers and Demersal Seiners	VL0012	Sweden	0.26	0.24	0.24	0.21	0.26
CAP.UT	Demersal Trawlers and Demersal Seiners	VL1224	Poland	#NULL!	#NULL!	#NULL!	0.43	0.53
CAP.UT	Demersal Trawlers and Demersal Seiners	VL1224	Sweden	0.55	0.53	0.51	0.51	0.51
CAP.UT	Demersal Trawlers and Demersal Seiners	VL2440	Poland	#NULL!	#NULL!	#NULL!	0.52	0.64
CAP.UT	Demersal Trawlers and Demersal Seiners	VL2440	Sweden	0.72	0.70	0.66	0.70	0.68
CAP.UT	Demersal Trawlers and Demersal Seiners	VL40XX	Estonia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Drift nets and fixed nets	VL1224	Germany	0.78	0.72	0.74	0.73	0.64
CAP.UT	Drift nets and fixed nets	VL1224	Poland	#NULL!	#NULL!	#NULL!	0.37	0.43
CAP.UT	Drift nets and fixed nets	VL1224	Sweden	0.48	0.53	0.48	0.42	0.45
CAP.UT	Drift nets and fixed nets	VL2440	Germany	0.86	0.89	1.03	0.92	#NULL!
CAP.UT	Drift nets and fixed nets	VL2440	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Drift nets and fixed nets	VL2440	Poland	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Gears using hooks	VL1224	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Passive gears	VL0012	Estonia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Passive gears	VL0012	Latvia	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
CAP.UT	Passive gears	VL0012	Sweden	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!

APPENDIX E: MEDITERRANEAN INDICATOR DATA TABLES

E.1 Social and Economic Indicators

Indicator	gear	vessellength	country	2002	2003	2004	2005	2006
A_ROI	Beam trawlers	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Beam trawlers	VL1224	Greece	#NULL!	#NULL!	0.49	2.12	0.99
A_ROI	Beam trawlers	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.05
A_ROI	Beam trawlers	VL2440	Greece	#NULL!	#NULL!	0.28	1.30	3.26
A_ROI	Beam trawlers	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.20
A_ROI	Combining mobile & passive gears	VL0012	Greece	#NULL!	#NULL!	2.83	2.76	1.72
A_ROI	Combining mobile & passive gears	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Combining mobile & passive gears	VL1224	Greece	#NULL!	#NULL!	-0.38	1.76	0.88
A_ROI	Combining mobile & passive gears	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.56
A_ROI	Demersal Trawlers and Demersal Seiners	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.45
A_ROI	Demersal Trawlers and Demersal Seiners	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.20
A_ROI	Demersal Trawlers and Demersal Seiners	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.02
A_ROI	Demersal Trawlers and Demersal Seiners	VL40XX	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Gears using hooks	VL0012	Greece	#NULL!	#NULL!	22.37	16.45	6.46
A_ROI	Gears using hooks	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.59
A_ROI	Gears using hooks	VL1224	Greece	#NULL!	#NULL!	15.12	4.21	7.29
A_ROI	Gears using hooks	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	0.41
A_ROI	Gears using hooks	VL2440	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
A_ROI	Passive gears	VL0012	Greece	#NULL!	#NULL!	2.73	1.97	1.86
A_ROI	Passive gears	VL1224	Greece	#NULL!	#NULL!	3.49	1.64	1.13
B_BER	Beam trawlers	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Beam trawlers	VL1224	Greece	#NULL!	#NULL!	5.15	22.03	9.62
B_BER	Beam trawlers	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	1.16
B_BER	Beam trawlers	VL2440	Greece	#NULL!	#NULL!	2.52	10.02	22.14
B_BER	Beam trawlers	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	1.71
B_BER	Combining mobile & passive gears	VL0012	Greece	#NULL!	#NULL!	20.96	30.14	18.97
B_BER	Combining mobile & passive gears	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Combining mobile & passive gears	VL1224	Greece	#NULL!	#NULL!	-2.23	12.01	25.40
B_BER	Combining mobile & passive gears	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	3.99
B_BER	Demersal Trawlers and Demersal Seiners	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	2.66
B_BER	Demersal Trawlers and Demersal Seiners	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	1.93
B_BER	Demersal Trawlers and Demersal Seiners	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	1.09
B_BER	Demersal Trawlers and Demersal Seiners	VL40XX	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Gears using hooks	VL0012	Greece	#NULL!	#NULL!	36.43	27.12	29.61
B_BER	Gears using hooks	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	3.86
B_BER	Gears using hooks	VL1224	Greece	#NULL!	#NULL!	25.17	4.64	20.72
B_BER	Gears using hooks	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	2.89
B_BER	Gears using hooks	VL2440	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
B_BER	Passive gears	VL0012	Greece	#NULL!	#NULL!	14.55	18.08	17.84
B_BER	Passive gears	VL1224	Greece	#NULL!	#NULL!	25.49	9.69	8.07
C_GVA	Beam trawlers	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Beam trawlers	VL1224	Greece	#NULL!	#NULL!	13.32	36.35	19.64
C_GVA	Beam trawlers	VL1224	Italy	#NULL!	#NULL!	18.39	13.67	6.42
C_GVA	Beam trawlers	VL2440	Greece	#NULL!	#NULL!	15.76	41.46	90.00
C_GVA	Beam trawlers	VL2440	Italy	#NULL!	#NULL!	#NULL!	4.79	7.34
C_GVA	Combining mobile & passive gears	VL0012	Greece	#NULL!	#NULL!	10.78	11.50	10.77
C_GVA	Combining mobile & passive gears	VL0012	Italy	172.09	135.39	65.17	50.22	#NULL!
C_GVA	Combining mobile & passive gears	VL1224	Greece	#NULL!	#NULL!	1.00	1.22	2.59
C_GVA	Combining mobile & passive gears	VL1224	Italy	150.31	204.49	17.64	13.02	14.90
C_GVA	Demersal Trawlers and Demersal Seiners	VL0012	Italy	10.35	2.57	4.26	7.21	12.72
C_GVA	Demersal Trawlers and Demersal Seiners	VL1224	Italy	487.16	421.45	462.45	551.81	604.22
C_GVA	Demersal Trawlers and Demersal Seiners	VL2440	Italy	180.90	230.83	150.31	161.72	177.12
C_GVA	Demersal Trawlers and Demersal Seiners	VL40XX	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Gears using hooks	VL0012	Greece	#NULL!	#NULL!	29.84	34.60	55.31
C_GVA	Gears using hooks	VL0012	Italy	#NULL!	#NULL!	21.43	15.04	10.86
C_GVA	Gears using hooks	VL1224	Greece	#NULL!	#NULL!	10.78	6.69	30.60
C_GVA	Gears using hooks	VL1224	Italy	#NULL!	#NULL!	81.89	94.25	98.12
C_GVA	Gears using hooks	VL2440	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
C_GVA	Passive gears	VL0012	Greece	#NULL!	#NULL!	334.15	356.07	368.17
C_GVA	Passive gears	VL1224	Greece	#NULL!	#NULL!	17.38	12.23	6.26
D_wage	Beam trawlers	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL1224	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	14.90
D_wage	Beam trawlers	VL2440	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Beam trawlers	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	20.10
D_wage	Combining mobile & passive gears	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Combining mobile & passive gears	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Combining mobile & passive gears	VL1224	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Combining mobile & passive gears	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	9.90
D_wage	Demersal Trawlers and Demersal Seiners	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	13.50
D_wage	Demersal Trawlers and Demersal Seiners	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	20.10
D_wage	Demersal Trawlers and Demersal Seiners	VL2440	Italy	#NULL!	#NULL!	#NULL!	#NULL!	22.10
D_wage	Demersal Trawlers and Demersal Seiners	VL40XX	Italy	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Gears using hooks	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Gears using hooks	VL0012	Italy	#NULL!	#NULL!	#NULL!	#NULL!	24.30
D_wage	Gears using hooks	VL1224	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Gears using hooks	VL1224	Italy	#NULL!	#NULL!	#NULL!	#NULL!	16.50
D_wage	Gears using hooks	VL2440	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Passive gears	VL0012	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
D_wage	Passive gears	VL1224	Greece	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!

E.2 Biological Indicators

******Insufficient data available******

E.3 Technical Indicator

******Insufficient data available******

APPENDIX F: ECONOMIC VARIABLE DEFINITIONS

Economic variables

Fishing Income = Value of landings

- Determined by annual volume of landings per species and prices of those species

Gross revenue

- Gross revenue consists of fishing income and non fishing income

Variable costs

- Vary directly with activity (effort) i.e. fuel, provisions, repairs etc.

Fixed costs

- Does not vary with activity (effort).

Crew share

- Percentage share of the gross earnings to the crew

Other economic indicators

Net result

- Net result = Gross revenue –Variable costs – Crew share – Fixed costs

Net profit

- Net profit = Total revenue – (Running costs + Crew costs + Fixed costs + Depreciation and interest costs)

Gross cash flow

- Gross cash flow = Gross revenue – Variable costs – Fixed costs??? [SEC(2004) 1710 p.70]
- The (gross) cash flow (GCF) is *"Gross output (revenue) less all variable (operation) costs"* [SEC(2003) 74]. In [SEC(2003) 74] GCF is mentioned as central since in the short run fishermen stay in the fishery when GCF is positive but in the long run fishermen only stay if GCF covers fixed costs.

Operating profit margin

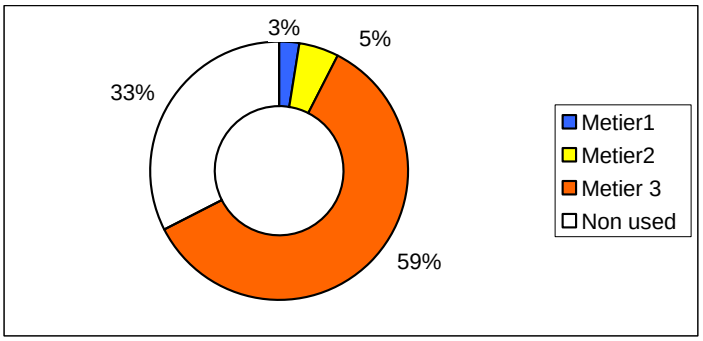
Operating profit margin = Net profit / Total revenue

APPENDIX G: EXAMPLE CALCULATION OF CAPACITY UTILISATION INDICATOR

	Capacity	Current effort		Maximum effort		Capacity utilization	
	kw	days	kwdays	Days	Kwdays	days	kwdays
Vessel 1	100	100	10000	200	20000	0.5	0.5
Vessel 2	1000	120	120000	200	200000	0.6	0.6
Total	1100	220	130000	400	220000	0.55	0.59
Average	550	110	65000	200	110000	0.55	0.59

Capacity utilisation in multi metier fleets

	Max capacity
Metier1	250
Metier2	500
Metier 3	6000
Non used	3250
Total	10000



ANNEX I DECLARATIONS OF EXPERTS

Declarations of invited experts are published on the STECF web site on https://stecf.jrc.ec.europa.eu/home together with the final report.

European Commission

EUR 23642 EN **– Joint Research Centre – Institute for the Protection and Security of the Citizen**

Title: Scientific, Technical and Economic Committee for Fisheries. Report of Working Group on the Balance Between Fishing Capacity and Resources: Part II (SGECA/SGRST 08-02)

Author(s): Anderson J., Calvo A., Calvo C., Döring R., Hölker F., Holmes S., Iriondo A., Lindebo E., Prelezzzo R., Sørenson L-C,. Oostenbrugge H.v.,

Luxembourg: Office for Official Publications of the European Communities
2008 – 100 pp. – 21 x 29.7 cm
EUR – Scientific and Technical Research series – ISSN 1018-5593
ISBN 978-92-79-10480-0
DOI 10.2788/39675

Abstract

It is widely recognised that there exists an imbalance between the capacity of the EU fishing fleet and available fishing opportunities, however, quantifying the extent of the 'imbalance' has proved hard to achieve. SGECA/SGRST-08-02 was held on 19th to 22th February 2008 in Brussels and focussed on the development and calculation of balance indicators to be included in Member States (MS) annual fleet capacity reports so that fishery managers can use the indicators to identify where imbalances exist, and act accordingly. The WG, which included biologists and economists, used aggregated data collected under the DCR to calculate technical and economic indicators while the biological indicators were calculated using the latest information from ICES in addition to other data sources. The indicators were calculated for each fleet segment in each MS where data was available; however more emphasis was placed on the methods employed rather than the results. STECF reviewed the report of the SGECA/SGRST 08-02 Working Group during its plenary meeting on 14th to 18th April 2008.

How to obtain EU publications

Our priced publications are available from EU Bookshop (http://bookshop.europa.eu), where you can place an order with the sales agent of your choice.

The Publications Office has a worldwide network of sales agents. You can obtain their contact details by sending a fax to (352) 29 29-42758.

The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

LB-NA-23642-EN-C

ISBN 978-92-79-10480-0