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Scientific, Technical and Economic Committee for Fisheries (STECF)

Review of economic data collected in relation to the DCF and harmonisation of sampling strategies (STECF-11-19)

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This report was reviewed by the STECF during its 37th plenary meeting held from 7th to 11th, 2011 in Brussels, Belgium

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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Review of economic data collected in relation to the DCF and harmonisation of sampling strategies (STECF-11-19)

THIS REPORT WAS REVIEWED DURING THE PLENARY MEETING HELD IN BRUSSELS 7-11 November 2011

Request to the STECF

STECF is requested to review the report of the **STECF-EWG-11-18** Expert Working Group of October 17 – 21, 2011 (Salerno, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

Introduction

The report of the Expert Working Group on Review of economic data collected in relation to the DCF and harmonisation of sampling strategies (STECF-11-19) was reviewed by the STECF during its 37th plenary meeting held from 7th to 11th, 2011 in Brussels, Belgium. The following observations, conclusions and recommendations represent the outcomes of that review.

STECF observations

STECF notes that the extensive TORs were all addressed by the EWG-11-18. STECF also acknowledges the efforts made to review and summarise the outcomes from the three DCF workshops arranged during 2011.

STECF notes that estimating the capital value within the fishing fleet is complicated, and that some Member States were not using a common approach based on the PIM mentioned in the DCF. EWG-11-18 addressed a range of issues related to the valuation of capital and estimating total capital invested in fleets.

Similarly, estimation of depreciation costs is addressed differently by Member States.

The EWG-11-18 report contains a range of useful proposals to revise the guidelines for the Member State Annual Reports within the National Programmes.

Collection of economic data relating to the processing industry is undertaken under the DCF, but Eurostat also obtains data from national statistical offices. STECF suggests any duplication of data collection effort related to the processing industry should be avoided

STECF conclusions

In relation to the valuation of capital, STECF concludes that clarifications and specifications of concepts and terms given by EWG 11-18 should be taken into account in the revision of the DCF

STECF considers that it would be useful to identify issues that become apparent after comparing results of estimating fleet capital value using the PIM method in a number of MS. The EWG has proposed that this is among the ToR of a new Planning Group on Economic Issues that could operate under the DCF.

Finally, in relation to a revision of the DCF, STECF also concludes that the temporal, spatial and activity resolution levels of cost variables to be collected under the DCF are not sufficient for some applications, such as the evaluation or impact assessment of management plans. However, STECF concludes that the DCF should not be altered with respect to the resolution requirements as it is practically impossible to get comprehensive cost data for higher resolution scales. STECF concludes that it is more appropriate to develop and validate specific methodologies of disaggregation of economic data. STECF concludes that the study on this issue proposed by EWG 11-18 could provide useful results.

STECF recommendations

Based on the above observations and conclusions from EWG-11-18, STECF recommends the following:
- a revised DCF should take account of the proposals made in section 5 of the EWG-11-18 report

- depreciation should be calculated using the degressive depreciation scheme based on capital values estimated using replacement values (as opposed to capital values estimated using historical values) as explained in section 5.1 of the EWG-11-18 report.

- the Commission should initiate two studies focussing on:
  1) disaggregation of economic data below the fleet level to subareas and/or métiers, which, for instance, is relevant in relation to future needs for impact assessments and evaluation of management plans, and also when addressing ecosystem based management
  2) valuation of intangible assets such as access rights or fishing concessions, which are increasingly used in European fisheries but are traded in a non-transparent way so that it is extremely difficult to collect reliable and comprehensive data relating to value of access rights.

- the Commission should establish a comprehensive glossary of terms for collected economic data in order to avoid misinterpretations and incorrect use when data are used in specific situations. The glossary should be established based on the principles stated in Section 9 of the EWG-11-18 report, for instance by contracting a small group of experts using ad-hoc contracts.

- the Commission's guidelines for Member State Annual Reports in relation to the National Programmes should be communicated to Member States in accordance with the proposals in Section 10 of the EWG-11-18 report, enough that they can be applied in the next submission of AR (May 2012)

- the recommendation from the 8th Liaison meeting to the Commission about establishing a Planning Group for Economic Issues (PGECON) should be taken up. In order to have interaction and consistency, the PGECON chair should coordinate any relevant issues discussed and proposed with other groups collecting data (RCM, ICES etc.). The TORs for PGECON should cover at least the items mentioned in Section 13.1 of the EWG-11-18 report

- the future needs for economic data in the DCF should be further discussed and investigated within relevant groups in order to have thoroughly considered conclusions before any final decisions are taken.

REPORT TO THE STECF

EXPERT WORKING GROUP ON REVIEW OF ECONOMIC DATA COLLECTED IN RELATION TO THE DCF AND HARMONISATION OF SAMPLING STRATEGIES (EWG-11-18)

Salerno, Italy, 17-21 October 2011

1 EXECUTIVE SUMMARY

The STECF Expert Working Group (EWG) on reflections on the review of economic data collected in relation to the DCF and harmonisation of sampling strategies (EWG 11-18) met in Salerno, from 17th to 21st October 2011. The terms of reference for the EWG are given in section 4.1 The expert group worked through a series of Sub Groups, presentations and plenary discussions.

The main conclusions and recommendations from the meeting are given in the section that immediately follows this executive summary.

This Expert Working Group has dealt with a broad range of issues that are important in the improvement of the collection of economic data and in the evolution of the DCF.

A key topic for the meeting was to review the main conclusions of 3 workshops on economic issues that were held in 2011 under the DCF. The aim of these workshops was to mutually gain insight in common practice as performed in different MS, exchange ideas and potentially derive some best practice.

The workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF" reviewed the estimation of capital value and capital costs by MS. DCF requires to apply the PIM method for the calculation of capital value. However, the "capital WS" revealed that not all MS applied the PIM approach and, in some cases, the estimated values are based on very limited data. Still a high level of non-homogeneity of estimated values is present. In order to overcome these problems, the "capital WS" clarified the terms and the concepts behind the PIM method and carried out a training session. Taking into account the WS conclusions, EWG 11-18 suggested some revisions of the DCF to avoid misunderstanding of concepts and to assure consistency in capital measures. EWG 11-18 also reviewed the best practices for capital evaluation suggested by the "capital WS" and endorsed them. EWG 11-18 recognized that the method for the estimation of the capital value developed within the EC study No. FISH/2005/03 only allows to estimate the value of tangible assets. EWG 11-18 considered that further research in valuation of intangible would be essential.

The workshop on "allocation of economic data on disaggregated level" considered that the resolution level of cost variables to be collected under the DCF is not sufficient for several applications. However, EWG 11-18 pointed out that DCF should not be altered with respect to the resolution requirements as it is practically impossible to get comprehensive cost data for higher resolution scales. Rather methods for disaggregation should be further developed. The general approach used by the "allocation WS" to disaggregate variable costs was to correlate costs data with data that are available at higher resolution (landings, effort and capacity data). Main "cost drivers", which could be used to disaggregate costs data have been identified. EWG 11-18 concluded that the "allocation WS" can be regarded only as an initial step to develop more specific methods. It was beyond the scope of the WS to validate specific methodologies of disaggregation. EWG 11-18 considered that this task can only be addressed by a comprehensive study. However, guidelines as starting point for preliminary approaches as well as for further analyses can be derived by from the outcome of the "allocation WS".

The workshop on "statistical issues related to the collection of economic data within the DCF" was aimed at exchanging common practice as performed in different MS, identifying related problems and deriving best practices. According with the results of the "statistical WS", EWG 11-18 reviewed the table with "Definition and presentation of accuracy indicators to be presented by MS in the AR". EWG 11-18 also considered that the next step for quality control shall be to assess the values of the accuracy indicators, which have to be presented in the next AR.

EWG 11-18 discussed the compilation of a glossary of the economic terms used in the DCF. The glossary is an essential tool to improve harmonization of economic data collection among MS. It would improve the data collection procedures as clear definitions of variables and a common understanding is the starting point of any survey. Definitions of the economic terms used in the DCF are reported in different reports and sometimes they are not consistent. The compilation of an "official" glossary would therefore constitute a reference and would avoid never ending discussions in expert working groups. EWG 11-18 compiled a first preliminary glossary and listed the principles that should be considered in the process of finalization of the glossary. EWG 11-18 agreed that definitions from SBS (Structural Business Statistics, EU Reg. 250/2009) are to be considered as the "primary" definitions. If no definition is found in SBS, then definitions from a few other statistical sources can be used, i.e. ESA (European System of Accounts). It is important to use as few sources as possible to be sure that the definitions are consistent. This approach will give the possibility to compare the results among sectors.

EWG 11-18 reviewed the guidelines for the Annual Report (text and tales) for all three economic modules of the DCF (fleet, aquaculture and processing). The latest AR guidelines have been compiled in 2009. Since then, several improvements have been proposed by STECF to better report the data collection procedures and to better assess the quality of data. A revision of the guidelines is therefore necessary in order to include these improvements. In reviewing the guidelines, EWG 11-18 took into account previous STECF working groups which already suggested some kind of revisions (SGECA 10-03, SGECA 10-04, SGRN 10-02, EWG 11-08). Concerning clustering, EWG 11-18 recommends MS to keep the clustering scheme consistent over time, and if not to explain the reason in the AR.

EWG 11-18 discussed the concept of "metadata" and went through its definition. EWG 11-18 considered that the term "metadata" is both complex and ambiguous. The group also considered that several metadata are already made available to the Commission by MS. In fact metadata are included in National Programs, as well as in Annual Reports where methodologies, questionnaires, definitions, sampling plans, accuracy indicators are reported. All these information can be considered as "metadata". In addition, aggregated data provided through the official data calls can be as well regarded as metadata. EWG 11-18 discussed the reason of having a reference to metadata into the regulation. The storage in databases of metadata related to the primary socio-economic data are is required to allow the Commission the possibility to verify the socio-economic data collected by MS (EU Reg. 199/08, articles 13 and 16). EWG 11-18 considered that, for the purpose of verification, other more appropriate methods should be applied (as for instance an audit visit to MS) and suggested to delete this reference to metadata in the next DCF.

EWG 11-18 made an exploratory analysis to investigate possible new topics to be included in the future DCF. Some additional variables have been suggested under TOR 1 (financial depreciation and interest costs, number of unpaid FTE). Other important revisions could come from the compilation of the glossary that will improve some definitions of the economic DCF variables. EWG 11-18 also discussed the issue of integration of economic and biological data collection that is one of the core issue of the current DCF. This integration is in some way not fully operative. EWG 11-18 considered useful to carry some reflections to investigate the reason and to suggest improvements for the future DCF.

EWG 11-18 discussed the allocations of economists within the DCF. The group was informed on the proposal from the 8th Liaison meeting to establish a Planning Group for Economic Issues (PGECON). The LM, starting from the consideration of the poor participations of economists in RCMs, considered that, according to the DCF, the need of regional coordination with regard to economic data is limited to the definition of homogeneous clustering methodology and to the proposals for "adjustments" of some effort variables. But LM considered that, at European level, much more work would be needed

to compare methodologies, suggest best practices, assess data quality and propose studies and workshops. However, this is not necessarily specific for single RCM regions.

Therefore, LM recommended establishing a planning group (PGECON) to discuss methodological and coordination issues related to the economic modules of the DCF at European level (fleet economic data, aquaculture, processing sector). EWG 11-18 discussed this proposal and agreed with the establishment of PGECON. EWG 11-18 proposed general TORs for PGECON as well as specific TORs for its first meeting.

Finally, EWG 11-18 defined TORs for the following workshops and studies to be considered in 2012:

- Planning group on economic data (PGECON)

- WS on Aquaculture data collection

- Study to propose methodologies for estimation of intangible assets in EU fisheries

- Study to disaggregate economic variables at metier and/or geographical areas

EWG 11-18 also recalled the recommendation from SGECA 09-02 to launch a study to propose methodology in the case of non-probability sample survey.

2   CONCLUSIONS OF THE WORKING GROUP

Conclusions from TOR 1

Review of the main conclusions provided by the DCF workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF"

(1) EWG 11-18 considered that it is vital that both stock and flow aspects (investments, depreciations) of capital are well measured in order to support the development and monitoring of economic policy, as well as economic analysis more generally. Within these analytical purposes, the PIM method provides a common approach that assures consistency in capital measures

(2) EWG 11-18 considered that EC study No. FISH/2005/03 gives the general framework for the estimation of capital value of European fishing fleets. Input variables (i.e. depreciation rates, service life time, price/CU) have to be calibrated/adjusted according to the specific needs of each country and to the peculiarities of national fleet segments

(3) EWG 11-18 endorsed the clarification given by the "capital WS" on the terms and the concepts behind the PIM method and suggested to revise DCF accordingly

(4) EWG 11-18 endorsed the best practices suggested by the "capital WS" to be followed by MS in estimating capital value

(5) EWG 11-18 endorsed and partially amended the specification given by the "capital WS" on imputed value of unpaid labour, financial position for the fleet, debts and net financial costs

Conclusions from TOR 2

Review of the main conclusions provided by the DCF metier workshop on "allocation of Economic Data on disaggregated level". Recommendation of appropriate methodologies to disaggregate economic parameters at the level of métiers and sub-areas

(1) EWG 11-18 recognised that the "allocation WS" was very useful in identifying the needs for disaggregation of costs data and in investigating common practice as performed in different MS

(2) EWG 11-18 considered that the "allocation WS" was not intended to address potential needs for further amendments of the DCF. Any conclusions on disaggregation provided in the report refer to methodological issues and potential further analyses or procedures, but not to an alteration of the economic data collection under the DCF

(3) Even though the resolution level of cost variables to be collected under the DCF is not sufficient for several applications, the DCF should not be altered with respect to the resolution requirements as it is practically impossible to get comprehensive cost data for higher resolution scales. Rather, methods for disaggregation should be further developed.

(4) The general approach of disaggregation of variable cost data followed by the "allocation WS" was to use correlated data which are available at higher resolution (landings, effort and capacity data). Main "cost drivers", which could be used to disaggregate costs data, have been identified and evaluated with respect to their influence and correlation with cost items.

(5) EWG 11-18 considered that the disaggregation of cost data on the basis of correlated transversal and capacity data is based upon the assumption that all disaggregation levels have the same cost structure. This is not likely to be realistic in all cases. In particular, when a vessel performs both active and passive fishing techniques, cost structures are going to be different. Using different costs drivers (transversal and capacity variables) for different cost variables in the disaggregation process might automatically affect the cost structure.

(6) EWG 11-18 considered that the "allocation WS" can be regarded only as an initial step to develop more specific methods. It was beyond the scope of the "allocation WS" validate specific methodologies of disaggregation. However, guidelines as starting point for preliminary approaches as well as for further analyses can be derived by from the outcome of the allocation WS.

Conclusions from TOR 6

Propose estimation procedure for projections of the economic position of the fisheries using more recent available data and extra information

(1) EWG 11-18 considered that procedures as provided in SGMOS 10-06a and supported by EWG 11-03 have to be regarded as "state of the art" as no better method is available at the moment

(2) EWG 11-18 noted that the underlying relationship between the cost variable and the auxiliary variables have been largely tested and validated also in other contexts (for instance during the "allocation WS") and are based on common experience and economic theory

(3) For a long term forecast, EWG 11-18 considered that other variables (e.g. level of stocks) or external shocks might affect costs. As a consequence, the introduction of more general models

(e.g. bio-economic models) and flexible methods (multiple regression, non-linear parametric regressions) to obtain predictions seem to be more appropriate.

Conclusions from TOR 3 and 4

Review of the main conclusions provided by the DCF workshop on "statistical issues related to the collection of economic data within the DCF". Recommend follow up actions.

Further clarify definitions and calculations of statistical indicators for quality assessment and provide guidelines for data quality assessment methods for Non-Probability sampling and representativeness in case of low response rates.

(1) The general purpose of the statistical workshop was to exchange common practice as performed in different MS, identify related problems and derive some best practice. EWG 11-18 considered that the statistical WS provided useful reflections to improve the collection of economic data

(2) Further work is needed on quality indicators for NPSS and high non response rates. EWG 11-18 recalled SGECA 09-02 recommendation to have a specific study on NPSS (quality indicators, estimation techniques, etc.) and on non-response. In the meantime, in case of Non Probability Sample Surveys, MS has to explain the reason for not using probability sampling, describe the models used to estimate variables for the total population and to assess the quality of estimates, calculate CV not only on the basis of estimated values but also on observed values

(3) EWG 11-18 considered that next step for quality control shall be to assess the values of the accuracy indicators, which have to be presented in the next AR

(4) EWG 11-18 recognized that quality is a subjective concept. It depends on the end user's needs. Therefore, before concrete targets are defined application needs should be taken into consideration

(5) EWG 11-18 suggested that most effort should be allocated to the economically most important segments. This may require different sampling strategies and different precision targets for different segments

Conclusions from TOR 5

Glossary of the economic terms used in the DCF

(1) EWG 11-18 considered that the compilation of a glossary of economic terms used in the DCF is an essential tool to improve harmonization of economic data collection among MS. It would improve the data collection procedures as clear definitions of variables and a common understanding is the starting point of any survey

(2) EWG 11-18 noted that definitions of the economic terms used in the DCF are reported in different reports and sometimes they are not consistent. The compilation of an "official" glossary would therefore constitute a reference and would avoid never ending discussions in expert working groups

(3) EWG 11-18 suggested a list of principles for the compilation of the glossary. The main principle is that definitions from SBS (Structural Business Statistics, EU Reg. 250/2009) are to be considered as the "primary" definitions. If no definition is found in SBS, then definitions from a few other statistical sources can be used, i.e. ESA (European System of Accounts). It is important to use as few sources as possible to be sure that the definitions are consistent. This approach will give the possibility to compare the results between sectors

(4) EWG 11-18 prepared only a preliminary glossary because the compilation of the final glossary will require much more time than available during the meeting and also because the group considered more useful to fix the general principles to be followed for the finalization of the glossary

(5) The glossary prepared by EWG 11-18 is a very preliminary step that should be further reviewed. Specific comments from experts attending EWG 11-18 have been included in the report

(6) EWG 11-18 considered that the glossary should be available for the revision of the DCF. In this context, the group proposed that only one annex with general definition for all three sectors (fleet, aquaculture, processing) should be included in the DCF. This will ensure that definitions across the three modules are the same for common variables

Conclusions from TOR 7

Review of the current guidelines for AR with particular respect to clustering in order to encourage Member States to adopt a common and consistent approach

(1) The latest AR guidelines have been compiled in 2009. Since then, several improvements have been proposed by STECF to better report the data collection procedures and to better assess the quality of data. A revision of the guidelines is therefore considered useful in order to include these improvements into the guidelines.

(2) In reviewing the guidelines, EWG 11-18 took into account previous STECF working groups which already suggested some kind of revisions (SGECA 10-03, SGECA 10-04, SGRN 10-02, EWG 11-08). Suggested guidelines are reported in annex 2.

(3) EWG 11-18 considered that MS should avoid clustering, especially for important segments, there exists an evident scientific need to have economic data for these segments. However, when segments need to be clustered to ensure confidentiality when reporting economic data or for statistical reasons, every effort should be made by MS to ensure that clustering is consistent across all variables in a particular year and within time series

(4) EWG 11-18 discussed recent economic data calls and concluded that the system of naming clustered segments by including the gear codes and length classes of all segments concerned does not improve clarity, as originally intended, but results in further confusion. Therefore, EWG 11-18 suggested to apply the guidelines for NP for the nomenclature of clustered segments also for of data calls (Clusters should be named after the "Important segments with distinct characteristics" as proposed in the methodology for clustering)

Conclusions from TOR 8

Propose common definition on "metadata" related to the primary socio-economic data collected under national programmes and propose guidelines for storage and provision of such metadata (as required by EU Reg. 199/08, articles 13 and 16)

(1) EWG 11-18 considered that several metadata are already made available to the Commission by MS. In fact metadata are included in National Programs, as well as in Annual Reports where methodologies, questionnaires, definitions, sampling plans, accuracy indicators are reported. All these information can be considered as "metadata". In addition, aggregated data provided through the official data calls can be as well regarded as metadata

(2) EWG 11-18 discussed the reason of having a reference to metadata into the regulation. The storage in databases of metadata related to the primary socio-economic data are is required to allow the Commission the possibility to verify the socio-economic data collected by MS (EU Reg. 199/08, articles 13 and 16). EWG 11-18 considered that for the purpose of verification, other more appropriate methods should be applied (as for instance an audit visit to MS) and suggested to delete this reference to metadata in the next DCF.

Conclusions from TOR 9

Future needs of economic data in the DCF. Discussion on topics to be included and on improvements in methodologies such as the application of statistical estimation procedures for some fleet segments

(1) EWG 11-18 made an exploratory analysis to investigate possible new topics to be included in the future DCF. Some additional variables have been suggested under TOR 1 (financial depreciation and interest costs, number of unpaid FTE), while historical depreciated capital value is proposed to be removed. Other important revisions could come from the compilation of the glossary that will improve some definitions of the economic DCF variables

(2) EWG 11-18 discussed the issue of integration of economic and biological data collection that is one of the core issue of the present DCF. This integration is in some way not fully operative. EWG 11-18 considered useful to carry out some reflections to investigate the reason and to suggest improvements for the future DCF

(3) Another aspect of the DCF that should be discussed and possibly revised is the procedure used by the Commission to ask for data needed for the scientific advice and for the compilation of the Annual Economic Report. The group discussed that a procedure based on definition of deadlines for data submissions could be more appropriate than the "data calls" procedure

(4) EWG 11-18 discussed the allocations of economists within the DCF. The group was informed of the proposal from the 8th Liaison meeting to establish a Planning Group for Economic Issues (PGECON). EWG 11-18 discussed this proposal and agreed with the establishment of PGECON. EWG 11-18 also proposed TORs for PGECON that are reported under paragraph 13.1.

Conclusions from TOR 10

Propose a TOR to address the issue of the methods used by MS to deal with < 10 m transversal variables

(1) EWG 11-18 considered that this TOR was not in line with the general aim of the meeting. In addition, EWG 11-18 was informed that the 8th LM endorsed the proposal for the following DCF WS: "Workshop on transversal data collection (i.e. common understanding) and statistical methodologies to estimate/re-evaluate them, with a special focus on the small scale fisheries". TORs for this meeting are already available

Conclusions from TOR 11

Definition of TORs, content and objectives of PGECON and others DCF workshops and studies for 2012 on economic data

(1) EWG 11-18 proposed general TORs for the Planning Group on Economic Data (PGECON) as well as specific TORs for the first meeting that will be held in the first quarter of 2012

(2) EWG 11-18 was informed that EWG 11-14 on "Economic Performance Of The Aquaculture Sector" proposed a workshop for 2012. EWG 11-18 was not able to finalize the TORs for this workshop as the report of EWG 11-14 was not yet available during the meeting. EWG 11-18 therefore suggests the TORs to be finalized by STECF plenary (November 2011).

(3) EWG 11-18 defined Tors for the following two studies:

    a. Study to propose methodologies for estimation of intangible assets in EU fisheries

    b. Study to disaggregate economic variables at metier and/or geographical areas

3   Recommendations of the working group

Recommendations from TOR 1

Review of the main conclusions provided by the DCF workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF"

Issue: estimation of depreciation costs	
EWG 11-18 Recommendation :	EWG 11-18 recommends that a degressive depreciation scheme should be applied and the replacement value should be considered as the proper basis for calculation of depreciation costs
Follow Up Action Needed :	Circulate EWG 11-18 report among national correspondents Put on TOR's for Meeting with NC in December
Responsible For Follow Up Action :	DG MARE National Correspondents
Time Frame	After STECF November 2011 plenary

Issue: clarification of DCF requirements for capital value and capital costs	
EWG 11-18 Recommendation :	EWG 11-18 recommends that the following points are considered in a revision of the present DCF: • change the word "replacement" into "current"; • delete the variable "Value of physical capital: depreciated historical value" from appendix VI; • include financial (monetary) costs related to capital flows: depreciation costs (calculated on actual financial statements like balance sheets) and interest costs
Follow Up Action Needed :	Bring to attention of STECF at November Plenary
Responsible For Follow Up Action :	DGMARE
Time Frame	2012

Issue: best practices in estimating capital value using PIM	
EWG 11-18 Recommendation :	EWG 11-18 recommends MS to refer to paragraph "5.2 Best practices" of the final report of the capital WS as guidelines for capital estimation
Follow Up Action Needed :	Circulate EWG 11-18 report among national correspondents Put on TOR's for Meeting with NC in December
Responsible For Follow Up Action :	DG MARE National Correspondents
Time Frame	2011 et seq.

Issue: revision of the guidelines for the compilation of Annual Reports	
EWG 11-18 Recommendation :	EWG 11-18 recommends to revise the guidelines for AR asking MS to report in detail how they have adjusted/calibrated the general PIM scheme to the specificity of their own fishing fleets and to explain the main assumptions
Follow Up Action Needed :	Compile new guidelines (text and tables)
Responsible For Follow Up Action :	DGMARE EWG 11-18 chair
Time Frame	After STECF November 2011 plenary

Issue: intangible assets in EU fisheries	
EWG 11-18 Recommendation :	EWG 11-18 recommends to launch a study aimed at estimation of intangible assets in EU fisheries

Follow Up Action Needed :	Include in the list of DCF studies endorsed by the Liaison Meeting
Responsible For Follow Up Action :	DGMARE
Time Frame	2011

Issue: best practice for the estimation of the imputed value of the unpaid labour	
EWG 11-18 Recommendation :	EWG 11-18 recommends MS to apply the method proposed by the "capital WS" and to give details on the average wages used in the Annual Report
Follow Up Action Needed :	Circulate EWG 11-18 report among national correspondents
Responsible For Follow Up Action :	DGMARE
Time Frame	After STECF November 2011 plenary

Recommendations from TOR 2

Review of the main conclusions provided by the DCF metier workshop on "allocation of Economic Data on disaggregated level". Recommendation of appropriate methodologies to disaggregate economic parameters at the level of métiers and sub-areas

Issue: methodologies to disaggregate economic parameters at the level of métiers and sub-areas	
EWG 11-18 Recommendation :	EWG 11-18 recommends to launch a study to suggest and validate specific methodologies of disaggregation of economic data
Follow Up Action Needed :	Include in the list of DCF studies endorsed by the Liaison Meeting
Responsible For Follow Up Action :	DGMARE
Time Frame	2011

Recommendations from TOR 4

Further clarify definitions and calculations of statistical indicators for quality assessment and provide guidelines for data quality assessment methods for Non-Probability sampling and representativeness in case of low response rates.

Issue: definitions and calculations of statistical indicators for quality assessment	
EWG 11-18 Recommendation :	EWG 11-18 recommends to review the table with "Definition and presentation of accuracy indicators to be presented by MS in the AR" elaborated by SGECA 10-03, by including an additional accuracy indicator, related to the coverage rate of the value of

	production as a supplement to the response rate
Follow Up Action Needed :	Update guidelines for AR
Responsible For Follow Up Action :	DGMARE and EWG 11-18 chair
Time Frame	After STECF November 2011 plenary

Issue: guidelines for data quality assessment methods for Non-Probability sampling	
EWG 11-18 Recommendation :	EWG 11-18 recalled SGECA 09-02 recommendation to have a specific study on NPSS (quality indicators, estimation techniques, etc.) and on non-response
Follow Up Action Needed :	Include in the list of DCF studies endorsed by the Liaison Meeting
Responsible For Follow Up Action :	DGMARE
Time Frame	2011

Recommendations from TOR 5

Glossary of the economic terms used in the DCF

Issue: compilation of the final glossary	
EWG 11-18 Recommendation :	EWG 11-18 recommends that the compilation of the final glossary should be finalized by a small group or even by only one person that should use the principles listed by EWG 11-18 as a reference. The final glossary should then be presented to STECF
Follow Up Action Needed :	Appoint someone to finalize the glossary
Responsible For Follow Up Action :	DGMARE
Time Frame	Soon after STECF November 2011 plenary

Recommendations from TOR 7

Review of the current guidelines for AR with particular respect to clustering in order to encourage Member States to adopt a common and consistent approach

Issue: review of the current guidelines for AR	
EWG 11-18 Recommendation :	EWG 11-18 recommends DGMARE to include the suggested

	revision in the guidelines for 2012 AR
Follow Up Action Needed :	Compile new guidelines (text and tables)
Responsible For Follow Up Action :	DGMARE and EWG 11-18 chair
Time Frame	After STECF 2011 November plenary

Issue: clustering scheme over time	
EWG 11-18 Recommendation :	EWG 11-18 recommends MS to keep the clustering scheme consistent over time, and if not to explain the reason in the AR
Follow Up Action Needed :	Circulate EWG 11-18 report among national correspondents
Responsible For Follow Up Action :	DGMARE
Time Frame	After STECF 2011 November plenary

Issue: quality requirements for data which is mandatory to be collected under a different EU legislation	
EWG 11-18 Recommendation :	EWG 11-18 recommends not to address DCF data quality requirements for data which is mandatory to be collected under a different EU legislation
Follow Up Action Needed :	Circulate EWG 11-18 report among national correspondents
Responsible For Follow Up Action :	DGMARE
Time Frame	After STECF 2011 November plenary

4 INTRODUCTION

The STECF Expert Working Group (EWG) on Reflections on the review of economic data collected in relation to the DCF and harmonisation of sampling strategies (EWG 11-18) met in Salerno, from 17th to 21st October 2011. The terms of reference for the EWG are given in section 4.1 18 experts attended the meeting. The expert group worked through a series of Sub Groups, presentations and plenary discussions.

4.1 Terms of Reference for EWG-11-18

The specific terms of reference for EWG 11-18 were as follows:

1. Review of the main conclusions provided by the DCF workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF". Recommend follow up actions.

2. Review of the main conclusions provided by the DCF metier workshop on "allocation of Economic Data on disaggregated level". Recommend appropriate methodologies to disaggregate economic parameters at the level of métiers and sub-areas.

3. Review of the main conclusions provided by the DCF workshop on "statistical issues related to the collection of economic data within the DCF". Recommend follow up actions.

4. Further clarify definitions and calculations of statistical indicators for quality assessment and provide guidelines for data quality assessment methods for Non-Probability sampling and representativeness in case of low response rates.

5. Compile a glossary of the economic terms used in the DCF.

6. Propose estimation procedure for projections of the economic position of the fisheries using more recent available data and extra information.

7. Review of the current guidelines for AR with particular respect to clustering in order to encourage Member States to adopt a common and consistent approach.

8. Propose common definition on "metadata" related to the primary socio-economic data collected under national programmes and propose guidelines for storage and provision of such metadata (as required by EU Reg. 199/08, articles 13 and 16).

9. Future needs of economic data in the DCF. Discussion on topics to be included and on improvements in methodologies such as the application of statistical estimation procedures for some fleet segments.

10. Investigate the methods used by MS to deal with <10m transversal variables and propose a corresponding ToR.

11. Definition of TORs, content and objectives of PGECON and others DCF workshops for 2012 on economic data.

12. AOB

4.2 Participants

The full list of participants at EWG-11-18 is presented in section 14.

5 Review of the main conclusions provided by the DCF workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF". Recommendation of follow up actions

The DCF workshop on "calculation of capital value in accordance to PIM methodology and definition of variables not clearly defined in the DCF" (referred as "the capital WS" in this report) was held in Naples (13th- 17th, June 2011). It was attended by 18 national experts representing 12 Member States.

The terms of reference (ToRs) of the Workshop, defined by SGECA 10-03 and endorsed by STECF in its 2010 winter plenary, were:

1.   Present and discuss MS experiences in approaches and results from estimating fleet capital value.

2.   Hold a training session on the application of the Perpetual Inventory Method

3.   Compare price per capacity unit applied by different MS and assumptions made on the PIM method (age schedules, depreciation schemes, depreciation rates, etc.)

4.   Propose best practices to be followed by MS in estimating capital value using PIM.

5.   Discuss methodological problems faced by MS with respect to estimating unpaid labour and financial position, and propose definitions and best practices for estimation.

6.   Propose clear definitions of those variables not clearly defined in the DCF.

EWG 11-18 discussed the outcomes of the workshops and suggested the following follow up actions.

Final report of the "capital WS" is included in Annex 3.

5.1   Calculation of capital value in accordance to PIM methodology

The EC study No. FISH/2005/03 was a significant development in the statistical measurement of a vitally important component of the fishing economic activity. In the fishing sector, as well as in any other economic activity, capital plays a fundamental role in the process of production and it is a significant component of wealth and source of income. It is vital that both stock and flow aspects (investments, depreciations) of capital are well measured in order to support the development and monitoring of economic policy, as well as economic analysis more generally. The main purposes of measuring capital are to provide a basis for the calculation of consumption of fixed capital as well as to establish balance sheets for the fishing sector and to analyze production and productivity.

Within these analytical purposes, the PIM method assures consistency in capital measures.

Having said that, STECF EWG 11-18 endorses the conclusion of the capital WS in considering that the EC study No. FISH/2005/03 gives the general framework for the estimation of capital value of European fishing fleets. Input variables (i.e. depreciation rates, service life time, price/CU) have to be calibrated/adjusted according to the specific needs of each country, to the peculiarities of national fleet segments and possibly taking into account empirical information, for example collected from Company accounts, Statistical surveys, Expert advice, European System of Integrated Economic Accounts (ESA).

The capital WS reviewed the estimation of the capital value and capital costs by MS and an exercise was carried out to compare the results. The comparative exercise showed a high level of non-homogeneity of presented values: some were gross values, others were depreciated values. Moreover, not all MS applied the PIM approach and, in some cases, the estimated values are based on very limited data. In order to overcome these problems, the WS capital:

- clarified the terms and the concepts behind the PIM method

- carried out a training session

- proposed best practices.

As far as the concepts and their definitions, some inconsistencies are given by the DCF itself (appendix VI). DCF requires the estimation of depreciation costs based on the PIM method but does not indicate which depreciation scheme (linear or degressive) should be applied and it does not indicate on which kind of capital value the depreciation costs should be calculated (historical or replacement). This leads to non-comparability of data because different depreciation schemes and different base values lead to substantially different estimates of depreciation costs.

In order to provide homogenous and therefore comparable results and considering the analytical purposes of capital measuring, EWG 11-18 endorses the following WS agreement:

- revise the DCF by changing the word "replacement" into "current". Replacement capital value means that the assets are valued at the prices of the current year. However, the qualifier "replacement" used in the current DCF raises questions about what exactly is being replaced. For this reason the word "current" should be preferred to "replacement";[1]

- revise the DCF by deleting the variable "Value of physical capital: depreciated historical value" from appendix VI. Depreciated historical capital value and depreciated replacement capital value are both required by the DCF. However, capital stocks valued at historical prices cannot be compared with national accounting or other economic statistics that are expressed at prices of a single period. Historical valuation implies that different vintages cannot be aggregated because each is on a different price basis; assets which have been acquired at different dates are valued at different prices so that when prices are rising/falling assets acquired more recently are implicitly given a higher/lower weight than those acquired in earlier periods;

- apply a degressive depreciation scheme, i.e. a decline at a constant rate. This function leads to relatively high depreciation when the assets are still relatively new, but the value of even very old assets never becomes zero;

- consider the replacement value as the proper basis for calculation of depreciation costs

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[1] In this report the word "replacement" is continued to be used to be consistent with current DCF (appendix VI EU Reg. 93/2010)

In addition, EWG 11-18 discussed the lack of financial (monetary) costs related to capital flows in the present DCF. At present, only "investments in physical capital" are required. Depreciation costs (calculated on actual financial statements like balance sheets) and interest costs could be necessary for a micro financial analysis of specific fishing fleets. Therefore, EWG 11-18 recommends investigating the inclusion of these parameters in the revision of the DCF.

The capital WS proposed best practices to be followed by MS in estimating capital value using PIM. In particular, EWG 11-18 endorses the hierarchical order suggested by the WS as far as the possible reference values to be used in the estimation of the price per capacity unit (PCU), that is the crucial point in applying the PIM method. EWG 11-18 suggests using values alternatively in the following order:

1. Price of new constructed vessels;

2. 2nd hand prices or insurance values of the current year;

3. Book value;

4. Scrapping value;

5. Other values.

EWG 11-18 endorses this approach and recommends that MS should use paragraph "5.2 Best practices" of the final report of the capital WS as guidelines for capital estimation. This paragraph discusses the following issues:

- Assumptions to be checked and adapted

- Specification of the composition of the fleet by age (vintage classes)

- Estimation of the price per capacity unit

- How to derive gross value from net value

- Step by step estimation of the PCU

In addition, in order to evaluate the quality of the estimations made by MS on capital value and capital costs, EWG 11-18 recommends to revise the guidelines for the compilation of Annual Reports, asking MS to report in detail how they have adjusted/calibrated the general PIM scheme to the specificity of their own fishing fleets and to explain the main assumptions (input variables, i.e. depreciation rates, service life time, price/CU, asset shares). Based on this information, the quality of the estimates can be evaluated and best practices might be derived.

The suggested revision of guidelines for AR are reported in annex 2.

EWG 11-18 considered that the capital WS has been very important in giving advice to MS on how to implement the PIM method and in clarifying pending issues. The group considered that the next step would be to compare prices per capacity units for European fishing fleets and to try to harmonize underlying assumptions on depreciation rates and life time of assets. EWG 11-18 recommends to include these issues in the 2012 PGECON (see paragraph 13).

During the capital WS it had been pointed out that investments are closely connected with depreciation, i.e. once an asset is fully depreciated, it will be replaced and thus an investment takes place. According to DCF legislation (2010/93/EU) depreciation has to be derived through the application of the PIM. It would then be consequent to derive investments in physical capital from PIM results, too. That way PIM would provide three different DCF variables/variable groups:

- value of physical capital,

- annual depreciation

- investments in physical capital.

However, it is a crucial prerequisite that all input parameters for the PIM are appropriately quantified. Anyway, the methodology to derive the value of yearly investments (required by DCF) from the PIM has not yet been tested. This issue should be further investigated once the PIM method will have been applied by all MS.

EWG 11-18 recognized that the method for the estimation of the capital value developed within the EC study No. FISH/2005/03 only allows to estimate the value of tangible assets. Evaluation of intangible assets is a difficult exercise. Price information on intangibles is scarce and estimations of their value when linked to tangibles are far from simple. Further research in valuation of intangible would be essential, as their value probably exceeds the value of tangible assets in many fisheries. In addition, estimation of intangible assets is required by the DCF and common methodologies should be defined. EWG 11-18 recommends to launch a study aimed at estimation of intangible assets in EU fisheries. Terms of reference for this study are reported in paragraph 13.

5.2   Other variables

The capital WS also addressed other issues as: unpaid labour, financial position, and definitions of those variables not clearly defined in the DCF.

As far as the imputed value of unpaid labour is concerned, EWG 11-18 agreed with the WS conclusion that the reference to SBS 13 32 0 in appendix VI of the DCF is misleading and should therefore be deleted. In fact, SBS 13 32 0 is equal to 13 31 0 (wages and salaries of crew) plus social security costs.

EWG 11-18 also agreed with the WS suggestion to rename the variable "Wages and salaries of crew" into "paid labour of the crew" and "Imputed value of unpaid labour" into "unpaid labour of the crew".

EWG 11-18 agreed on suggesting best practice for the estimation of the imputed value of the unpaid labour for all three economic modules of the DCF (fleet, processing and aquaculture). This best practice can be summarized by the following three steps:

1. estimation of paid and unpaid FTE;
2. definition of an average remuneration per paid FTE (e.g. average wage by fleet segment/company, national average wage, minimum national wage, etc…)
3. calculation of imputed value of unpaid labour =: unpaid FTE * (average remuneration per paid FTE).

EWG 11-18 recommends to apply this method as far as possible and to give details on the average wages used under point 2 in the Annual Report.

EWG 11-18 also reviewed SBS (structural business statistics) requirements on unpaid labour and suggests to include in the DCF an additional variable on the number of unpaid FTE, in order to be consistent with SBS.

EWG 11-18 recognized the conclusion of the WS report with respect to the financial position for the fleet. The group considered the footnote n. 13 to Appendix VI as misleading because it specifies that the financial position ratio can be regarded as "% debt in relation to total capital value (as defined above)", in this referring to the capital value estimated by the PIM method (note 9 of the same Annex). However, since financial position is a ratio, debt and assets should come from sources that are

consistent. PIM includes only tangible assets while the balance sheet - the most used source for getting the value of debts - could include also intangible assets in case they have been purchased. If debt comes from balance sheets and assets from PIM method, financial position would be inconsistent. Hence, EWG 11-18 recommends that the two item of the ratio (debts and total asset) should be drawn from the same source (if debts comes from balance sheets and refer to the overall fishing activity, the total assets should be derived from balance sheets as well).

EWG 11-18 also agreed with the capital WS suggestion with respect to debts, required by Appendix X and XII (aquaculture and processing sectors) of DCF. EWG 11-18 agreed in considering the balance sheets as the most reliable source of data for debts (MSs attending the capital WS that derived the value of debts from questionnaires experienced a very poor quality of responses). However EWG 11-18 partially amended the definition of debts proposed by the WS. In particular EWG 11-18 suggests to use the words short and long term debts (as defined in article, 9, item C of the IV Council Directive 78/660/EEC) instead of short and long term liabilities (which include also provisions and other items).

EWG 11-18 also suggests, for sake of clarification for MS, that in the future revision of the DCF it would be advisable that Appendix VI would include a note for debts referring to the example of debts made in article, 9, item C of the IV Council Directive 78/660/EEC.

EWG 11-18 amended the definition proposed by the capital WS concerning financial costs, net and extraordinary costs, net because the definition provided by the capital WS only refers to "gross" costs, not taking into account financial and extraordinary income needed to estimate net figures. Concerning the estimation, taking into account that most MS use balance sheets to derive these type of costs, EWG 11-18 agreed in referring to the IV Council Directive 78/660/EEC (on the annual accounts of companies) and proposes the following changes:

- Net financial costs should be accounted as the difference between financial income and financial costs, as defined in art. 23, item 9-11 for income and item 13 for costs of the IV Council Directive 78/660/EEC (further comments are given in annex 1, preliminary glossary).

- Net extraordinary costs should be accounted as the difference between extraordinary income and extraordinary charges (as suggested in the report of SGECA 10-04) and defined in art. 23, item 16 (income) and 17 (costs), of the IV Council Directive 78/660/EEC. "Extraordinary income" and "Extraordinary charges" are the income and costs that arise otherwise than in the course of the company's ordinary activities (Article 29 of t IV Council Directive).

6 Review of the main conclusions provided by the DCF metier workshop on "allocation of Economic Data on disaggregated level". Recommendation of appropriate methodologies to disaggregate economic parameters at the level of métiers and sub-areas

The DCF workshop on "allocation of economic data on disaggregated level" (referred to as "the allocation WS" in this report) was held in Hamburg (4th- 8th, July 2011). It was attended by 7 national experts representing 5 Member States.

The terms of reference (ToRs) of the Workshop, defined by SGECA 10-03 and endorsed by STECF in its 2010 winter plenary, were:

1. Identify needs of applications, e.g. Long Term Management Plans, Regional Analyses for funding purposes and Ecosystem Approach to Fisheries Management.

2.   Identify methods to allocate earnings and costs (operating costs, labour costs, capital costs) at different aggregation levels. Consider the identification of cost drivers. Transversal variables could serve for this purpose. Consider vessels that may be active in more than one fishing metiér during the same year.

3.   Propose a method to split economic variables among different areas when appropriate.

4.   Assess data quality requirements of allocation methods with regard to particular characteristics of DCF data sources at each MS (e.g. logbooks). EWG 11-18 discussed the outcomes of the workshops and suggested the following follow up actions.

Final report of the "allocation WS" is included in Annex 4.

EWG 11-18 considered that TORs addressed issues related to the use of data as collected under the DCF rather than issues related to the collection and estimation of original DCF data. The allocation WS was not intended to address potential needs for further amendments of the DCF. Any conclusions on disaggregation provided in the report refer to methodological issues and potential further analyses or procedures, but not to an alteration of the economic data collection under the DCF.

At the moment it is not clear who would do the disaggregation and how disaggregated data are requested. There has been one data call on the metier level for the Mediterranean which also contained cost data. Due to the lack of standardised methods of disaggregation this task could not be expected to be fulfilled.

The general purpose of the allocation workshop was to mutually gain insight in common practice as performed in different MS, exchange ideas and potentially derive some best practice. It was beyond the scope of a WS to develop guidelines or common rules. The WS was attended by only 7 participants, representing France, Germany, Lithuania, The Netherlands and Poland. So it could not be considered as covering all EU regions (there were no representatives from Mediterranean, except France).

The allocation WS discussed the terms of reference and agreed that quality issues (ToR 4) were a task beyond the scope of the WS, taking into account the available expertise and temporal resources and the lack of further specifications. In general, quality issues can only be evaluated against specific targets, which were not available. Moreover, the analyses performed during the WS did not allow doing any quantitative conclusions on data quality. The data provided have to be regarded as reliable, and scattering or poor correlation between data does not necessarily allow raising doubts about data quality.

The needs for disaggregation were analysed from the perspective of the MS represented at the WS. Long Term Management Plans, the Marine Strategy Framework Directive, the Ecosystem Approach, the AER regional analysis and Marine Spatial Planning were stated as most common fields for which disaggregated data are required.

Table 1 - Segmentation/(dis-)aggregation requirements

application	variables	temporal resolution	spatial resolution	activity resolution
Long Term Management Plans (impact assessment, evaluation)	effort, landings, revenue, all variable cost data	total annual effort in related fishery	ICES (sub-) division	fishery on target species
Marine Strategy Framework Directive	effort, landings, revenue, all variable cost data	annually	Variable (e.g.ICES division)	DCF fleet segment, gear type
Ecosystem Approach to Fisheries Management	effort, landings, revenue, all variable cost data	annually	ecosystem (e.g. ICES rectangle)	variable
Regional analysis (AER)	effort, landings, revenue, all variable cost data	annually	region	DCF fleet segment
Marine Spatial Planning (e.g. wind farms, pipelines)	effort, landings, revenue, all variable cost data	annually (monthly)	several	fishery on target species/using specific gear

EWG 11-18 wanted to point out that even though the resolution level of cost variables to be collected under the DCF is not sufficient for several applications, the DCF should not be altered with respect to the resolution requirements as it is practically impossible to get comprehensive cost data for higher resolution scales. Rather methods for disaggregation should be further developed.

The focus of the WS was on variable costs, as only those ones can be assigned to specific activities, i.e. direct costing. The exclusion of fixed cost leads to the determination of the Total Contribution Margin. If necessary, fixed costs can be disaggregated with respect to the specific needs of the analysis. However, this part was regarded not to be an issue of the WS.

Data for the WS had been requested in standardized templates prior to the meeting, thus allowing the application of standard routines. Datasets from the aforementioned countries were available for evaluation during the WS.

The general approach of disaggregation of variable cost data was to use correlated data which are available at higher resolution. One major task during the WS was to compare different correlations between variable cost data at annual resolution and transversal variables (effort, landings) which are available at higher resolution, also taking in to account capacity data. Main "cost drivers", which could be used to disaggregate costs data have been identified and provided in the WS report, they also have been evaluated with respect to their influence and correlation with cost items. Potential correlations are compiled in the following table. In addition to transversal variables, the list contains also capacity variables.

Table 2 - Expected correlation between effort/capacity and cost data as basis for disaggregation

DCF Variable	"Cost driver"
Wages and salaries of crew	Value of landings, days at sea, crew number
Imputed value of unpaid labour	Not identified
Energy costs	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW), fuel price
Energy consumption	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW)
Repair and maintenance costs	vessel size (GT, kW), age, days at sea, fishing days, area of operation, fleet segment
Variable costs (other)	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW), volume of landings
Non-variable costs	Vessel size (GT, kW), age,

Based on the data available during the WS, it has been experienced that Crew costs are sufficiently closely correlated to earnings from landings and fuel costs are sufficiently closely correlated to vessel size and effort (days at sea * kW). No satisfactory correlation has been found for repair and maintenance costs as well as for "other variable costs". It has to be taken into account that these findings are empirical observations which have not been further scrutinised. In order to be generalised, further comprehensive analyses have to be performed using a broader basis of data and applying more advanced techniques, e.g. linear models. The findings will have to be validated. It might turn out that correlations may vary by area and by activity. However, the findings of the allocation WS might provide a helpful starting point.

It turned out that in several cases the data were not as closely correlated as expected. Yet, for certain fleets or fleet segments the correlation was quite reasonable. It has to be pointed out that scattering of data does not mean that they are unreliable. Individual vessel characteristics can vary broadly, thus resulting in a wide range of data. However, as individual vessel data are usually raised to the according entity (e.g. fleet segment), some problems may be encountered when fleet segment data are disaggregated towards smaller units.

So far, the disaggregation of cost data on the basis of correlated transversal and capacity data is based upon the assumption that all disaggregation levels have the same cost structure. This is not likely to be realistic in all cases. In particular, when a vessel performs both active and passive fishing techniques, cost structures are going to be different. The WS report contains some illustration of this issue in tables 5 and 6 (Estimated costs as share of revenue at gear level), where exemplary high resolution data from some vessels have been analysed.

Using different costs drivers (transversal and capacity variables) for different cost variables in the disaggregation process might automatically affect the cost structure. It has to be checked whether this will represent the real cost structure of certain activities (e.g. metiers).

The use of VMS data to further disaggregate transversal data (effort and landings) has also been discussed during the WS. A presentation was given showing the implementation of VMS data in marine spatial planning e.g. for the analysis of earnings from designated wind farm sites.

During the evaluation of the results, EWG 11-18 concluded that, taking in to account the representativeness of MS and data, the WS managed to address all ToRs and provided useful information and insight into the topic. The WS can be regarded only as an initial step to develop more specific methods.

It was beyond the scope of the WS on allocation of economic data at disaggregated level to validate specific methodologies of disaggregation. This task can only be addressed by a comprehensive study. However, guidelines as starting point for preliminary approaches as well as for further analyses can be derived by from the outcome of the allocation WS.

Future activities might address:

- the identification of homogeneous fleet units (not necessarily DCF fleet segments), also at an international or regional perspective. DCF segmentation might not lead to perfectly homogeneous units for particular analyses. Therefore it might be helpful to apply a different type of grouping vessels in order to get more homogeneous units and therefore closer correlations.

- approaches to determine cost structures for certain activities,

- estimation for fleet segments or larger units from the samples,

- applicability of e.g. linear models to correlate multiple variables.

It might also be conducive to exemplarily investigate variable cost data at very high resolution (e.g. for single trips) for single vessels to validate the calculated cost structures. Particularly wages and fuel can often be determined per trip, while repair and maintenance costs usually do not accrue as frequently as would be necessary to assign them to single trips. The study "Energy savings in fisheries " (ESIF) FISH/2006/17) might be helpful in that context. However, it has to be stressed that these considerations refer to an investigative approach, but not to an alteration of the DCF.

EWG 11-18 recommends to launch a study to suggest and validate specific methodologies of disaggregation of economic data. Terms of reference for this study are reported in paragraph 13.

7 Propose estimation procedure for projections of the economic position of the fisheries using more recent available data and extra information

EWG 11-18 reviewed procedures as provided in SGMOS 10-06a and supported by EWG 11-03.

The principles of projection as recommended in the aforementioned documents are as follows:

All estimations are carried on a segment level basis.

Crew wages (CW) were estimated as an average proportion of the value of landing (VL) during the three previous years:

$$CW_t = \frac{\sum_{t-1}^{t-3} CW}{\sum_{t-1}^{t-3} VL} \times VL_t$$

Non-variable costs (NVC) were estimated using the change in capacity i.e. number of vessels (N):

$$NVC_t = \frac{NVC_{t-1}}{N_{t-1}} \times N_t$$

Variable costs (VC) are projected using changes in effort, i.e. Days at Sea (DAS):

$$VC_t = \frac{VC_{t-1}}{DAS_{t-1}} \times DAS_t$$

The same method applied on variable costs including repair and maintenance.

Fuel costs (FC) are projected using changes in effort (DAS) and change in average fuel price (P):

$$FC_t = \frac{FC_{t-1}}{DAS_{t-1}} \times DAS_t \times \frac{P_t}{P_{t-1}}$$

EWG 11-03 further discussed introducing price changes in the formulas (except for fuel prices where it is already included), although it was decided to leave this out at the time. This may be taken in to consideration in the future.

The reasonable assumption behind this approach is that in short period the relation between forecast variables (costs) and explicative variables (landings, prices, capacity, activity) remains constant.

EWG 11-18 considered that these procedures have to be regarded as "state of the art" as no better method is available at the moment. However, EWG 11-18 noted that the underlying relationship between the cost variable and the auxiliary variables have been largely tested and validated also in other contexts (WS on disaggregation of economic data) and are based on common experience and economic theory.

For a long term forecast, EWG 11-18 considered that other variables (e.g. level of stocks) or external shocks might affect costs. As a consequence, the introduction of more general models (e.g. bio-economic models) and flexible methods (multiple regression, non-linear parametric regressions) to obtain predictions seem to be more appropriate.

8   Review of the main conclusions provided by the DCF workshop on "statistical issues related to the collection of economic data within the DCF" and definitions and calculations of statistical indicators for quality assessment

The DCF workshop on "statistical issues related to the collection of economic data within the DCF" (referred to as "the statistical WS" in this report) was held in Lisbon (26-30, September 2011).

The terms of reference (ToRs) of the Workshop, defined by SGECA 10-03 and endorsed by STECF in its 2010 winter plenary, were:

1. Present national methods to define sample size, accuracy indicators and estimate results.

2. Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data.

3. Evaluate methods, advantages and disadvantages of collecting data using non-probability sampling surveys. Consider the results of the proposed Study to Standardize Quality Reporting and Propose Methods in the case of Non-Probability Sample Survey (NPSS).

4. Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-response.

5. Prepare Guidelines to MS for best practices in statistical analysis and on how to define and select the appropriate sample sizes to be proposed in National Programmes.

The report of the statistical WS was not available during EWG 11-18. However, results of the WS were presented by the WS chairman and are reported in annex 5. The general purpose of the statistical workshop was to exchange common practice as performed in different MS, identify related problems and derive some best practice.

EWG 11-18 considered that the statistical WS addressed the TORs and provided useful reflections to improve the collection of economic data. EWG 11-18 also considered that TOR 3 was only partially addressed because no Study to Standardize Quality Reporting and Propose Methods in the case of Non-Probability Sample Survey has been launched.

On the basis of the results of the statistical WS and following a deep thorough discussion, EWG 11-18 suggests the following:

- In case of Non Probability Sample Surveys, MS has to:

  o explain the reason for not using probability sampling

  o describe the models used to estimate variables for the total population and to assess the quality of estimates

  o calculate CV not only on the basis of estimated values but also on observed values

- Further work is needed on quality indicators for NPSS and high non response rates. EWG 11-18 recalled SGECA 09-02 recommendation to have a specific study on NPSS (quality indicators, estimation techniques, etc.) and on non-response.

- Next step for quality control shall be to assess the values of the accuracy indicators, which have to be presented in the next AR.

- Quality is a subjective concept. It depends on the end user's needs. Therefore, before concrete targets are defined application needs should be taken into consideration.

- Most effort should be allocated to the economically most important segments. This may require different sampling strategies and different precision targets for different segments.

EWG 11-18 recommends to review the table with "Definition and presentation of accuracy indicators to be presented by MS in the AR" elaborated by SGECA 10-03, by including an additional accuracy indicator, related to the coverage rate of the value of production as a supplement to the response rate. The revised table is reported below (table 3). EWG 11-18 recommends to revise guidelines for AR accordingly.

Table 3 - Definition and presentation of accuracy indicators to be presented by MS in the AR

Type of data collection	Accuracy indicators	Definition and *presentation*
A: Census	Response rate	achieved no.[1]/ frame population no. *Presented as %*
	Coverage rate	total value of production of the respondent units/total value of production of the frame population *<u>Presented as %</u>*
	Coefficient of Variation (CV) only if response rate <70% [2]	$cv(\hat{Y}) = \dfrac{\hat{\sigma}(\hat{Y})}{\hat{Y}}$ where: $\hat{\sigma}(\hat{Y})$ is the estimate standard deviation of $\hat{Y}$ $\hat{Y}$ is the estimated total value per fleet segment of the variable e.g. total energy costs [3] *Presented as % absolute term (0.2 rather than 20%)*
B: Probability Sample survey C: Non-Probability Sample survey	Achieved sampling rate	achieved sample no.[4]/frame population no. *Presented as %*
	Coverage rate	total value of production of the respondent units/total value of production of the frame population *Presented as %*
	Response rate	achieved sample no.(4)/ planned sample no. [5] *Presented as %*
	Coefficient of Variation (CV)	$cv(\hat{Y}) = \dfrac{\hat{\sigma}(\hat{Y})}{\hat{Y}}$ where: $\hat{\sigma}(\hat{Y})$ is the estimated standard deviation of $\hat{Y}$ $\hat{Y}$ is the estimate of the total [3] *Presented as % (20%rather than 0.2)*

(1) **Achieved no.** is the number of respondents who supplied data in response to the census
(2) **CV** is also required for census which achieves a low response rate (<70%) as this must be treated as if it were a Non-Probability Sample survey
(3) The **estimated total** is the final estimate for each variable and each fleet segment, according to appendix VI of DCF. E.g. estimated total energy costs, estimated total crew costs, per fleet segment
(4) **Achieved sample no.** is the number of respondents that supply data (and not, for instance, the number of questionnaires sent out, or number of companies contacted)

(5) **Planned sample no.** is the number of units to be contacted for the survey (even though you may not expect all of them to respond and supply data)

9   Glossary of the economic terms used in the DCF

The compilation of the economic terms used in the DCF has been requested by different working groups and RCMs. EWG 11-18 considered that the glossary is an essential tool to improve harmonization of economic data collection among MS. It would also improve the data collection procedures as clear definitions of variables and a common understanding is the starting point of any survey.

Definitions of the economic terms used in the DCF are reported in different reports and sometimes they are not consistent. The compilation of an "official" glossary would therefore constitute a reference and would avoid never ending discussions in expert working groups.

EWG 11-18 discussed that the glossary should be addressed primarily to the data collectors and to the users of the results.

EWG 11-18 suggests the following principles for the compilation of the glossary:

1. Definitions from SBS (Structural Business Statistics, EU Reg. 250/2009[2]) are to be considered as the "primary" definitions. If no definition is found in SBS, then definitions from a few other statistical sources can be used, i.e. ESA (European System of Accounts). It is important to use as few sources as possible to be sure that the definitions are consistent. This approach will give the possibility to compare the results between sectors.

2. The glossary shall include the variables from DCF, capital concepts and statistical concepts.

3. Concerning the statistical terms, STECF WGs on review of economic data (SGECA 09-02, SGECA 10-03, EWG 11-18) and guidelines for AR and NP should be used as starting background documents

4. Glossary should include for each variable a text for the variable, measure unit, the SBS number (or the number from other source) and an explanatory text.

5. The glossary should not be included in tables.

6. A second level of glossary can give separate explanations for the sectors more needed for the specific requirements of the data collection.

7. The glossary shall start with a preface explaining the principles for the definitions in the DCF and the glossary, i.e. use of definitions from other statistical sources with SBS as primary to be sure the definitions are consistent.

8. The glossary should be published on the DCF web site.

9. It should be possible to update the glossary but the responsibility should be given to an appointed group or steering committee.

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[2] COMMISSION REGULATION (EC) No 250/2009 of 11 March 2009 implementing Regulation (EC) No 295/2008 of the European Parliament and of the Council as regards the definitions of characteristics, the technical format for the transmission of data, the double reporting requirements for NACE Rev.1.1 and NACE Rev.2 and derogations to be granted for structural business statistics

EWG 11-18 prepared just a preliminary glossary because the compilation of the final glossary will require much more time than available during the meeting and also because the group considered more useful to discuss the general principles. EWG 11-18 recommends that, once these principles have been defined, the compilation of the final glossary should be finalized by a very small group or even by only one person that should go through SBS, other sources used (ESA), the capital concepts and the statistical concepts. The final glossary should then be presented to STECF. It is advisable that this process will be finalized before the revision of the DCF.

Annex 1 includes the preliminary glossary as discussed by EWG 11-18. Three different tables have been prepared for each of the economic modules of the DCF (appendix VI for the fleet, appendix X for the aquaculture and appendix XII for the processing). The subgroup decided to go through the tables from the three annexes to pinpoint problems or missing text. The subgroup also decided to add the proposed glossary for capital concepts but not to discuss it further due to lack of time.

The glossary prepared by EWG 11-18 is a very preliminary step that should be further reviewed. Specific comments from experts attending EWG 11-18 are included. Concerning subsidies, the group considered that different types of subsidies exist and the DCF does not clearly indicate which subsidies should be included and which should be excluded. EWG 11-18 suggests to first of all provide exhaustive definitions of different types of subsidies (starting with ESA definitions and FADN definitions). These definitions should be included in the glossary and will be used to clarify which types of subsidies have to be included in the DCF.

EWG 11-18 considered that the glossary should be available for the revision of the DCF. In this context, the group proposes that only one annex with general definition for all three sectors (fleet, aquaculture, processing) should be included in the DCF. This will ensure that definitions across the three modules are the same for common variables.

10 Review of the current guidelines for AR with particular respect to clustering in order to encourage Member States to adopt a common and consistent approach

EWG 11-18 reviewed the guidelines for the Annual Report (text and tales) for all three economic modules of the DCF (fleet, aquaculture and processing). Suggested guidelines are reported in annex 2. EWG 11-18 also compiled the revised tables in the excel format that will send to DGMARE.

The latest AR guidelines have been compiled in 2009. Since then, several improvements have been proposed by STECF to better report the data collection procedures and to better assess the quality of data. A revision of the guidelines is therefore considered useful in order to include these improvements into the guidelines.

In reviewing the guidelines, EWG 11-18 took into account previous STECF working groups which already suggested some kind of revisions (SGECA 10-03, SGECA 10-04, SGRN 10-02, EWG 11-08).

Clustering issue has been also discussed by EWG 11-18 once again. According to the DCF "In cases where a fleet segment has less than 10 vessels, clustering may be necessary in order to design the sampling plan and to report economic variables". It was recalled, that MS should avoid clustering, especially for important segments, there exists an evident scientific need to have economic data for these segments. In this context it has to be born in mind that the DCF threshold of "10 vessels" is somewhat arbitrary and should be reconsidered for the DCF revision: confidentiality can be provided even with lower numbers (in some cases just more than 2 are required). Moreover, if the vast majority

of vessels in a fleet segment is owned by one company, clustering for confidentiality may be necessary even if it contains more than 10 vessels.

However, when segments need to be clustered to ensure confidentiality when reporting economic data, or for statistical reasons, every effort should be made by MS to ensure that clustering is consistent across all variables in a particular year and within time series. For example, if cost data for a particular group of segments have been clustered, then the same approach should be applied for all the other variables reported for that clustered segment and the time series should be reviewed. Capacity data are publicly accessible and therefore not subject to confidentiality issues. They can be published at the fleet segment level, even if the segment contains less than 10 vessels.

During the WG current recommendations for clustering have been discussed. It was agreed to use the same text as in the Guidelines for NP proposals in the Guidelines for AR. In addition, EWG 11-18 recommends MS to keep the clustering scheme consistent over time, and if not to explain the reason in the AR..

The data quality section in the Module IV (Evaluation of the economic situation of the aquaculture and processing industry) has been reviewed in accordance with Module III (Economic data for fleet).

Concerning transversal variables, according to previous SGRN meetings, EWG 11-18 recommends not to address DCF data quality requirements for data which is mandatory to be collected under a different EU legislation. This applies in particular to all capacity data, which are regulated under Commission Regulations (EC) No 2090/98 and No 26/2004, and to the data that are derived from logbooks and sales notes, which are regulated under Commission Regulations (EEC) No 2807/83 and (EC) No 500/2001, Council Regulation (EEC) No 2847/93, and Council Regulation (EC) No 1224/2009.

EWG 11-18 discussed recent economic data calls and concluded that the system of naming clustered segments by including the gear codes and length classes of all segments concerned does not improve clarity, as originally intended, but results in further confusion. Therefore, EWG 11-18 suggests to applying the guidelines for NP for the nomenclature of clustered segments also for of data calls (Clusters should be named after the "Important segments with distinct characteristics" as proposed in the methodology for clustering). It was also agreed, that during the data call MS should be asked for clustering information in standard format (e.g. III.B.2 for clustered segments), including their transversal data. Clustered segments must be marked with an asterisk (see footnote in III.B.2). The clustering scheme of each MS should be provided in an annex of AER.

11 Propose common definition on "metadata" related to the primary socio-economic data collected under national programmes and propose guidelines for storage and provision of such metadata (as required by EU Reg. 199/08, articles 13 and 16)

EWG 11-18 discussed the concept of "metadata" and went through its definition.

EUROSTAT defines metadata as information that is needed to be able to use and interpret statistics. Metadata describe data by giving definitions of populations, objects, variables, the methodology and quality. A distinction is generally made between structural and reference metadata.

Structural metadata are used to identify, formally describe or retrieve statistical data, such as dimension names, variable names, dictionaries, dataset technical descriptions, dataset locations, keywords for finding data etc. In this case the correct description would be "data about the containers of data".

Reference metadata (sometimes called explanatory or descriptive metadata) describe the contents and the quality of the statistical data from a semantic point of view. They include explanatory texts on the context of the statistical data, methodologies for data collection and data aggregation as well as quality and dissemination characteristics. Descriptive metadata, on the other hand, is about individual instances of application data, the data content. In this case, a useful description (resulting in a disambiguating neologism) would be "data about data contents" or "content about content".

EWG 11-18 considers that the term "metadata" is both complex and ambiguous. The group also considers that several metadata are already made available to the Commission by MS. In fact metadata are included in National Programs, as well as in Annual Reports where methodologies, questionnaires, definitions, sampling plans, accuracy indicators are reported. All these information can be considered as "metadata". In addition, aggregated data provided through the official data calls can be as well regarded as metadata.

A list of all possible metadata with a reference of the official documents where they can be found is not feasible because metadata differ from one MS to another.

EWG 11-18 discussed the reason of having a reference to metadata into the regulation. The storage in databases of metadata related to the primary socio-economic data are is required to allow the Commission the possibility to verify the socio-economic data collected by MS (EU Reg. 199/08, articles 13 and 16). EWG 11-18 considers that for the purpose of verification, other more appropriate method should be applied (as for instance an audit visit to MS) and suggests to delete this reference to metadata in the next DCF.

12   Future needs of economic data in the DCF. Discussion on topics to be included and on improvements in methodologies such as the application of statistical estimation procedures for some fleet segments

EWG 11-18 made an exploratory analysis to investigate possible new topics to be included in the future DCF. Some additional variables have been suggested under TOR 1 (financial depreciation and interest costs, number of unpaid FTE). Other important revisions could come from the compilation of the glossary (see paragraph 9) that will improve some definitions of the economic DCF variables.

EWG 11-18 also considered that not only inclusion of new topics should be discussed but also exclusions of some of them. EWG 11-18 suggested to delete the requirement of the historical depreciated capital value (see paragraph 5). Concerning the processing sector, the group considered useful to harmonize the actual data requirements coming from Eurostat legislation and the DCF. The group considers that any duplication of collection of data should be avoided. Eurostat data should be used and processed as long as they fulfill DCF requirements. Only missing variables or data for company segments not represented by Eurostat data should be additionally collected under the DCF.

The Commission also informed the group that a study is going to be funded to assess the utility and the possible methodological problems related to the inclusion in the DCF of some additional social indicators.

EWG 11-18 also discussed the issue of integration of economic and biological data collection that is one of the core issue of the present DCF. This integration is in some way not fully operative. EWG 11-18 considers useful to carry some reflections to investigate the reason and to suggest improvements for the future DCF.

Another aspect of the DCF that should be discussed and possibly revised is the procedure used by the Commission to ask for data needed for the scientific advice and for the compilation of the Annual Economic Report. The group discussed that a procedure based on definition of deadlines for data submissions could be more appropriate than the "data calls" procedure.

Finally, EWG 11-18 discussed the allocations of economists within the DCF. The group was informed of the proposal from the 8th Liaison meeting to establish a Planning Group for Economic Issues (PGECON).

The LM, starting from the consideration of the poor participations of economists in RCMs, considered that, according to the DCF, the need of regional coordination with regard to economic data is limited to the definition of homogeneous clustering methodology and to the proposals for "adjustments" of some effort variables. But LM considered that, at European level, much more work would be needed to compare methodologies, suggest best practices, assess data quality and propose studies and workshops. However, this is not necessarily specific for single RCM regions.

Therefore, LM recommended establishing a planning group (PGECON) to discuss methodological and coordination issues related to the economic modules of the DCF at European level (fleet economic data, aquaculture, processing sector). The report of the PGECON should be reviewed by LM and presented at the EU meeting of national correspondents, according to the following scheme:
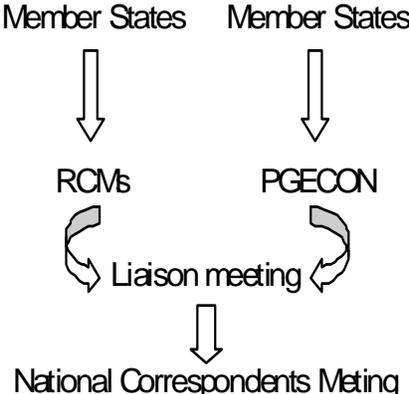
LM recommended that TORs for the first PGECON (first quarter of 2012) should to be drafted by the EWG 11-18. LM recommended that the establishment of the PGECON in 2012 should to be considered as a pilot approach. LM will evaluate the results of this approach and will propose a routine framework to be established in the revised DCF.

EWG 11-18 discussed this proposal and agreed with the establishment of PGECON. EWG 11-18 also proposed TORs for PGECON that are reported under paragraph 13.1.

13   Definition of TORs, content and objectives of PGECON and others DCF workshops and studies for 2012 on economic data

13.1   Planning group on economic data (PGECON)

General Terms of reference

- Discuss methodological issues regarding the collection of economic variables and suggest best practices

- Discuss the use of transversal and economic variables

- Discuss coordination issues related to the economic modules of the DCF at European level (fleet economic data, aquaculture, processing sector)

- Identify tasks that need a regional coordination and propose appropriate TORs for RCMs

- Propose studies and workshops needed to improve coordination and methodological issues of data collection

- Define guidelines for an European Data base of economic data (fleet, aquaculture and processing)

Additional specific Terms of reference for the first meeting (2012)

- Compare price per capacity unit, depreciation rates and other assumptions applied by MS in estimating capital value and capital costs

- Look into the consistency of depreciation as estimated through PIM and the collected data on investments carried out by the fleet segments

- Assess values of accuracy indicators and suggest specific precision targets for different fleet segments and different variables

- Presentation of questionnaires used for the collection of economic data (fleet, aquaculture and processing). Analysis of the questionnaires in order to improve them. (MS will be required to provide an English version of the questionnaire before the workshop)

- Propose TORs for studies and workshops

- Discuss the development of an European Data base of economic data (fleet, aquaculture and processing). Criteria and roadmap.

13.2   WS on Aquaculture data collection

EWG 11-14 on "Economic Performance Of The Aquaculture Sector" prepared a first report on aquaculture sector (referring period 2008-2009). The working groups identified issues that need to be better addressed (the calculation of FTE in aquaculture sector, the segmentation according number of employees and/or total saleable production or total volume of production, the adoption of conversion ratio of number of fingerling when in the same segment are included both hatchery/nursery that on-growing activities).

EWG 11-18 was asked to define TORs for this workshop. Possible TORs could be:

- Present and discuss MS experiences in DCF for aquaculture sector: main critical aspects.

- Adoption, if possible, the methodology for estimation of unpaid labour according peculiarity of main European segments.

- Propose best practices to be followed by MS in estimating FTE.

- Integration of the Glossary

- Propose clear definitions of those variables not clearly defined in the DCF.

However, EWG 11-18 was not able to finalize the TORs as the report of EWG 11-14 was not yet available during the meeting. EWG 11-18 therefore suggests the TORs to be finalized by STECF plenary (November 2011).

13.3 Study to propose methodologies for estimation of intangible assets in EU fisheries.

Background

Implementation of the CFP in the various MS has led to an introduction of various types of rights (licenses, ITQs, etc.). Some of these rights are freely tradable; others can be only transferred together with the vessel to which they are attached. Still other rights are officially not transferable, but in reality they too can be transferred. In many countries the value of these intangible assets approaches or even exceeds the value of the tangible assets and it plays an important role in operational decision of fishing companies.

In the near future, it has also to be considered that the proposed Basic Regulation for reform of the Common Fishery Policy (COM(2011),425) introduces a system of transferable fishing concessions that should constitute a major driver for fleet capacity adjustment.

However, until present, capital valuation in fisheries focused primarily on the vessel and its equipment. Methodology for estimation of the capital value developed within the EC study No. FISH/2005/03 allows to estimate the value of tangible assets. In case that intangibles are part of the asset value, the suggested method requires to separate them from the tangibles so that the determined value per capacity unit refers exclusively to physical assets.

However, attaching value to the intangible assets faces several conceptual as well as practical problems:

- In theory value of total assets could be determined as net present value of the future stream of benefits. This value than should be split into tangible and intangible assets. One unique approach to this division does not exist.

- When intangibles are freely tradable, observation of their prices in the market is often difficult because the number of transactions is small and they are not recorded.

- When the intangibles are attached to vessel, direct observation of the price is impossible. The value has to be estimated.

- In many cases, the fishing companies have not yet acquired any intangibles, but simply hold the rights which they have received free of charge from the government, when they were introduced. In that case it is not clear if these rights should be valued as an asset, increasing substantially the total asset value of the company, or not.

- It is also not clear if the rights should be depreciated. Are they permanent or temporary? On what value should the depreciation be imputed and at which rate?

- The value of the fishing rights may fluctuate strongly with the economic performance of the fisheries concerned. This would lead to strong fluctuation of the asset value, depreciation costs and possibly profitability of capital.

For all the above considerations, evaluation of intangible assets is a difficult exercise. The EC study No. FISH/2005/03 proposed to apply the approach established by FADN, i.e. tradable intangibles should be valued at current market price (or a multi year average), independently of the question whether they have or have not been acquired or whether they are or are not linked to specific tangible (e.g. vessel). However, price information on intangibles is scarce and estimations of their value when linked to tangibles are far from simple. Further research n valuation of intangible will be essential, as their value probably exceeds the value of tangible assets in many fisheries. In addition, estimation of intangible assets is required by the DCF and common methodologies should be defined.

Terms of References of the study

- define a methodology for estimation of the value of different types of rights (license, quota, transferable and non-transferable, etc…)
- define a methodology to separate the intangible part of capital (quota, license, etc…) from the overall capital value when this value is not directly observable;
- investigate on factors determining changes in values of intangible assets.
- ensure a coverage as large as possible so to address all the possible type of fishing rights present at EU level.

Duration of the study: 10 months

13.4   Study to disaggregate economic variables at metier and/or geographical areas

Terms of References of the study

- Determination of cost structures within disaggregated units (e.g. metiers): Thus far, cost structures of operations of the same vessel in different fisheries (e.g. metiers) are regarded constant. This is not necessarily realistic, particularly when both passive and active gear operations are compared. The study should provide a method to break down cost structures with respect to the fishing activity performed. The method should as much as possible operate with data that are already available.

- Procedures to derive proper correlations of variable cost data with transversal and capacity data to be applied for specific disaggregation tasks (having specific requirements of spatial, temporal or activity-related resolution): The outcome of this point should be a tool, requiring only standard software, which allows for modelling correlations, including an indication of the reliability of the result. The end user should then be able to calculate correlations using data which is by default available (e.g. through the DCF or the logbook regulation). The end user

should also be able to assess the robustness of the estimated correlation. The method should be applicable to all DCF segments, allowing the end user to disaggregate variable cost data.

- Validation procedure: A method should be provided to enable MS to validate the results of the disaggregation procedure. Specifically for the purpose of validation more disaggregated input might be required, e.g. daily cost data.

Duration of the study: 12 months

13.5   Propose a TOR to address the issue of the methods used by MS to deal with < 10 m transversal variables

EWG 11-18 was asked in one of its TORs to " investigate the methods used by MS to deal with <10m transversal variables and propose a corresponding ToR".

However, EWG 11-18 considered that this TOR was not in line with the general aim of the meeting. In addition, EWG 11-18 was informed that the 8th LM endorsed the proposal for the following DCF WS: "Workshop on transversal data collection (i.e. common understanding) and statistical methodologies to estimate/re-evaluate them, with a special focus on the small scale fisheries". TORs for this meeting are already available.

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15 LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on: https://stecf.jrc.ec.europa.eu/meetings.

List of background documents:

1. EWG-11-18 – Doc 1 - Declarations of invited and JRC experts.
2. SGECA 09-02 – Doc 2 - Working Group on the quality aspects of the collection of economic data - methods of calculation of the indicators and sampling strategies
3. SGECA 10-03 – Doc 3 - Working Group on review of economic data collected in relation to the DCF, harmonisation of sampling strategies

General comment:. Comments do not express the opinion of EWG 11-18 but they reflects personal opinions by individual experts. Due to lack of time the following proposals and problems have not been discussed in the meeting

Table 1. Definition of economic variables for the fleet, appendix VI Council Regulation (EC) No 93/2010

Variable group	Variables (as listed in Appendix VI)	Definition and guideline (document)	Definition Structural Business Statistics (SBS) COMMISSION REGULATION (EC) No 250/2009 amending Commission Regulation (EC) No 2700/98	Comments from the group on Appendix VI
Income	Gross value of landings	SBS (12 11 0) excl. para 4	Value of landings by specie.	
	Income from leasing out quota or other fishing rights		Income coming from leasing out quota, or permit to use certain fishing area or similar right to harvest fish.	Appendix VI is misleading where it refers to SBS 12 11 0 for income from leasing, direct subsidies and other income. Indeed these income from leasing and other income are not part of turnover (12 11 0) but part of the value of production (SBS2 12 12 0).
	Direct subsidies		Operating subsidies received from public authorities or the institutions of the European Union which are excluded from turnover. Includes compensations for stopping fishing (temporary cessation), refunds of fuel duty or similar lump sum compensation payments. Excludes social benefits payments, indirect subsidies, e.g. reduced duty on inputs such as fuel, investment subsidies, premiums for permanent cessation of the vessels.	Appendix VI is misleading where it refers to SBS 12 11 0 for operating subsidies. Operating subsidies received from public authorities or the institutions of the European Union are excluded from Turnover (SBS2 12 11 0) .According to SBS2 12 15 0 operating subsidies are included in other operating income.

Direct subsidies: an example of investment subsidies which should be excluded could clarify the concept. Does this refer to investment subsidies at a sectoral level and not on a vessel basis such as the modernisation of a port? |
| | Other income | | Income classified as other operating income, financial income and *extraordinary income* in company accounts which are excluded | *extraordinary income:* not sure that extraordinary and financial income should be included (even if not required |

Variable group	Variables (as listed in Appendix VI)	Definition and guideline (document)	Definition Structural Business Statistics (SBS) COMMISSION REGULATION (EC) No 250/2009 amending Commission Regulation (EC) No 2700/98	Comments from the group on Appendix VI
			from turnover. E.g. income coming from recreational fishing, tourism, oil rig duty, etc. also insurance payment for damage/loss of gear/vessel.	elsewhere for the fleet). When using income of fishing fleet (e.g. AER) we usually refer to it as operating income (in order to calculate operating indicators)
Personnel costs	Wages and salaries[3]	SBS (13 31 0)	The total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home-workers) in return for work done by the latter during the reference period. Personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions. Personnel costs are made up of: — wages and salaries, — employers' social security costs.	The name of variables related to employment remuneration is misleading in Appendix VI. If "wages and salaries" should include also social security costs, as suggested in note 3, the correct name of the variable should be "personnel costs" (not wage and salaries) the sum of wage and salaries and social security costs as in the SBS 13 31 0.
	Imputed value of unpaid labour	SBS (13 32 0)	Imputed value of unpaid labour can be relevant in the case of small and medium enterprises, managed at family levels. It could be calculated for all the individual enterprise which provides the data about the unpaid family members engaged in the sector. The calculations will be based on the employment information (number of family members involved in the operation) and the average of "paid labour costs" calculated for the sector. Imputed value of unpaid labour is especially relevant in family enterprise but this is not the only case. The methodology could be reviewed in accordance with SGECA recommendations.	Imputed value of unpaid labour: possible definition of SGECA 10-04 ("Unpaid workers normally refers to persons who live with the proprietor of the unit and work regularly for the unit, but do not have a contract of service and do not receive a fixed sum for the work they perform. This is limited to those persons who are not included on the payroll of another unit as their principal occupation. Thus, imputed value of unpaid labour estimates the value of the salaries that these unpaid workers would receive if their work was remunerated") and discussion of EWG 11-18 (the imputed value of unpaid labour is the value of the labour provided by people delivering unpaid labour and working not on a regular basis")
Energy costs	Energy costs	SBS (20 11 0)	Purchases of all energy products during the reference period. Including lubrication oil. Broken down by type if possible (petrol,	

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[3] Include part of value of landings, paid to fishermen.

Variable group	Variables (as listed in Appendix VI)	Definition and guideline (document)	Definition Structural Business Statistics (SBS) COMMISSION REGULATION (EC) No 250/2009 amending Commission Regulation (EC) No 2700/98	Comments from the group on Appendix VI
			diesel, biofuel, etc.)	
Repair and maintenance	Repair and maintenance	SBS (13 11 0)	Gross costs of maintenance and repairs to vessel and gear.	
Other operational costs	Variable costs		Includes all purchased inputs (goods and services) related to fishing effort and/or catch/landing.	
	Non-variable costs		Includes purchased inputs not related to effort and/or catch/landing (including leased equipment)	Possible change; Non-variable costs - Includes purchased inputs not directly related to effort and/or catch/landing (including leased equipment).
	Lease/rental payments for quota or other fishing rights		Lease/rental payments for quota or other fishing rights.	
Capital costs		ESA (6.02 to 6.05)	Depreciation of a capital has to bcalculated according to the PIM methodology documented in the capital valuation report (No FISH/2005/03).	Capital costs : following the OECD Manual 2009 they are the cost of using capital in production: hence they include both depreciation and the real costs of financing or a required real return to capital.
	Depreciation of capital			In the System of National Accounts, capital costs are measured as consumption of fixed capital only, leaving out the other main element, financing costs. Reasons for this are of a practical nature (which interest rate should be chosen?) but there are also conceptual arguments such as the reluctance to see GDP rise when interest rates for government debt increase.
				DCF requires the estimation of depreciation costs based on the PIM method but does not indicate which scheme (geometric/linear) should be applied

Variable group	Variables (as listed in Appendix VI)	Definition and guideline (document)	Definition Structural Business Statistics (SBS) COMMISSION REGULATION (EC) No 250/2009 amending Commission Regulation (EC) No 2700/98	Comments from the group on Appendix VI
Capital value	Value of physical Capital: depreciated replacement value	ESA (7.09 to 7.24)	Economic assets are entities functioning as a store of value over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by their owners by holding them or using them over a period of time. NON-FINANCIAL PRODUCED ASSETS (AN.1) *Definition:* Produced assets (AN.1) are non-financial assets that have come into existence as outputs from production processes.	
	Value of physical Capital: depreciated historical value		NON-FINANCIAL NON-PRODUCED ASSETS (AN.2) *Definition:* Non-produced assets (AN.2) are economic assets that come into existence other than through processes of production. They consist of tangible assets and intangible assets. FINANCIAL ASSETS AND LIABILITIES (AF.) *Definition:* Financial assets (AF.) are economic assets, comprising means of payment, financial claims and economic assets which are close to financial claims in nature.	
	Value of quota and other fishing rights			
Investments	Investments in physical capital	SBS (15 11 0) ESA (3.102 to 3.111)	Improvements to existing vessel/gear during the given year	Investments: the definition must better explain what kind of investments should be included.
Financial position	Debt/asset ratio		Debt in relation to total capital value (defined in the variables list) in %.	Financial position should be defined as the ratio debts/total assets. Footnote 13 is misleading in referring to the capital value estimated by the PIM. Definition for debts is needed: short and long term loans, possible definition later in the table for aquaculture and processing variables. For sake of clarification,

Variable group	Variables (as listed in Appendix VI)	Definition and guideline (document)	Definition Structural Business Statistics (SBS) COMMISSION REGULATION (EC) No 250/2009 amending Commission Regulation (EC) No 2700/98	Comments from the group on Appendix VI
				considering that most MS derive debts from financial statements, it would be advisable to have a footnote with an example of all the possible type of debts as in article, 9, item C of the IV Council Directive 78/660/EEC.
Employment	Engaged crew	SBS (16 11 0) SBS (16 13 0) SBS (16 13 1) SBS (16 13 2) SBS (16 13 5) SBS (16 14 0) SBS (16 15 0)	Number of jobs onboard, equal to the average number of persons working for and paid by vessel owner This include temporary crew as well as rotation crew.	
	FTE National		The number of employees converted into full-time equivalents (FTE). Based on national reference level for FTE working hours for crew members on board the vessel (excluding resting time) and the working hour onshore. If the annual working hours per crew member exceed the reference level, the FTE is equal 1 per crew member. If not, the FTE equals to the ration between the hours worked and reference level (the methodology should be in accordance to the study Calculation of labour including full-time equivalent (FTE) in fisheries No FISH/2005/14).	
	FTE harmonized		Full-time equivalent based on the threshold of 2000 hours per FTE using the same methodology as FTE National.	
Number of enterprises	Number of fishing enterprises/units	N/A	A count of the number of enterprises registered to the Fleet register, owning the vessels. By size category: 1. Owned one vessel; 2. 2-5 owned vessels; 3. >5 owned vessels.	

Table 2. Definition of aquaculture variables, appendix X Council Regulation (EC) No 93/2010

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
Income	Turnover	SBS (12 11 0)	Turnover comprises the totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties. Turnover includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover.	- Stocks (of livestock or raw material) is important in the aquaculture sector. It has an impact on the turnover if taking the variation into account or not. Need to clarify definition for this concept ?
	Subsidies		Operating subsidies received from public authorities or the institutions of the European Union which are excluded from turnover. Includes direct payments, e.g. compensation of stopping trading, refunds of fuel duty or similar lump sum compensation payments; excludes social benefit payment and indirect subsidies e.g. reduces duty on inputs such as fuel or investment subsidies.	Appendix X is misleading where it refers to SBS 12 11 0 for income from leasing, direct subsidies and other income. Indeed these income from leasing and other income are not part of turnover (12 11 0) but a share of the value of production (SBS 12 12 0).
	Other income		Income classified as other operating income included in company accounts which are excluded from turnover; income coming from other activities, then aquaculture, e.g. licensing for recreational fishery in the ponds.	
Personnel costs	Wages and salaries	SBS (13 31 0)	Personnel costs are defined as the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home-workers) in return for work done by the latter during the reference period. Personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions. Personnel costs are made up of: — wages and salaries, — employers' social security costs.	Recommendation to add the missing part of the SBS definition: "All remuneration paid during the reference period is included, regardless of whether it is paid on the basis of working time, output or piecework, and whether it is paid regularly or not. Included are all gratuities, workplace and performance bonuses, *ex gratia* payments, 13th month pay (and similar fixed bonuses), payments made to employees in consideration of dismissal, lodging, transport, cost of living and family allowances, commissions, attendance fees, overtime, night work, etc. as well as taxes, social security contributions and other amounts owed by the employees and retained at source by the employers. Also included are the social security costs for the employer. These include

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
				employer's social security contributions to schemes for retirement pensions, sickness, maternity, disability, unemployment, occupational accidents and diseases, family allowances as well as other schemes. These costs are included regardless of whether they are statutory, collectively agreed, contractual or voluntary in nature.
	Imputed value of unpaid labour		Imputed value of unpaid labour can be relevant in the case of small and medium enterprises managed at family levels. It could be calculated for all the individual enterprise which provides the data about the unpaid family members engaged in the sector. The calculations will be based on the employment information (number of family members involved in the operation) and the average of "paid labour costs" calculated for the sector. Imputed value of unpaid labour is especially relevant in family enterprise but this is not the only case. The methodology could be reviewed in accordance with SGECA recommendations.	Same comments made for the fleet.
Energy costs	Energy costs	SBS (20 11 0)	Purchases of all energy products during the reference period should be included in this variable if they are purchased to be used as fuel.	Energy products purchased as a raw material or for resale without transformation should be excluded. The figure should be given in value only.
Raw material costs	Livestock costs	SBS (13 11 0)	Total purchases of goods and services

Purchases of goods and services include the value of all goods and services purchased during the accounting

period for resale or consumption in the production process, excluding capital goods the consumption of which is registered as consumption of fixed capital. The goods and services concerned may be either resold with or without further transformation, completely used up in the production process or, finally, be stocked.

Included in these purchases are the materials that enter directly into the goods produced (raw materials,

intermediary products, components), plus non-capitalised small tools and | |
| | Feed costs | | | |

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Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
Repair and maintenance costs	Repair and maintenance		equipment. Also included are the value of ancillary materials (lubricants, water, packaging, maintenance and repair materials, office materials) as well as energy products. Included in this variable are the purchases of materials made for the production of capital goods by the unit. Services paid for during the reference period are also included regardless of whether they are industrial or non-industrial. In this figure are payments for all work carried out by third parties on behalf of the unit including current repairs and maintenance, installation work and technical studies. Amounts paid for the installation of capital goods and the value of capitalised goods are excluded. Also included are payments made for non-industrial services such as legal and accountancy fees, patents and licence fees (where they are not capitalised), insurance premiums, costs of meetings of shareholders and governing bodies, contributions to business and professional associations, postal, telephone, electronic	
Other operational costs	Other operational costs		communication, telegraph and fax charges, transport services for goods and personnel, advertising costs, commissions (where they are not included in wages and salaries), rents, bank charges (excluding interest payments) and all other business services provided by third parties. Included are services which are transformed and capitalised by the unit as capitalised production. Purchases of goods and services are valued at the purchase price excluding deductible VAT and other deductible taxes linked directly to turnover. All other taxes and duties on the products are therefore not deducted from the valuation of the purchases of goods and services. The treatment of taxes on production is not relevant in the valuation of these purchases. Specific calculation methods are needed for NACE Rev.1 classes 66.01 and 66.03	
Capital costs	Depreciation of capital	ESA (6.02 to 6.05)	Consumption of fixed capital (K.1) represents the amount of fixed assets used up, during the period under consideration, as a result of normal wear and tear and foreseeable obsolescence, including a provision for losses of fixed assets as a result of accidental damage which can be insured against. Consumption of fixed capital must be calculated for all fixed assets (except animals), including both tangible fixed assets and intangible fixed assets	

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
			such as mineral exploration costs and software, major improvements to non-produced assets and costs of ownership transfers associated with non-produced assets. Consumption of fixed capital (which should be distinguished from the depreciation allowed for tax purposes or the depreciation shown in business accounts) should be estimated on the basis of the stock of fixed assets and the probable average economic life of the different categories of those goods. For the calculation of the stock of fixed assets, the perpetual inventory method (PIM) is recommended whenever direct information on the stock of fixed assets is missing. The stock of fixed assets should be valued at the purchasers' prices of the current period. Losses of fixed assets occurring as a result of accidental damage which can be insured against are taken into account in calculating the average service life of the goods in question. For the economy as a whole the actual normal accidental damage within a given accounting period may be expected to be equal, or close, to the average. However, for individual units and groupings of units actual normal and average accidental damage may differ. In this case, for sectors, any difference is recorded as other changes in volume of fixed assets. Consumption of fixed capital is calculated according to the 'straight line' method, by which the value of a fixed asset is written off at a constant rate over the whole lifetime of the good. However, depending on the pattern of decline in the efficiency of a fixed asset the calculation of consumption of fixed capital according to the geometric depreciation method may be required.	
	Financial costs, net		Costs of financial activity minus income from financial activity	
Extraordinary costs	Extraordinary costs, net		Extraordinary, unexpected, costs, excluded from cost items, minus extraordinary, unexpected income, excluded from other income.	
Capital value	Total value of assets	SBS (43 30 0) ESA (7.09 to 7.24)	Economic assets are entities functioning as a store of value over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by their owners by holding them or using them over a period of time.	

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
			NON-FINANCIAL PRODUCED ASSETS (AN.1) *Definition:* Produced assets (AN.1) are non-financial assets that have come into existence as outputs from production processes. NON-FINANCIAL NON-PRODUCED ASSETS (AN.2) *Definition:* Non-produced assets (AN.2) are economic assets that come into existence other than through processes of production. They consist of tangible assets and intangible assets. FINANCIAL ASSETS AND LIABILITIES (AF.) *Definition:* Financial assets (AF.) are economic assets, comprising means of payment, financial claims and economic assets which are close to financial claims in nature.	
Investments	Net Investments	SBS (15 11 0) SBS (15 21 0) ESA (3.102 to 3.111)	Purchase and Sale of assets during the year **Gross investment in tangible goods** Investment during the reference period in all tangible goods. Included are new and existing tangible capital goods, whether bought from third parties or produced or own use (i.e. capitalised production of tangible capital goods), having a useful life of more than one year including non-produced tangible goods such as land. The threshold for the useful life of a good that can be capitalised may be increased according to company accounting practices where these practices require, a greater expected useful life than the one-year threshold indicated above. All investments are valued prior to (i.e. gross of) value adjustments, and before the deduction of income from disposals. Purchased goods are valued at purchase price, i.e. transport and installation charges, fees, taxes and other costs of ownership transfer are included. Own produced tangible goods are valued at production cost. Goods acquired through restructuring (such as mergers, take-overs, break-ups, split-off) are excluded. Purchases of small tools which are not capitalised are included under current expenditure. Also included are all additions, alterations, improvements and renovations which prolong the service life or increase the productive capacity of capital	

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
			goods.	

Current maintenance costs are excluded as is the value and current expenditure on capital goods used under rental and lease contracts. Investment in intangible and financial assets are excluded.

Concerning the recording of investments where the invoicing, delivery, payment and first use of the good may take place in different reference periods, the following method is proposed as an objective: Investments are recorded when the ownership is transferred to the unit that intends to use them. Capitalised production is recorded when produced. Concerning the recording of investments made in identifiable stages, each part-investment should be recorded in the reference period in which they are made.

In practice this may not be possible and company accounting conventions may mean that the following approximations to this method need to be used:

(i) investments are recorded in the reference period in which they are delivered,

(ii) investments are recorded in the reference period in which they enter into the production process,

(iii) investments are recorded in the reference period in which they are invoiced,

(iv) investments are recorded in the reference period in which they are paid for.

Sales of tangible investment goods

Sales of tangible goods includes the value of existing tangible capital goods, sold to third parties. Sales of tangible capital goods are valued at the price actually received (excluding VAT), and not at book value, after deducting any costs of ownership transfer incurred by the seller. Value adjustments and disposals other than by sale are excluded.

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
Debt	Debt		Financial assets created when creditors lend funds to debtors, either directly or through brokers, which are either evidenced by non-negotiable documents or not evidenced by documents. *Short-term loans* - loans whose original maturity is normally one year or less, and in exceptional cases two years at the maximum, and loans repayable on demand. *Long-term loans* - loans whose original maturity is normally more than one year, and in exceptional cases more than two years at the minimum.	Definition needed. See comments on financial position for the fleet.
Raw material Volume	Livestock		*Livestock volume* - volume of livestock purchased during the reference period.	
	Fish Feed		*Fish feed volume* - volume of feed purchased during the reference period.	
Volume of Sales	Volume of Sales		Conversion factors from numbers to tones should be stated in the NP	
Employment	Number of persons employed	SBS (16 11 0)	The number of persons employed is defined as the total number of persons who work in the observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It includes persons absent for a short period (e.g. sick leave, paid leave or special leave), and also those on strike, but not those absent for an indefinite period. It also includes part-time workers who are regarded as such under the laws of the country concerned and who are on the payroll, as well as seasonal workers, apprentices and home workers on the payroll. *Unpaid family workers* refer to persons who live with the proprietor of the unit and work regularly for the unit, but do not have a contract of service and do not receive a fixed sum for the work they perform. This is limited to those persons who are not included on the payroll of another unit as their principal occupation.	
	FTE National	SBS (16 14 0)	The number of employees converted into full-time equivalents (FTE). Figures for the number of persons working less than the standard working time of a full-year full-time worker (defined in the national law), will be	

Variable group	Variables (as listed in Appendix X)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix X
			converted into full-time equivalents, with regard to the working time of a full-time full-year employee in the unit. In this category people working less than a standard working day, less than the standard number of working days in the week, or less than the standard number of weeks/months in the year are included. The conversion will be carried out on the basis of the number of hours worked.	
Number of enterprises	Number of enterprises	SBS (11 11 0)	A count of the number of enterprises registered to the population concerned in the business register corrected for errors, in particular frame errors. Inactive units are excluded. This statistic should include all units active during at least a part of the reference period.	

Table 3. Definition of fish processing variables, appendix XII Council Regulation (EC) No 93/2010

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
Income		SBS (12 11 0)	Turnover comprises the totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties.	Income classified as other operating income, financial income and extra-ordinary income in company accounts according to the 4th Accounting Directive and revenue from the use by others of enterprise assets yielding interest, royalties and dividends and other income according to IAS/IFRS is excluded from turnover. Operating subsidies received from public authorities or the institutions of the European Union are also excluded.
	Turnover		Turnover includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover. It also includes all other charges (transport, packaging, etc.) passed on to the customer, even if these charges are listed separately in the invoice. Reduction in prices, rebates and discounts as well as the value of returned packing must be deducted.	
	Subsidies		Operating subsidies received from public authorities or the institutions of the European Union which are excluded from turnover. Includes direct	Appendix XII is misleading where it refers to SBS 12 11 0 for income from leasing, direct

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			payments; excludes social benefit payment and indirect subsidies e.g. investment subsidies.	subsidies and other income. Indeed these income from leasing and other income are not part of turnover (12 11 0) but a share of the value of production (SBS 12 12 0).
	Other income		Income classified as other operating income included in company accounts which are excluded from turnover; income coming from other activities, then fish processing.	Appendix XII is misleading where it refers to SBS 12 11 0 for income from leasing, direct subsidies and other income. Indeed these income from leasing and other income are not part of turnover (12 11 0) but a share of the value of production (SBS 12 12 0).
Personnel costs	Wages and salaries	SBS (13 31 0)	Personnel costs are defined as the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home-workers) in return for work done by the latter during the reference period. Personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions. Personnel costs are made up of: — wages and salaries, — employers' social security costs. All remuneration paid during the reference period is included, regardless of whether it is paid on the basis of working time, output or piecework, and whether it is paid regularly or not. Included are all gratuities, workplace and performance bonuses, ex gratia payments, 13th month pay (and similar fixed bonuses), payments made to employees in consideration of dismissal, lodging, transport, cost of living and family allowances, commissions, attendance fees, overtime, night work, etc. as well as taxes, social security contributions and other amounts owed by the employees and retained at source by the employers. Also included are the social security costs for the employer. These include employer's social security contributions to schemes for retirement pensions, sickness, maternity, disability, unemployment, occupational accidents and diseases, family allowances as well as other schemes. These costs are included regardless of whether they are statutory, collectively agreed, contractual or voluntary in nature.	The same comments made as far as personnel costs for the fleet.

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			Payments for agency workers are not included in personnel costs.	
	Imputed value of unpaid labour		Imputed value of unpaid labour can be relevant in the case of small and medium enterprises managed at family levels. Could be calculated for all enterprises which provide the data about unpaid family members engaged in the sector. The calculations will be based on the employment information (number of family members involved in the operation) and the average of "paid labour costs" calculated for the sector. Imputed value of unpaid labour is especially relevant in family enterprise but this is not the only case.	The same comments made for the fleet. The number of unpaid persons employed is defined as the number of persons who work regularly in the observation unit and who do not receive compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind (unpaid family workers, working proprietors not receiving a compensation in the form of wages, salaries, ….). Number of unpaid persons employed (16 12 0) is calculated as the difference between the number of person employed (16 11 0) and the number of employees (16 13 0). See EU Reg. 250/2009 (SBS)
Energy costs	Energy costs	SBS (20 11 0)	Purchases of all energy products during the reference period should be included in this variable if they are purchased to be used as fuel. Energy products purchased as a raw material or for resale without transformation should be excluded. The figure should be given in value only .	

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
Raw material costs	Purchase of fish and other raw material for production	SBS (13 11 0)[4]	**Total purchases of goods and services** Purchases of goods and services include the value of all goods and services purchased during the accounting period for resale or consumption in the production process, excluding capital goods the consumption of which is registered as consumption of fixed capital. The goods and services concerned may be either resold with or without further transformation, completely used up in the production process or, finally, be stocked. Included in these purchases are the materials that enter directly into the goods produced (raw materials, intermediary products, components), plus non-capitalised small tools and equipment. Also included are the value of ancillary materials (lubricants, water, packaging, maintenance and repair materials, office materials) as well as energy products. Included in this variable are the purchases of materials made for the production of capital goods by the unit.	
Other operational costs	Other operational costs		Services paid for during the reference period are also included regardless of whether they are industrial or non-industrial. In this figure are payments for all work carried out by third parties on behalf of the unit including current repairs and maintenance, installation work and technical studies. Amounts paid for the installation of capital goods and the value of capitalised goods are excluded. Also included are payments made for non-industrial services such as legal and accountancy fees, patents and licence fees (where they are not capitalised), insurance premiums, costs of meetings of shareholders and governing bodies, contributions to business and professional associations, postal, telephone, electronic communication, telegraph and fax charges, transport services for goods and personnel, advertising costs, commissions (where they are not included in wages and salaries), rents, bank charges (excluding interest payments) and	

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[4] Only total purchases of goods and Services is collected by SBS.

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			all other business services provided by third parties. Included are services which are transformed and capitalised by the unit as capitalised production.	
			Expenditure classified as financial expenditure or extraordinary expenditure in company accounts is excluded from the total purchases of goods and services.	
			Purchases of goods and services are valued at the purchase price, i.e. the price the purchaser actually pays for the products, including any taxes less subsidies on the products bought excluding however value added type taxes.	
			All other taxes and duties on the products are therefore not deducted from the valuation of the purchases of goods and services. The treatment of taxes on production is not relevant in the valuation of these purchases.	
			For the statistics on activities defined in Section 3 of Annexes I to IV, of Regulation (EC) No 295/2008 except for the enterprises with an activity classified in NACE Rev.2 Section K, expenditure classified as financial expenditure in company accounts is excluded from the total purchases of goods and services.	
Capital costs	Depreciation of capital	ESA (6.02 to 6.05)	Consumption of fixed capital (K.1) represents the amount of fixed assets used up, during the period under consideration, as a result of normal wear and tear and foreseeable obsolescence, including a provision for losses of fixed assets as a result of accidental damage which can be insured against.	
			Consumption of fixed capital must be calculated for all fixed assets (except animals), including both tangible fixed assets and intangible fixed assets such as mineral exploration costs and software, major improvements to non-produced assets and costs of ownership transfers	
			associated with non-produced assets.	
			Consumption of fixed capital (which should be distinguished from the depreciation allowed for tax purposes or the depreciation shown in business accounts) should be estimated on the basis of the stock of fixed assets and the probable average economic life of the different categories of those goods. For the calculation of the stock of fixed assets, the perpetual	

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			inventory method (PIM) is recommended whenever direct information on the stock of fixed assets is **missing**. The stock of fixed assets should be valued at the purchasers' prices of the current period. Losses of fixed assets occurring as a result of accidental damage which can be insured against are taken into account in calculating the average service life of the goods in question. For the economy as a whole the actual normal accidental damage within a given accounting period may be expected to be equal, or close, to the average. However, for individual units and groupings of units actual normal and average accidental damage may differ. In this case, for sectors, any difference is recorded as other changes in volume of fixed assets. Consumption of fixed capital is calculated according to the 'straight line' method, by which the value of a fixed asset is written off at a constant rate over the whole lifetime of the good. However, depending on the pattern of decline in the efficiency of a fixed asset the calculation of consumption of fixed capital according to the geometric depreciation method may be required.	
	Financial costs, net		Costs of financial activity minus income from financial activity	As recommended by SGECA 10-04 this variable should be defined as: "Financial costs, net" is the interest costs of capital. "Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings" as in the Fourth Council Directive 78/660/EEC, art. 23, item C.13. **Comment**: According to SBS 250/2009 interest income and costs shall relate to enterprise regular operations and e.g. not to stock speculation. Hence it shall not include financial income as understood in the SBS (compare e.g. def. of gross value added at factor cost – 12 15 0 or production value 12 12 0) or in the IV. Council Directive (see e.g. above for extraordinary cost.) Definition shall be further clarified.

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
Extraordinary costs	Extraordinary costs, net		Extraordinary, unexpected, costs, excluded from cost items, minus extraordinary, unexpected income, excluded from other income	
Capital value	Total value of assets	SBS (43 30 0) ESA (7.09 to 7.24)	Economic assets are entities functioning as a store of value over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by their owners by holding them or using them over a period of time. NON-FINANCIAL PRODUCED ASSETS (AN.1) *Definition:* Produced assets (AN.1) are non-financial assets that have come into existence as outputs from production processes. NON-FINANCIAL NON-PRODUCED ASSETS (AN.2) *Definition:* Non-produced assets (AN.2) are economic assets that come into existence other than through processes of production. They consist of tangible assets and intangible assets. FINANCIAL ASSETS AND LIABILITIES (AF.) *Definition:* Financial assets (AF.) are economic assets, comprising means of payment, financial claims and economic assets which are close to financial claims in nature.	This variable consists of the sum of items 1 to 15 of the asset side of the balance sheet or of the sum of items 1 to 14 of the liability side of the balance sheet as included in Article 4 of Directive 86/635. In general, the balance sheet total shall equal the sum of all items of the asset side of the balance sheet or of the sum of all items on the liability side of the balance sheet.
Investments	Net Investments	SBS (15 11 0) to SBS (15 21 0) ESA (3.102 to 3.111)	Purchase and Sale of assets during the year **Gross investment in tangible goods** Investment during the reference period in all tangible goods. Included are new and existing tangible capital goods, whether bought from third parties or produced or own use (i.e. capitalised production of tangible capital goods), having a useful life of more than one year including non-produced tangible goods such as land. The threshold for the useful life of a good that can be capitalised may be increased according to company accounting practices where these practices require, a greater expected useful life than the one-year threshold indicated above. All investments are valued prior to (i.e. gross of) value adjustments, and before the deduction of income from disposals. Purchased goods are valued	Has to be collected according to the reg. 58/1997 by CBS: 15 12 0 Gross investment in land 15 13 0 Gross investment in existing buildings and structures 15 14 0 Gross investment in construction and alteration of buildings 15 15 0 Gross investment in machinery and equipment 15 21 0 Sales of tangible investment goods

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			at purchase price, i.e. transport and installation charges, fees, taxes and other costs of ownership transfer are included. Own produced tangible goods are valued at production cost. Goods acquired through restructuring (such as mergers, take-overs, break-ups, split-off) are excluded. Purchases of small tools which are not capitalised are included under current expenditure.	Why stop here, and not include e.g. 15 44 1 ESA (3.102 to 3.111)
			Also included are all additions, alterations, improvements and renovations which prolong the service life or increase the productive capacity of capital goods.	
			Current maintenance costs are excluded as is the value and current expenditure on capital goods used under rental and lease contracts. Investment in intangible and financial assets are excluded.	
			Concerning the recording of investments where the invoicing, delivery, payment and first use of the good may take place in different reference periods, the following method is proposed as an objective: Investments are recorded when the ownership is transferred to the unit that intends to use them. Capitalised production is recorded when produced. Concerning the recording of investments made in identifiable stages, each part-investment should be recorded in the reference period in which they are made.	
			In practice this may not be possible and company accounting conventions may mean that the following approximations to this method need to be used:	
			(i) investments are recorded in the reference period in which they are delivered,	
			(ii) investments are recorded in the reference period in which they enter into the production process,	
			(iii) investments are recorded in the reference period in which they are invoiced,	
			(iv) investments are recorded in the reference period in which they are paid for.	
			Sales of tangible investment goods	

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			Sales of tangible goods includes the value of existing tangible capital goods, sold to third parties. Sales of tangible capital goods are valued at the price actually received (excluding VAT), and not at book value, after deducting any costs of ownership transfer incurred by the seller. Value adjustments and disposals other than by sale are excluded.	
Debt	Debt		Financial assets created when creditors lend funds to debtors, either directly or through brokers, which are either evidenced by non-negotiable documents or not evidenced by documents. *Short-term loans* - loans whose original maturity is normally one year or less, and in exceptional cases two years at the maximum, and loans repayable on demand. *Long-term loans* - loans whose original maturity is normally more than one year, and in exceptional cases more than two years at the minimum.	
Employment	Number of persons employed	SBS (16 11 0)	The number of persons employed is defined as the total number of persons who work in the observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It includes persons absent for a short period (e.g. sick leave, paid leave or special leave), and also those on strike, but not those absent for an indefinite period. It also includes part-time workers who are regarded as such under the laws of the country concerned and who are on the payroll, as well as seasonal workers, apprentices and home workers on the payroll. The number of persons employed excludes manpower supplied to the unit by other enterprises, persons carrying out repair and maintenance work in the enquiry unit on behalf of other enterprises, as well as those on compulsory military service. *Unpaid family workers* refer to persons who live with the proprietor of the unit and work regularly for the unit, but do not have a contract of service and do not receive a fixed sum for the work they perform. This is limited to those persons who are not included on the payroll of another unit as their	Collected by SBS: *16 11 0 Number of persons employed* *16 13 0 Number of employees* 16 13 1 Number of part-time employees 16 14 0 Number of employees infull-time equivalent units 16 15 0 Number of hours worked by employees

Variable group	Variables (as listed in Appendix XII)	Definition and guideline (document)	Definition (text)	Comments from the group on Appendix XII
			principal occupation.	
	FTE National	SBS (16 14 0)	The number of employees converted into full-time equivalents (FTE). Figures for the number of persons working less than the standard working time of a full-year full-time worker, should be converted into full-time equivalents, with regard to the working time of a full-time full-year employee in the unit. Included in this category are people working less than a standard working day, less than the standard number of working days in the week, or less than the standard number of weeks/months in the year. The conversion should be carried out on the basis of the number of hours, days, weeks or months worked.	
Number of enterprises	Number of enterprises	SBS (11 11 0)	A count of the number of enterprises registered to the population concerned in the business register corrected for errors, in particular frame errors. Dormant units are excluded. This statistic should include all units active during at least a part of the reference period.	Compare Chapter IV, B.1.3 of Comm. Dec. 93/2010 – Also other sources/register may be used!!??

Additional terms related to the capital value calculation according to the PIM methodology and to the other variables addressed by the Working Group

Capital assets can be valued on the basis of three different prices;

Historical price: the assets are valued at the prices at which they were originally acquired. The term *acquisition price* is used as a synonym for historical price.

Current price: the assets are valued at the prices of the current year. Valuation at current price is sometimes referred to as valuation at current "replacement" value, but the qualifier "replacement" raises questions about what exactly is being replaced. For this reason the word "current" should be preferred to "replacement".

Constant price: the assets are valued at the prices of a selected year. The evaluation at constant price of the current year coincides with the evaluation at current price.

Gross Value (also referred to as un-depreciated value): is given by the summation of net value (depreciated value) and the consumption of capital which is equal to depreciation costs.

Net Value (also referred to as depreciated value): is given by the gross value minus the cumulated consumption of capital which is equal to depreciation costs.

ANNEX 2 - REVISED GUIDELINES FOR AR PRESENTATION

In compiling the Annual Report on the activities performed to implement the National Program, MS has to apply the guidelines for the submission of Technical Report on the National Data Collection Programmes under Council Regulation (EC) 199/2008, Commission Regulation (EC) 665/2008 and Commission Decision 2008/949/EC, Version 2009.

The present revision replaces the guidelines (text&tables) for the following sections:

- III.B Economic variables
- IV Module of the evaluation of the economic situation of the aquaculture and processing industry
- Table III.B.1 - Population segments for collection of economic data
- Table III.B.3 - Economic Data collection strategy
- Table III.F.1 – Transversal Variables Data collection strategy
- Table IV.A.3 – Sampling strategy - Aquaculture sector
- Table IV.B.2 – Sampling strategy - Processing industry

Tables of NP can be maintained as in the original formats because suggested revision only relate to information that should be given in the AR and not in NP, the so called "grey columns" (such as accuracy indicators).

Revised text with respect to the 2009 version of the guidelines is given in red.

III.B Economic variables

[Insert here supra-region header, according to Appendix II of Commission Decision 2008/949/EC. For each supra region, sections III.B.1-4 should be given.]

III.B.1 Achievements: Results and deviation from NP proposal

Update standard tables III.B.1, III.B.2 with the information collected during the sampling year.

Description of fields in the table III.B.1: Population segments for collection of economic data

Fields	Description/definition of the fields
Achieved Sample no.	Achieved sample no. should refer to the no. of respondents (and not for instance to the number of questionnaires actually sent) The no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate)
Achieved Sample rate	Achieved sample no./frame population no The no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate).
Achieved sample rate / planned sample rate	Automatic filling with the figures achieved vs planned

Table III.B.1 should be filled in separately for each individual data source/survey performed.

Description of fields in the table III.B.2: Economic Clustering of fleet segments

Fields	Description/definition of the fields
Total number of vessels in the cluster by the 1st of January of the sampling year	Updated number of vessels comprised in each of the clusters.
Number of vessels in the segment by the 1st of January of the sampling year	Updated number of vessels comprised in each of the fleet segments.

List the shortfalls (if any) in the achieved data collection compared to what was planned in the relevant NP proposal, and explain the reasons for the shortfalls. Explain any deviation from the sampling intensity proposed, the methods used for collecting data and for estimating the parameters.

MS are reminded of the fact that the DCF has no provisions for the exclusion of any part of the vessel population from data collection (by means of thresholds for, e.g., fishing effort, quantities landed, revenues, etc.). If, nonetheless, part of the fleet was excluded from data collection, the reasons for this should be thoroughly explained and justified.

Clustering of fleet segments should be described and information should be given on the segments that are clustered, as required by the DCF and following STECF recommendations. MS should distinguish between segments considered for clustering as follows:

1. Important segments with distinct characteristics;

2. Segments similar to other segments;

3. Non-important segments with distinct characteristics.

Importance of fleet segments should be assessed in terms of landings (value and volume) and/or effort. Similarity should be demonstrated using expert knowledge on fishing patterns or on available data on landings and/or effort.

For each of the cases described, MS should apply the following approaches for clustering according to the different characteristics of fleet segments:

1. Important segments with distinct characteristics

Such segments should not be clustered unless strictly necessary in data reporting for confidentiality reasons. Data should be separately collected for these segments and included in national totals (unless separate identification is then made possible as a consequence).

2. Segments similar to other segments

Such segments can be clustered for sampling purposes, as well as for confidentiality reasons. The segments merged should be selected according to criteria that should be fully explained and justified by the MS. In particular, the approach to determine similarity should be clearly described by the MS.

3. Non-important segments with distinct characteristics

Such segments can be clustered for sampling purposes, as well as for confidentiality reasons. These segments can be merged with other non-important segments. Clustering of these segments with other important segments should be avoided. MS should explain how the lower importance had been determined and for which reasons the clustered segments have been selected. Standard Table III.B.2 should report the segments that have been clustered. Clusters should be named after the biggest segment in terms of number of vessels or economic significance.

A specific section should include a description of methods and assumptions made for <u>estimation of capital value and capital costs</u>. This section should answer to the following questions:

1. Which is the reference values taken into account for the estimation of the PCU (e.g. book value, second hand market, etc…)?

2. Which estimation methods and/or models have been used to estimate PCU?

3. If a net value has been used, how has the gross value been calculated? (e.g. formula, figures from the balance sheets, etc..)?

4. What type of index price series have been used (e.g. heavy machinery index, etc..)?

5. What depreciation rates? From where do they come (e.g. national legislation, general scheme excel spreadsheet, etc…)?

6. Which age schedule (service life time) have been used?

7. What is the share of each asset on the total value of the capital?

III.B.2 Data quality: Results and deviation from NP proposal

Update standard tables III.B.3 with the values of the accuracy indicators.

Description of fields in the table III.B.3: Economic Data collection strategy

Fields	Description/definition of the fields
Achieved sample rate	Provide the value of the indicator as defined in the following table "Indicators of accuracy"
Response rate	
CV	
Other variability indicators	Only in case of in case of Non probability sampling

Information regarding transversal data should only be presented in table III.F.1.

In case of census with a very low achieved response rate (<70%), MS has to evaluate the representativeness of the data collected on the respondents.

Accuracy indicators have to be reported for each fleet segment and for each variable.

MS should follow NP proposal. In the case of changes in the methodology during the year, MS should provide information regarding the changes in the AR.

Table "Indicators of accuracy" to be presented by MS in the TR are described in the following table:

Type of data collection	Accuracy indicators	Definition and *presentation*
A: Census	Response rate	achieved no.[1]/ frame population no. *Present as %*
	Coverage rate	total value of production of the respondent units/total value of production of the frame population Presented as %
	Coefficient of Variation (CV) only if response rate <70% [2]	$$cv(\hat{Y}) = \frac{\hat{\sigma}(\hat{Y})}{\hat{Y}}$$ where: $\hat{\sigma}(\hat{Y})$ is the estimate standard deviation of $\hat{Y}$ $\hat{Y}$ is the estimated total value per fleet segment of the variable e.g. total energy costs [3] *Presented as absolute term (0.2 rather than 20%)*
B: Probability Sample survey **C: Non-Probability Sample survey**	Achieved sampling rate	achieved sample no.[4]/frame population no. *Presented as %*
	Coverage rate	total value of production of the respondent units/total value of production of the frame population Presented as %
	Response rate	achieved sample no.(4)/ planned sample no. [5] *Presented as %*
	Coefficient of Variation (CV)	$$cv(\hat{Y}) = \frac{\hat{\sigma}(\hat{Y})}{\hat{Y}}$$ where: $\hat{\sigma}(\hat{Y})$ is the estimated standard deviation of $\hat{Y}$ $\hat{Y}$ is the estimate of the total [3] *Presented as % (20%rather than 0.2)*

(1) **Achieved no.** is the number of respondents who supplied data in response to the census

(2) **CV** is also required for census which achieves a low response rate (<70%) as this must be treated as if it were a Non-Probability Sample survey

(3) The **estimated total** is the final estimate for each variable and each fleet segment, according to appendix VI of DCF. E.g. estimated total energy costs, estimated total crew costs, per fleet segment

(4) **Achieved sample no.** is the number of respondents that supply data (and not, for instance, the number of questionnaires sent out, or number of companies contacted)

(5) **Planned sample no.** is the number of units to be contacted for the survey (even though you may not expect all of them to respond and supply data)

MS has to provide qualitative description regarding the assessment of quality of data collected.

MS has to describe other variability indicators calculated in case of Non probability sampling in the text and provide the results of calculation in the table III.B.3.

MS has to provide CV of total estimates. In the case of non probability sample survey (or census with <70% response rate), MS should also provide CV of observed values (e.g. in column Other variability indicators).

In a case of derived indicators, as FTE, MS should provide the information about calculation procedures and accuracy indicators of based data collected. The data collected for this purpose should be stated in the report and accuracy indicators should be presented in the Table III.B.3.

List the shortfalls (if any) in the achieved accuracy compared to what was planned in the relevant NP proposal, and explain the reasons for the shortfalls.

III.B.3 Follow-up of Regional and international recommendations

List the appropriate recommendations from all relevant RCMs and STECF WG related to the economic variables and give a brief description of the responsive actions taken. Use sub-headers to make the distinction between the different RCMs, and print recommendations and responses in a different font style (e.g. bold and/or italic for the recommendations and normal text for the descriptions of the action taken). There is no need to also list recommendations that do not apply to MS.

In doing so, you may have to go back several years in time and refer to RCM reports of more than one year ago. Most of the RCM recommendations and proposed actions will only take effect in the year following the actual meeting of the RCM and the actions taken by MS will only become visible in the Technical Reports that are submitted two or three years later.

III.B.4 Actions to avoid deviations

Briefly describe deviations and the actions that have been taken to avoid the deviations in the future and when these actions are expected to produce effect. If there are no deviations, then this section can be skipped.

IV. Module of the evaluation of the economic situation of the aquaculture and processing industry

IV.A Collection of data concerning the aquaculture

IV.A.1 Achievements: Results and deviation from NP proposal

Update standard tables IV.A.2 with the information collected during the sampling year.

Description of fields in the table IV.A.2: Population segments for collection of aquaculture data

List the shortfalls (if any) in the achieved data collection compared to what was planned in the relevant NP proposal, and

Fields	Description/definition of the fields
Achieved Sample no.	Achieved sample no. should refer to the no. of respondents (and not for instance to the number of questionnaires actually sent) the no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate)
Achieved Sample rate	Achieved sample no./frame population no the no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate).
Achieved sample rate / planned sample rate	Automatic filling with the figures achieved vs planned

explain the reasons for the shortfalls. Explain any deviation from the sampling intensity proposed, the methods used for collecting data and for estimating the parameters.

MS are reminded of the fact that the DCR has no provisions for the exclusion of any part of the population from data collection (by means of thresholds for, e.g., number of employees, quantities produced, revenues, etc.). If, none-theless, part of the aquaculture sector was excluded from sampling, the reasons for this should be thoroughly explained and justified.

IV.A.2 Data quality: Results and deviation from NP proposal

Update standard tables IV.A.3 with the values of the accuracy indicators (for definition of indicators see Table "Indicators of accuracy" under section III.B.2.).

Description of fields in the table IV.A.3:Sampling strategy – Aquaculture sector

Fields	Description/definition of the fields
Achieved sample rate	Provide the value of the indicator as defined in the table "Indicators of accuracy" reported in section III.B.2
Response rate	
CV	
Other variability indicators	Only in case of in case of Non probability sampling

In case of census with a very low achieved response rate (<70%), MS has to evaluate the representativeness of the data collected on the respondents.

MS should describe other variability indicators calculated in case of Non probability sampling in the text and provide the results of calculation in the table IV.A.3.

MS should provide CV of total estimates (see table "Indicators of accuracy" in III.B.2). In the case of non probability sample survey (or census with <70% response rate), MS should also provide CV of observed values (e.g. in column Other variability indicators).

List the shortfalls (if any) in the achieved accuracy compared to what was planned in the relevant NP proposal, and explain the reasons for the shortfalls.

IV.A.3 Follow-up of Regional and international recommendations

List the appropriate and actual recommendations from all relevant RCMs and STECF WGs related to the aquaculture variables and give a brief description of the responsive actions taken. Use sub-headers to make the distinction between the different RCMs, and print recommendations and responses in a different font style (e.g. bold and/or italic for the recommendations and normal text for the descriptions of the action taken).There is no need to also list recommendations that do not apply to MS (e.g. on the terms of reference of ICES expert groups, on actions to be taken by the EC, etc.).

IV.A.4 Actions to avoid deviations

Briefly describe deviations and the actions that have been taken to avoid the deviations in the future and when these actions are expected to produce effect. If there are no deviations, then this section can be skipped.

IV.B Collection of data concerning the processing industry

IV.B.1 Achievements: Results and deviation from NP proposal

Update standard tables IV.B.1 with the information collected during the sampling year.

Description of fields in the table IV.B.1: Processing industry -Population segments for collection of economic data

Fields	Description/definition of the fields
Achieved Sample no.	Achieved sample no. should refer to the no. of respondents (and not for instance to the number of questionnaires actually sent)
	the no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate)
Achieved Sample rate	Achieved sample no./frame population no
	the no. of respondents should refer to the survey (unit response rate) and not to the variables (item response rate).
Achieved sample rate / planned sample rate	Automatic filling with the figures achieved vs planned

List the shortfalls (if any) in the achieved data collection compared to what was planned in the relevant NP proposal, and explain the reasons for the shortfalls. Explain any deviation from the sampling intensity proposed, the methods used for collecting data and for estimating the parameters.

MS are reminded of the fact that the DCR has no provisions for the exclusion of any part of the population from data collection (by means of thresholds for, e.g., number of employees, quantities produced, revenues, etc.). If, none-theless, part of the processing industry was excluded from sampling, the reasons for this should be thoroughly explained and justified.

IV.B.2 Data quality: Results and deviation from NP proposal

Update standard tables IV.B.2 with the values of the accuracy indicators (for definition of indicators see Table "Indicators of accuracy" under section III.B.2.).

Description of fields in the table IV.B.2:Sampling strategy – Processing Industry

Fields	Description/definition of the fields
Achieved sample rate	Provide the value of the indicator as defined in the table "Indicators of accuracy" reported in section III.B.2
Response rate	
CV	
Other variability indicators	Only in case of in case of Non probability sampling

In case of census with a very low achieved response rate (<70%), MS has to evaluate the representativeness of the data collected on the respondents

MS should describe other variability indicators calculated in case of Non probability sampling in the text and provide the results of calculation in the table IV.B.2.

MS should provide CV of total estimates (see table "Indicators of accuracy" in III.B.2). In the case of non probability sample survey (or census with <70% response rate), MS should also provide CV of observed values (e.g. in column Other variability indicators).

List the shortfalls (if any) in the achieved accuracy compared to what was planned in the relevant NP proposal, and explain the reasons for the shortfalls.

IV.B.3 Follow-up of Regional and international recommendations

List the appropriate and actual recommendations from all relevant RCMs and STECF WGs related to the fish processing variables and give a brief description of the responsive actions taken. Use sub-headers to make the distinction between the different RCMs, and print recommendations and responses in a different font style (e.g. bold and/or italic for the recommendations and normal text for the descriptions of the action taken). There is no need to also list recommendations that do not apply to MS.

IV.B.4 Actions to avoid deviations

Briefly describe deviations and the actions that have been taken to avoid the deviations in the future and when these actions are expected to produce effect. If there are no deviations, then this section can be skipped.

EU Council Regulation 199/2008
Establishing a Community Framework for the Collection, Management and Use of Data in Fisheries sector for scientific Advice regarding the CFP

WORKSHOP ON CALCULATING CAPITAL VALUE USING PIM AND DEFINITION OF DCF VARIABLES
(amended version according to the revision of STECF/EWG 11-18)

organized by
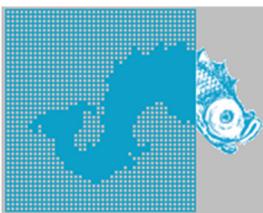
IREPA Onlus

Naples, Italy
13th- 17th, June 2011

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1. Executive summary

The *Workshop on calculating capital value using PIM and definition of DCF variables* was held in the Capitaneria di Porto of Napoli, Italy, from 13th to 17th June 2011. The *Capitaneria di Porto* of Napoli and the Italian Ministry for Agriculture, Environment and Forestry Policies (Ministero delle Politiche Agricole, Ambientali e Forestali, MIPAAF) kindly hosted the workshop.

This "capital" workshop represents the first of the three ones that have been planned for 2011 aimed at exchanging experience and discussing a number of economic issues not specified by the DCF. In order to take into account this need, DGMARE informed SGECA 10-03 that the 2010 Liaison meeting (Oostende) approved the recommendations made by several RCMs to hold workshops on methodological issues for the collection of economic data. These workshops have been and are still going to be convened in 2011 and are attended by national experts appointed by the National Correspondents. SGECA 10-03 was asked to define the TORs for these workshops.
The ToRs of the "capital" workshop have been to:

1. Present and discuss MS experiences in approaches and results from estimating fleet capital value.
2. Hold a training session on the application of the Perpetual Inventory Method
3. Compare price per capacity unit applied by different MS and assumptions made on the PIM method (age schedules, depreciation schemes, depreciation rates, etc.)
4. Propose best practices to be followed by MS in estimating capital value using PIM.
5. Discuss methodological problems faced by MS with respect to estimating unpaid labour and financial position, and propose definitions and best practices for estimation.
6. Propose clear definitions of those variables not clearly defined in the DCF.

Here follow the main conclusions and suggestions of the expert group convened at the workshop, by each ToR.

ToR 1: Presentations by each MS represented at the workshop were given on the methodologies used at national level to estimate capital value and capital costs. A summary for each MS has been drafted in the report on the applied methodology. It emerged that only on 5 MSs, out of total of 12 MSs convened at the workshop, apply the method suggested under the DCF (i.e. PIM method). It also emerged a strong heterogeneity among the applied methodologies and among the reference values (i.e. replacement, historical, etc…). Table 1 provides the main information on the methodologies applied at MS level.

ToR 2: A training (practical) session on the application of the PIM has been undertaken during the workshop in order to illustrate the concrete implementation of the method and to discuss practical problems incurred by MS. The template model, originally developed in Excel, was illustrated. It was agreed that it is crucial that the input data are properly adjusted by MS when calculating the capital value or the depreciation costs. Each MS should carry out investigations to define proper depreciation rates (by type of assets), the assets' service life, the vessel composition (share of each asset on the total value of the vessel) and, generally, all the assumptions on which the template is built. A new version of the excel template including examples of adjustments (e.g. for some fleet segments) was presented and circulated among participants.

ToR 3: An exercise was carried out during the workshop to compare the results of the application of the PIM method as proposed in the template model in Excel. The main problem encountered in this comparative exercise is the non-homogeneity of presented values: some are gross values, others are depreciated values. Moreover, not all MS applied the PIM method and, in some cases, the estimated values are based on very limited data. The values for price per capacity unit (PCU) range from about 700 Euro to 22.000 Euro. Even though PCU might vary due to technological differences or price levels

in different MS, this range is too broad to be realistic. Therefore, the group confirmed further effort is needed to improve consistency.

ToR 4: The group considered that the EC study No. FISH/2005/03 gives a general framework and the input variables have to be adjusted according to the peculiarities of national fleet segments. The PIM method provides only an estimate of fixed capital stocks. Intangible assets should be separated from the value of capital. The group stated that no standard method has been proposed so far to separate tangible from intangible assets.

The group considered that some of the difficulties faced by MS in applying the PIM method are due to uncertain and confusing terminologies used in the EC study. The group discussed in depth the concepts of historical/current/replacement values.

The group suggested applying the degressive depreciation scheme, as already suggested by STECF/SGECA 10-03 that observed that OECD manual 2009 seems to be in favour of the geometric approach ("it has been used in a large number of economic studies and is also gradually adopted by statistical agencies").

As a main conclusion, the discussion of ToR 4 lead to define best practices on the following issues:
- Assumptions to be checked and adapted
- Specification of the composition of the active fleet by age (vintage classes)
- Estimation of the price per capacity unit
- How to derive undepreciated value from depreciated value
- Step by step estimation of the PCU

ToR 5: MS delegates gave a brief illustration on the state of the art at national level concerning the estimation of the imputed value of unpaid labour and of the financial position. A strong heterogeneity in the estimation of both variables emerged. As far as the imputed value of unpaid labour is concerned, the group recognized that the reference to SBS 13 32 0 in the regulation is misleading and should therefore be deleted (reference to wage and salaries). Really, the difference between SBS 13 31 0 (personnel costs), recalled for "wages and salaries of crew" in Annex VI of Reg. EC 949/2008, and SBS 13 32 0, recalled wrongly in the same Annex for "the imputed value of unpaid labour", is in the social security costs (13 31 0 = 13 32 0 + social security costs). Social security expenses of owner (when he can be considered unpaid, i.e. not in the payroll) should be included in personnel costs (paid labour). The group recognized that it is unclear why a distinction has to be made between paid and unpaid labour (why this distinction has been included in the past revision of the regulation?).

For sake of clarification the group recommends that the names of the variables should be changed into "paid labour" (ex Wages and salaries of crew) and "unpaid labour" (ex Imputed value of unpaid labour), being aware that in estimating labour costs people working only on shore should be excluded.

Based on the different experiences by MSs, the group also agreed on suggesting a best practice for the estimation of the imputed value of the unpaid labour. The estimation of the imputed value of the unpaid labour can be made by the following steps:
1. estimation of paid and unpaid FTE;
2. definition of an average remuneration per paid FTE (e.g. average wage by fleet segment/company, national average wage, minimum national wage, etc…). The group considered that it is premature to decide, at the moment, which is the better average wage to use);
3. calculation of imputed value of unpaid labour = unpaid FTE * (average remuneration per paid FTE).

As far as the financial position it is concerned, the group recognized that a specification for the ratio is provided in Annex VI of Reg. EC 949/2008 for the fleet (debt/asset ratio) but any specific definition for both the terms of the ratio is given. There is only a note to Appendix VI (note 13) that further

specify the financial position ratio stating the ratio can be regarded as "% debt in relation to total capital value (as defined above)", in this referring to the estimation of the capital value by mean of the PIM method (note 9 of the same Annex). The group considered that, since financial position is a ratio, debt and assets should come from sources that are consistent with each other. PIM includes only tangible assets and not intangible assets as in the balance sheet (the most used source for getting the value of debts). If debt comes from balance sheet and assets from PIM method it will might give an inconsistent figure for the financial position. The group also concluded that a definition of debts (usually used for calculating the financial position ratio) is missing for the processing sector (Appendix XII of Reg. EC 949/2008). Hence, the group agreed on the following:

- It is essential the two item of the ratio (debts and total asset) should be consistent. For example, if debts refer only to physical capital, the denominator (total asset) should refer to the physical capital as well. If debts comes from balance sheets and refer to the overall fishing activity, the total assets should be derived from balance sheets as well.
- Balance sheets are considered the most reliable source of data for debts (MSs that derived the value of debts from questionnaires experienced a very poor quality of responses).
- The group agreed on debts defined as short term and long term liabilities both for processing and the fleet (as defined in article, 9, item C of the IV Council Directive 78/660/EEC).

ToR 6: As far as the processing and aquaculture sector (Annex X and XII require the same variables), the group recognised that definitions are missing for the following variables for which the following is recommended:
- subsidies: the group recognized that the note 1 of Appendix XII is clear in Commission Decision 949/2008 ("Includes direct payments. Excludes social benefit payments and indirect subsidies").
- other income: the group agreed to consider "other income" all the incomes that cannot be included in turnover or subsidies (= total income-turnover-subsidies).
- Net financial costs and Net extraordinary costs: the group agreed to take into account SGECA 10-03 recommendations, endorsed by STECF 10-03. Because most MSs use balance sheet to collect economic data for processing and aquaculture, the IV Council Directive 78/660/EEC could be used as reference.
  - Financial costs are defined in art. 23, item C.13 of the IV Council Directive 78/660/EEC, ("Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings").
  - Extraordinary costs are defined in art. 23, item 17, of the IV Council Directive 78/660/EEC ("Extraordinary charges").

2. Introduction

The *Workshop on calculating capital value using PIM and definition of DCF variables* was held in the Capitaneria di Porto of Napoli, Italy, from 13th to 17th June 2011.
The workshop costs were eligible under DCF funding. Participants were very pleased with the facilities offered by the *Capitaneria* and MIPAAF.

2.1   Background

The Workshop on calculating capital value using PIM and definition of DCF variables represents the first of three workshops that have been planned for 2011 aimed at exchanging experience and discussing a number of economic issues not specified by the DCF. In order to take into account this need, DGMARE informed SGECA 10-03 that the last liaison meeting (Oostende, 2010) approved the recommendations made by several RCMs to hold workshops on methodological issues for the collection of economic data. These workshops will be attended by national experts appointed by the National Correspondents. SGECA 10-03 was asked to define the TORs for these workshops.
STECF 11-02 has recommended that the conclusions of the present report, as well the other two, will be reviewed by STECF/EWG 11-18, dealing with data quality and harmonization.

2.2   Terms of Reference

The terms of reference (ToRs) of the *Workshop on calculating capital value using PIM and definition of DCF variables* have been defined by the SGECA 10-03 and endorsed by the STECF in its 2010 winter plenary. In detail, they are:

1. Present and discuss MS experiences in approaches and results from estimating fleet capital value.
2. Hold a training session on the application of the Perpetual Inventory Method
3. Compare price per capacity unit applied by different MS and assumptions made on the PIM method (age schedules, depreciation schemes, depreciation rates, etc.)
4. Propose best practices to be followed by MS in estimating capital value using PIM.
5. Discuss methodological problems faced by MS with respect to estimating unpaid labour and financial position, and propose definitions and best practices for estimation.
6. Propose clear definitions of those variables not clearly defined in the DCF.

The agenda of the workshop is included in Annex 1.

2.3 Participants

The workshop was attended by 18 participants. Delegates from 12 Member States were present. The following table gives a summary of participants by MS and by institutions.

Name	First name	Country	Institution
Anton	Eugen	Romania	National Institute for Marine Research and Development "Grigore Antipa"
Berkenhagen	Jörg	Germany	VTI-Federal Research Institute for Rural Areas, Forestry and Fisheries
Davidjuka	Irina	Latvia	Fish Resources Research Department
Gambino	Monica	Italy	Istituto di Ricerche Economiche per la Pesca e l'Acquacoltura, IREPA Onlus
Ioannou	Myrto	Cyprus	Department of Fisheries and Marine Research
Kuzebski	Emil	Poland	Sea Fisheries Institute
Linauskas	Andrius	Lithuania	Agricultural Information and Rural Business Centre
Linde	Jonathan	Sweden	Swedish Board of Fisheries
Malvarosa	Loretta	Italy	IREPA Onlus
Pokki	Heidi	Finland	Finnish Game and Fisheries Research Institute
Quillérou	Emmanuelle	France	IFREMER
Sabatella	Evelina	Italy	IREPA Onlus
Savilionis	Aleksandras	Lithuania	Agricultural Information and Rural Business Centre
Stroie	Constantin	Romania	National Agency for Fisheries and Aquaculture
Traguany	Jacques	France	Ministère de l'Agriculture, de l'Alimentation, de la Pêche, de la Ruralité et de l'Aménagement du Territoire
Urumov	Stoyan	Bulgaria	NAFA
Vassallo	Darcelle	Malta	Agriculture and Fisheries Regulation Department
Virtanen	Jarno	Finland	JRC

Loretta Malvarosa chaired the meeting. Contact details for each participants are given in Annex 2.

3. ToR 1: MS experiences in approaches and results from estimating fleet capital value

The first issue addressed by the workshop has been the estimation of the capital value and capital costs by MS. The DCF requires that the capital value of fishing fleets is estimated following the PIM methodology as proposed in the study No. FISH/2005/03.
A brief description of the methodology applied at MS level is given below in alphabetical order.
The section is completed by a summary table (Table 1)

BULGARIA
In Bulgaria the PIM method is not yet applied , but Bulgaria has tested the PIM and is ready to use it in the next data call.
The method has been tested. Capital value are derived from questionnaires. They ask the fishermen to give a value for their vessel (kind of replacement value) in 2010. They are divided by GT to estimate the price per capacity unit.
At the moment they are using the following assumptions:
1. Vessel composition: hull 60%, engine 30%, electronics 5%.
2. Depreciation rates: Hull – average 6%; Engine - average 15%. Electronics and other equipment are not depreciated, because very old.
3. When purchasing new electronics that are depreciated by 50%.

They have defined the price per capacity unit for all vessel segments. PCU is on average 1,500 €/GT. For vessels larger than 24 meter, PCU is 22,500 €/GT. These prices are taken from questionnaires.
Questionnaires cover more than 60% of the vessels. The value is updated annually.
Capital value based on historic prices will not be available. Depreciation costs will be based on the replacement capital value.
All assets are depreciated using a 10% rate which is an average of the depreciation rates of all the assets. The depreciation scheme is based on a linear approach .

CYPRUS

Cyprus calculates the depreciated replacement value and depreciated historical value. The insurance scheme is used as a cross check.
A survey was conducted in 2005 to measure the newly constructed vessels (census) and from 2006 and onwards the price index is used.
UEL (Useful Economic Life) of vessels is also needed for the calculation of depreciation.
Template for PIM is not used yet but the UEL was modified to be in accordance with the template.
Straight line method (SLM) is used considering the UEL (life time).
SLM=(value of the vessel-scrap value)/UEL.
Depreciation costs are based on the replacement value.

FINLAND

PIM method is not yet applied, because the method used previously (referred as 'Danish method') is very close to the PIM method. It is also assumed that the price/CU level in Finland and Denmark is very similar.
Value of the vessel is based on GT, kW, length and age of the vessel and these data are obtained from the vessel register. Value of the vessel is comprised of the value of the hull plus the value of the engine. Finland has used this method in the previous years and calculates the depreciated replacement value.
Finland has also tested the PIM method and is ready to use it from next data call on. Price per capacity unit is based on the book values of the vessels. Finland receives balance sheet data of around 300 coastal vessels (mainly <10m) annually. In 2009 data, there were around 150 fishermen that reported the book value of the vessel and had only one vessel registered. Balance sheet data is combined with

the vessel register data by vessel code. Then cumulated depreciation costs are calculated from the gross book value of the vessels. Cumulated depreciation costs are added to the gross book value to get historical values by vessel. Then heavy machinery producer price index is applied to get the replacement value of the total fleet with 2009 price level. Price per GT is then calculated from the replacement value. This price/GT is used to calculate the depreciated replacement value for the Finnish fleet.

Assumptions used in the PIM:

Depreciation rates applied: hull 7%, engine 25%, electronics 50% and other equipment 35%.

Vessel composition assumed: hull 46%, engine 25%, electronics 2% and other equipment 27%.

Renewal times: hull 25 years, engine 10 years, electronics 5 years and other equipment 7 years.

Problems faced in the estimation: It is assumed that the value of the vessel is recorded fully in the balance sheet the year it was built. This assumption is not always correct. There is no data collected so far on the composition of the value of the vessels in Finland. There is also a narrow market for the larger vessels. How to define the price/CU for these vessels?

FRANCE

PIM is not yet applied, but France has tested it and is ready to use it from next year on.

For the next data call the following methodology will possibly be applied:

1. for vessels less or equal to 5 years: insurance values, value of fixed assets (accounting value) and value of vessel when bought (direct survey) will be used as a basis for the calculation of both replacement and historical capital value.

2. for vessels older than 5 years and in the case of replacement value, there exists no appropriate proxy, while for historic value, the value of fixed assets (accounting value) and value of vessel when bought (direct survey) will be used.

Linear depreciation will be used using same rates and renewal times as in the template. Because of the reduced size of the sample the price per capacity unit will be calculated for four fleet segments. The price per capacity unit (based on length of vessels - metres) is based on a replacement value.

GERMANY

The price per capacity unit is estimated based upon the average from a number of ~ 10 prices of new built vessels (between 1999 and 2004) of different size and gear and adjustment by price index with respect to the year of construction.

A linear depreciation scheme has been applied for both replacement and historical value, and due to the lack of more detailed information, the shares of assets as well as the expected lifetime have been applied as provided in the Excel template.

The procedure was transferred into a SAS program which requires only the fleet register (containing data on capacity and year of construction) and the price index series as input. Shares and lifetimes as well as prices/CU can be easily adjusted.

Major difficulties:

- the price/CU is based upon a small sample only, which is moreover highly variable

- representative share ratios and lifetimes could not be derived from the data available.

ITALY:

Italy applies the PIM recommended by DCF.

The RINA construction index 1992 for wood steel and glass have been applied to estimate the price/CU (GTR). Determination of price/CU was made for vessels built in 1992 by fleet segments. Producer price indexes for heavy machinery is applied to get the replacement values.

General assumptions of the study are applied for the macro approach (replacement value) and the Italian fiscal rules for the micro approach (historical value).

The fleet composition varies according to fleet segments. On average is : hull 40%, engine 32%, electronics 5% and other equipment 22%.

Age schedule: hull never, engine 10 years, electronics 5, other equipment 7.

Depreciation: hull 7%, engine 25%, electronics 50%, other equipment 35%, degressive depreciation scheme applied for macro approach.

Depreciation: hull 12,5%; engine 31,5%; electronics 20%; other equipment 31,5%, linear depreciation scheme applied for the micro approach. Age schedule has been adjusted to fiscal rule within the micro approach.

Improvements are foreseen with regards to the price of capacity units as it is considered to be overestimated. Also depreciation rates of the general scheme are considered to be too high.

LATVIA

Latvia is not applying the PIM.

Capital costs for Latvian fishing fleet are received annually from Latvian Central Statistical Bureau (CSB). Data are aggregated by fleet segments to protect the confidentiality according to the Personal Data Protection Law. CSB collects the data for DCF quarterly using specific questionnaire form "1-Fishery". This form is obligatory filled by bookkeeper of each fishing firm according to the Latvian legislation. Bookkeepers fill the form according to the firm documentation. They apply degressive depreciation method and depreciation rates: 10% for hull, 20% for engine, 35% for electronics, and 20% for other equipment.

They can apply double rate and chose the depreciation period (month, quarter, and year). These rules are defined by Latvian legislation. Questionnaire form was especially created to receive economic variables for DCF. This approach allows getting the most qualitative information for DCF and there are 100 % of filled forms and 100 % for coverage rate for the all fishing fleet.

A pilot study was performed to reveal if it possible to receive the capital value from questionnaire form. It was planned to include depreciated historical value and depreciated replacement value in the 1-fishery-form.

Depreciated replacement value for Latvian fishing fleet was calculated for the first time in 2009.

The formula for the estimation is the same used for the calculation of the vessel scrapping compensation in the frame of Operational Programme of fleet reduction, according to the Council Regulation (EC) No 1198/2006 on the European Fisheries Fund; COMMISSION REGULATION (EC) No 498/2007 and EK Reg. 2772/1999.

The gross tonnage was used for the calculation of compensation. This method was used because in the Latvian case the scrapping value is deemed to be more close to the real vessels price and only few new vessels entered the fleet (the compensation is accorded only to vessels older than 10 years).

The Latvian delegate deems it is likely impossible to apply the PIM method and provide necessary calculation because very difficult to get basic statistical and requirement units for the vessel or company. One of the problems is the average age of fleet, which is 27 years. For the last 20 years Latvia had twice monetary system changes and vessels privatization process. The vessel values may be very different in each individual case.

LITHUANIA

Lithuania has been applying the PIM since 2009. In 2008 Lithuania conducted a pilot project for estimating capital value of fishing vessels.

Due to lack of data on building prices of vessels in Lithuania, prices per capacity were calculated on the basis of two approaches:

- the first one is calculating price per capacity using book values of purchased vessel, and is used for vessels with size greater than 20 metres. Book values of purchased vessels so not refer to the net depreciated historical values, they refer to values of ships bought buy companies some years ago (purchasing year and sum of a vessel is given). It should be noted, that these prices could also be interpreted as second hand prices at different years. These purchasing prices are

then multiplied by heavy machinery prices indexes, to recalculate theses prices to replacement prices at present year, and then divided by GT of the vessels.

- the second approach, for vessels under 20 metres, is based on Lithuanian pilot project on calculating capital value using PIM method. Prices per capacity are calculated based on a survey of second hand markets in Lithuania and nearby countries. The survey was made in 2008, so vessel values were recalculated by price index to replacement values, and then divided by GT of the vessels. This method was used for smaller vessels, because the reliability of data gathered from the currently used forms is very small.

The calculated prices per capacity were then used to calculate replacement capital value and historical capital value by using a given excel sheet apart from small differences:
for calculating both replacement and historical capital value, a linear depreciation scheme was used, based upon that in Lithuanian fiscal accounting, linear depreciation scheme is the most common one, and also is recommended by Lithuanian accounting tax laws. The renewal times of vessel parts, and the depreciation rate were chosen in accordance with Lithuanian account tax laws suggestions.
Although for data call the method also implies the usage of depreciation values calculated based on PIM method, MS Lithuania uses book value of depreciation value because calculated values greatly contradicts book value.

MALTA
Annual data for historic and replacement capital values is collected by means of a direct questionnaire as the fleet in Malta is characterised by a small-scale fishery and as a consequence, accounting practices and insurance values are very scarce. Values are separately requested for the vessel, engine, quota and other fishing rights, electronics, other equipment and gear. Historic capital values reflect the actual price paid for the asset when it was first acquired, while replacement capital values reflect the price that would have to be paid to acquire the same asset at present (refers to the reference year). Values for engine, electronic equipment, other equipment and gear include the purchase of assets (less the value of assets which are no longer utilised or were sold) from when the vessel was acquired up to one year before the actual reference year. Values for purchases of new assets acquired during the reference year are separately requested.
Depreciated values were calculated according to the approaches and rates proposed in the capital valuation study due to lack of national guidelines in this regard. The historic value derived from the questionnaire is depreciated using the micro approach rates (hull-2.5%, Engine-10%, Electronics-20%, other equipment-16%) by means of a linear function. The replacement value derived from the questionnaire is depreciated using the macro approach rates (hull-7%, Engine-25%, Electronics-50%, other equipment-35%) by means of a linear function. Depreciation cost is based on the replacement value.
The main problem encountered in relation to the PIM methodology was to find a correct way of how to apply the price per capacity unit derived from a sample survey to the total population. This was due to the fact that the PIM method is based on the assumption that capital value data must be collected by means of a census so as to cover the total population. Malta has discussed this problem during the workshop and will try to improve its methodology for calculating capital value based on the PIM method for future data calls.

POLAND
EU scrapping premiums (CR 2792/1999) are used as a proxy of capital value and used to answer to the data call. The reason is that the 2nd hand market is highly affected by decomissioning premiums.
Unlimited access to the decomissioning scheme money for all registered vessels.
For 16-29 years old vessels: value decreased by 1,5% ;
For vessels 30 and +: value decreased by 22,5%.
Depreciations costs are based on information from questionnaires (from vessel operators based on book values) and capital costs are calculated based on national 10 years bonds rate less inflation.

The main reasons for the PIM is not yet applied as recommended by DCF are:
- Poland has mostly very old vessels: mostly they are over 30 years old. It's not possible for the fishermen to give the book value of the vessel;
- No information on 2nd hand prices in Poland because fishermen don't want to give this information.

ROMANIA

Romania is not applying PIM yet because they have started the data collection in 2008.
Capital value is currently obtained from the balance sheets therefore based on historic prices. This includes value of assets in banks, money reserves, cash, buildings etc., not just capital value of the fleet and other. For this reasons is not comparable with other MSs capital value (only physical capital).
Depreciation is calculated on a linear basis according to National law. Renewal times: 12 years (wood boats), 60 years (buildings), 5 years (other equipment).
Response rate to the questionnaires is quite high amounting to 85-90%.
Main problems in applying the PIM:
- No insurance market for vessels yet in Romania to derive price/CU.
- Fishing sector still under development (small fleet employing around 300 fishermen, most vessels under 12 metres and older than 20 years.

SWEDEN

Price per capacity unit (PPCU) is derived from insurance values (current prices) obtained from probability sample survey.
The insurance values for all vessels is estimated by a linear regression model for 2 groups of vessels: >24m and <24m. Price per capacity unit is then calculated for 3 groups of vessels: 1) vessels>24m, 2) <24m and 3) passive gear. Price per capacity unit for year t is calculated using a polynomial regression. It is done annually. They use degressive depreciation.
Depreciation rates: hull 7%, engine 25%, electronics 25%, other 25%
Government treasury bill of 12 months 0,57% used for interest costs.
Main problems:
- Uncertainty in calculating PPC. Because it is based on estimation of both insurance and and PPC, the estimated values have a double bias.
- Small segments in the Swedish fishing fleet. Clustering necessary.

Table 1 – Application of the PIM methods by MS

Member State	Application of PIM method: Yes/No?	If PIM is not applied, explain the main reasons	If the PIM method is applied: Are depreciation costs based on replacement or historical value?
Bulgaria	No	First answer to data call 2010. The method has been tested and is ready for use in the next data call	
Cyprus	Yes		Replacement value.
Finland	No	PIM method is not yet applied, because the method used previously (referred as	

Member State	Application of PIM method: Yes/No?	If PIM is not applied, explain the main reasons	If the PIM method is applied: Are depreciation costs based on replacement or historical value?
		'Danish method') is very close to the PIM method.	
France	No	PIM is not yet applied, but is currently under testing . it will be applied from next year on.	
Germany	Yes		Replacement value.
Italy	Yes		Replacement value.
Latvia	No	Difficulties in getting basic statistics to calculate the price/CU for the vessel or company.	
Lithuania	Yes		Historical value (based on book value-residual value that is original value less depreciation). Annual depreciation costs are not calculated according to the PIM method.
Malta	No	Difficulties to estimate the price/CU for the whole fleet.	
Poland	No	Difficulties in getting basic statistics to calculate the price/CU for the vessel or company.	
Romania	No	First answer to data call 2010.	
Sweden	Yes		Replacement values. A degressive depreciation is used based on the macro approach as illustrated in the template however the rates have been changed.

4. Tor 2: Training session on the application of the Perpetual Inventory Method

A training (practical) session on the application of the PIM has been undertaken during the workshop in order to illustrate the concrete implementation of the method and to discuss practical problems incurred by MSs.

The template model, originally developed in Excel, has been illustrated. It consists of two different sheets, which allow calculating the gross and depreciated capital value and capital costs using the replacement or the historical value.

The template requires the input of specific depreciation rates, shares of assets on the total value of the vessel and the depreciation scheme (renewal time) per asset according to the Member States' circumstances. It is crucial that these input data are appropriate when calculating the capital value or the depreciation.

Some participants pointed out that investments are closely connected with depreciation, i.e. once an asset is fully depreciated, it will be replaced and thus an investment takes place.

According to DCF legislation (2010/93/EU) depreciation has to be derived through the application of the PIM. It would then be consequent to derive investments in physical capital from PIM results, too. That way PIM would provide three different DCF variables/variable groups:

- value of physical capital,
- annual depreciation
- investments in physical capital.

However, it is a crucial prerequisite that all input parameters for the PIM are appropriately quantified. Anyway, the methodology to derive the value of yearly investments (required by DCF) from the PIM has not yet been tested.

It's important to verify the assumptions applied by MSs. Each MS should carry out investigations to define proper depreciation rates (by type of assets), the assets' service life, the vessel composition (share of each asset on the total value of the vessel) and, generally, all the assumptions on which the template is built.

There was a discussion with regard to the price indices used in the sheet for the estimation of the capital value at historical price. The group noted that the price indices used to adjust the price per CU according to the renewal times are not updated in a proper way because the price index does not change in the first years (equal to the number of years in the service life of the asset).

The presentation of the template also highlighted that if there are no vessels for some vintages, the renewal schedules as well as price indexes should be adapted accordingly.

A new version including example of adjustments (e.g. for some fleet segments) was presented and circulated among participants.

5. ToR 4: Propose best practices to be followed by MS in estimating capital value using PIM

5.1 General issues related to the application of the PIM method

An overview of the PIM method and applications of the PIM to fishing fleets in practice were presented in order to illustrate the framework and possible applications (copies of the presentations are provided in Annexes 3 and 4).

The group considered that the EC study No. FISH/2005/03 gives a general framework and the input variables have to be adjusted according to the peculiarities of national fleet segments.

The PIM method provides an estimate of fixed capital stocks. Intangible assets should be separated from the value of capital. This exercise could be a difficult one in case of non-transferable fishing rights. The group stated that no standard method has been proposed so far to separate tangible from intangible assets.

The group considered that some of the difficulties faced by MS in applying the PIM method are due to uncertain and confusing terminologies used in the EC study.

The group discussed in depth the concepts of historical/current/replacement values. The group considered that the word "replacement" could lead to some misleading interpretation of the capital value and therefore suggested to use the word "current" to refer to capital stock valued at the prices of the current (or most recent) year.

In particular, capital assets can be valued on the basis of three different prices:

−**historical price**: the assets are valued at the prices at which they were originally acquired. The term *acquisition price* is used as a synonym for historical price.

−**current price**: the assets are valued at the prices of the current year. Valuation at current price is sometimes referred to as valuation at current "replacement" value, but the qualifier "replacement" raises questions about what exactly is being replaced. For this reason the word "current" should be preferred to "replacement".

−**constant price**: the assets are valued at the prices of a selected year. The evaluation at constant price of the current year coincides with the evaluation at current price.

Price indices are required for valuation at **current price** as well as valuation at **constant price**.

The terms of net/gross/depreciated have been also discussed as they could lead to wrong interpretation of final estimates. Depreciated value (also referred as net value) is given by the gross value minus the cumulated depreciation costs. In the present report net will be used alternatively to depreciated.

The meaning and the use of historical capital value and current capital value has also been discussed. Both values are requested by the DCF. Capital stocks valued at historical prices cannot be compared with national accounting or other economic statistics that are expressed at prices of a single period (OECD manual, 2009). Historical valuation implies that different vintages cannot be aggregated because each is on a different price basis. The disadvantages of using historical prices are due to the fact that assets which have been acquired at different dates are being valued at different prices so that when prices are rising/falling assets acquired more recently are implicitly given a higher/lower weight than those acquired in earlier periods.

Thorough discussion was also addressed to the depreciation scheme (linear or degressive) that should be applied by MS. DCF requires the estimation of depreciation costs based on the PIM method but does not indicate which scheme should be applied. This leads to non comparability of data because of different depreciation schemes lead to substantially different estimations of depreciation costs. The group recommended that MS apply the same depreciation scheme so as to provide homogenous and therefore comparable results.

The group suggested to apply the degressive depreciation scheme, as already suggested by STECF/SGECA that observed that OECD manual 2009 seems to be in favour of the geometric approach ("it has been used in a large number of economic studies and is also gradually adopted by statistical agencies").

In addition, the group considered that the degressive method seems more appropriate. Some works aiming to measure the influence of vessel features on the vessel price on the second market (Guyader and Daurès, 2003; Daurès et al., 2006), seem in favor of degressive depreciation rates: at the beginning of the vessel life, the depreciation rate of tangible capital should be higher than over the rest of its life.

In order to get comparable data on depreciation costs, it is also essential that depreciation is calculated on the same kind of capital value (that is historical or current). The group is aware that the historical value as a basis of estimation leads to lower depreciation costs compared to the current value. The group also considered that depreciation costs on current prices would bias the result as current prices reflect also inflation price increases and not only the wear and tear of the asset as related to the actual price paid. However, it has been considered that the current value is the proper basis for depreciation because it better reflects the estimated market value.

5.2   Best practices

Assumptions to be checked and adapted

For the calculation of capital stock and consumption according to PIM, several assumptions need to be made and certain data requirement need to be met. The assumptions made in the study No. FISH/2005/03 and presented in the spreadsheet represent only a general scheme in order to provide a calculation tool.

This general scheme should be changed and calibrated according to the specific needs of each country and to other empirical information, for example collected from Company accounts, Statistical surveys, Expert advice, European System of Integrated Economic Accounts (ESA).

The required input parameters are:
- Depreciation rates (both for the linear and the degressive scheme)
- Share of capital components in total value
- Life time of each asset

Several variables (investment, depreciation, capital cost, opportunity cost) are closely linked to the capital value. Therefore the input parameters (i.e. depreciation rates, lifetime, price/CU) have to be very precisely adjusted e.g. to observed investment activities of vessel owners. The calculation of the capital value has to deliver the correct investment and depreciation values, as any discrepancy between observed and calculated investment or depreciation data causes a bias and will lead to wrong information on the economic performance of the fleets.

As a consequence it can be concluded that input variables (price per capacity unit, depreciation rates - both for the linear and the degressive scheme -, share of capital components in total value, life time of each asset) have to be determined and updated in regular intervals.

Information on the expected service life of an asset can be derived from three possible sources:
- depreciation allowances for income tax purposes,
- business accounting practices,
- direct observation of the interval between the date of installation and the date of final retirement.

Each of the methods has its advantages and its drawbacks.

In the absence of information from direct observation, most countries use fiscal data to approximate the service life. Whenever information is absent, data for comparable industries and/or types of assets might be used; in addition, some expert knowledge may be gathered.

Composition of the national fleets and all distinguished DCF segments by age can be drawn from the fleet registers. For each fleet segment it is possible to order the fleet by year of construction and to update the values of each 'vintage' (year class) of vessels.

Fleets can be measured at different points in time over the year. The group suggested that valuation of capital should consider all fishing vessels in the vessel register during the reference year, (in accordance with STECF July 2010 recommendation referred to the collection of economic and transversal variables) rather than collecting data only on vessels in the fleet register on the 1st of January (as requested in the DCF).

Estimation of the price per capacity unit

A crucial point in applying the PIM method is the estimation of the price per capacity unit (PCU

Determination of the price per capacity units depends on the availability of the data and the correctness of its interpretation. For the determination of the PCU, as for the other assumptions applied for the implementation of the PIM, it is essential a description in detail in terms of available data (its representativeness), its meaning, concepts behind estimation, estimated relations (incl. R^2, etc.), applied series of indices and specification of assumptions.

The group discussed the application of the procedure for interpretation and estimation of prices per capacity unit reported in the figure 1.

On the basis of the experiences presented by MS in the workshops and on the basis of the case studies described in the capital study, the group developed a hierarchical order of preference for input data for the procedure as described in Figure 1[1]. This approach considers the characteristics of the possible value indicators and suggests to take into account the indicators in the following order:

1. Price of new constructed vessels;
2. 2nd hand prices or insurance values of the current year;
3. Book value;
4. Scrapping value;
5. Other values.

Price of new constructed vessels provides the value of capital at current price. This method is to be preferred because it is not biased by any kind of assumptions. This information could be derived by specific surveys on vessels' owners or interviews at shipyards. *The components (hull, engine, electronics, other equipment) could be valuated separately.*

Second hand prices provide an estimate of the depreciated value at historical prices. This information could be derived through specific surveys on vessel owners or interviews with ship brokers. This estimation needs to be completed with accumulated depreciation costs in order to get the gross value (as explained below). This indicator could be affected by inclusion of intangibles, market conditions and decommissioning policies.

Insurance value of the current year provides an estimate of the value of capital at current prices. This information could be derived by interviews with vessel owners or insurance companies. This estimate needs to be completed with accumulated depreciation costs in order to get the gross value (as explained below).

Book value provides the depreciated value of capital at acquisition prices. Book value is included in the balance sheet of fishing companies. It should be verified that this value refers to one single vessel.

The group discussed that book values of "recently" built vessels would provide a less biased information but it has been also considered that average age of European fleets is very high. Inclusion of only more recent vessels will reduce the number of observations to a very low number. However,

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[1] The figure has been extracted from the report of the study No. FISH/2005/03. However some terms has been adjusted following the conclusions of the group.

the group suggested to exclude very old vessels. This estimation needs to be completed with accumulated depreciation costs in order to get the gross value (as explained below).

If the vessel is rather new and no assets have been replaced yet, the price of a newly constructed vessel can easily be derived from the book value, given that the depreciation scheme is known. In that case the book value is to be regarded preferable to the insurance value, as it allows to directly derive the new price.

Scrapping value provides an estimate for the depreciated value of capital at historical prices. This value can be used in case other indicators are not available. This information is a kind of a bottom price of the second hand market. If it is based on the scales and rates of assistance COUNCIL REGULATION (EC) No 2792/1999, this estimation does not consider the value of vessels younger than 10 years. Furthermore, it needs to be completed with accumulated depreciation costs in order to get the gross value.

Other values could be used in case previous indicators cannot be observed. In some cases, specific inquiries are used to ask for an estimate of the current value of a vessel with certain characteristics. These are some kind of hedonistic values that maybe very subjective. Particular attention has to be paid in using this kind of information in order to get the price per capacity unit.

Figure 1. Procedure for interpretation and estimation of prices per capacity unit

What value indicators can be collected / observed?

Insurance premiums | Historical value | Book value | 2nd hand values

Insurance values

Do the data refer to the tangible assets only or do they also contain value of intangibles?

Contain intangibles

Estimate / separate tangible and intangible value, describe approach

Value of tangible (vessel) only

What does the available value per vessel represent?

Current value (RV) (3) | Historical value (HV) (4) | Book value (2) | Other

Estimate total depreciation to determine historical value

Estimate RV and /or HV, describe approach

Estimate current price / cu

Estimate series of historical prices / cu

Determine series of historical prices/cu | Price index series (1) | Recent historical price = current price./cu

Follow columns (RV) or (HV)

Other additional issues to be considered are:
- It should be determined whether the observed value refers only to the physical vessel (plus equipment, etc.) or whether it also contains implicitly values of intangibles like licenses, quotas or permits. In case that intangibles are part of the asset value, it is necessary to separate them from the tangibles so that the determined value per capacity unit refers exclusively to physical assets.

- A price per capacity unit should be estimated for each separate component of the vessel (hull, engine, electronics, other equipment). However, when this is not feasible, the share in total investment of each component should be estimated and used as a general assumption of the model

How to derive gross value from depreciated value

In most cases, observable indicators provide (net) depreciated indicators. In order to get an estimate of price per capacity unit an gross value should be calculated.

In case of book value, additional information from the balance sheet documents could provide a direct and precise information on cumulated depreciation costs. In this case, the gross value can be obtained by simply adding cumulated depreciation costs to the book value.

However, depreciation costs in most cases cannot be easily derived by balance sheets where depreciation costs of several items are aggregated. In these cases, cumulated depreciation costs need to be estimated. This implies to make some assumptions on the depreciation scheme and the depreciation rates.

Using the PIM allows to directly derive the gross value of the asset. It could be estimated as follow:

In case of a degressive depreciation scheme:

$$\text{(Historical/Current) Gross value} = \frac{\text{(Historical/Current) Net Value}}{(1 - depreciation\ rate)^t}$$

In case of a linear depreciation scheme:

$$\text{(Historical/Replacement) Gross value} = \frac{\text{(Historical/Replacement) Net Value}}{1 - depreciation\ rate \times t}$$

Where *t* is the age of the vessel.

Once is clear if the value used for estimation is gross or depreciated, the calculation of the PCU can be made by mean of the following steps:

Step by step estimation of the PCU

Case 1: observed value = depreciated historical value
Step 1   Observed depreciated historical value (e.g book value)
Step 2   Estimation of cumulated depreciation costs (estimated as above)
Step 3   Calculation of gross historical value (observed depreciated historical value + cumulated depreciation costs)
Step 4   Identification of a price index (e.g. heavy machinery index)
Step 5   Calculation of gross current value (price index * gross historical value)
Step 6   Calculation of PCU (gross current value/capacity), where capacity can be expressed in terms of GT/GRT, kW or metres

Case 2: observed value = gross historical value
Step 1   Observed gross historical value (e.g book value)
Step 2   Identification of a price index (e.g heavy machinery index)
Step 3   Calculation of gross current value (price index * gross historical value)
Step 4   Calculation of PCU (gross current value/capacity), where capacity can be expressed in terms of GT/GRT, kW or metres

Case 3: observed value = depreciated current value

Step 1   Observed depreciated current value (e.g book value)
Step 2   Estimation of cumulated depreciation costs (estimated as above)
Step 3   Calculation of gross current value (observed depreciated current value + cumulated depreciation costs)
Step 4   Calculation of PCU (gross current value/capacity), where capacity can be expressed in terms of GT/GRT, kW or metres

6. ToR 3: Comparison of price per capacity unit applied by different MS and assumptions made on the PIM method

An exercise was carried out during the workshop to compare the results of the application of the PIM method as proposed in the template model in Excel.

Table 2 summarizes the approach followed by MS to estimate prices per capacity units. In the German exercise, cost per capacity unit was derived by price of 10 newly constructed vessels (between 10-18m) and then adjusted to current prices using price indices in order to obtain an estimate of the gross current value.

In most cases, a proxy of the historical value was applies. In the Lithuanian exercise second hand market values were used for vessels from 0-18m and book values for vessels 20-40m. Both values refer to 2009 and for this reason are assumed to be a gross estimate of capital. In the Swedish exercise, price per capacity unit is derived from insurance values (current prices) obtained from a probability sample survey. In other three cases (Finland, Lithuanian vessels 20-40m, French vessels larger than 5 metres), the book value of the vessel derived from the fishers' accounts was used to estimate the price per capacity unit.

Poland and Latvia, in absence of other reliable statistics, derived price per capacity units from scrapping premiums. However, these two values are not comparable between them because in the Polish exercise, calculation was simply based on scrapping premium value offered by government for fishing vessels owners willing to withdraw vessel in 2009. Defined by EC Regulation 2792/1999, the values consider premium rates plus a 10% were used without considering the depreciation.

Estimates of gross values at current prices based on questionnaire survey were used in the Bulgarian case and for French vessels less than 5 meters. Italy and Malta presented estimates of gross historical value respectively derived from the Italian Naval Register (RINA) construction index 1992 and from direct surveys.

Finally, Romania and Cyprus did not furnish any estimates of price per capacity unit.

Table 2: MS Approach in the comparative exercise

MS	VALUES	MEANING
GERMANY	Price of new constructed vessels	Gross value of capital at current price= REPLACEMENT
LITHUANIA (vessels from 0-18m)	2nd hand prices	Depreciated value of capital at historical prices=HISTORICAL
SWEDEN	Insurance values	Depreciated value of capital at historical prices=HISTORICAL
FINLAND, LITHUANIA (vessels from 20-40m, 2010), FRANCE	Book value	Depreciated value of capital at historical prices=HISTORICAL
POLAND, LATVIA	Scrapping value	Depreciated value of capital at historical prices=HISTORICAL
BULGARIA, FRANCE(vessels < 5m)	Hedonistic value collected from questionnaires (*how much a vessel like yours would cost?*)	Gross value of capital at current price= REPLACEMENT
MALTA	Hedonistic value collected from questionnaires	Gross Historical value=HISTORICAL
ITALY	Construction index	Gross Historical value=HISTORICAL

Table 3 shows prices per Gross Tonnage per MS as applied in the comparative exercise. As expected, the observed prices varied considerably, not only between MS, but also between segments. However,

the exercise was based on available data, which in most cases were not based on the PIM method and the approaches used are not always comparable or consistent. French prices were excluded from the table because they were based on length of vessels and hence they are not comparable with values estimated by the other Member States.

Table 3: MS prices per Gross Tonnage

MS	Segment	LOA class	Reference year	Price/GT (€)
DEU	Total fleet	TOTAL	2009	9,600
LT	Drift and/or fixed netters	VL0018	2010	6,127
LT	Drift and/or fixed netters	VL2440	2010	1,434
LT	Demersal trawlers and/or demersal seiners	VL2440	2010	1,230
LT	Midwater otter trawlers	VL2440	2010	1,180
LT	Pelagic trawlers	VL40XX	2010	673
SWE		<24m (except passive)	2009	12,299
SWE		>24m (except passive)	2009	12,397
SWE	Passive gears		2009	21,417
FIN	Passive gears	VL0010	2009	7,721
PL	Passive gears for vessels smaller than 12 meters	VL0010	2009	12,056
PL	Passive gears for vessels smaller than 12 meters	VL1012	2009	10,965
PL	Drift nets and fixed nets	VL1218	2009	7,536
PL	Demersal trawl and demersal seiner	VL1218	2009	7,595
PL	Gears using hooks	VL1218	2009	7,104
PL	Demersal trawl and demersal seiner	VL1824	2009	5,959
PL	Demersal trawl and demersal seiner	VL2440	2009	5,180
PL	Midwater trawls	VL2440	2009	4,714
PL	Total fleet	TOTAL	2009	6,503
LVA	Drift nets and fixed nets	VL2440	2009	4,179
LVA	Polyvalent passive gears	VL0010	2009	12,910
LVA	Midwater trawls	VL1218	2009	5,838
LVA	Midwater trawls	VL2440	2009	4,063
BG		VL0006	2010	1,145
BG		VL0612	2010	1,314
BG		VL1218	2010	2,014
BG		VL1824	2010	1,467
BG		VL2440	2010	22,538
IT	Small scale		2008	17,659
IT	Bottom trawlers		2008	15,150
IT	Purse seines		2008	14,558
IT	Pelagic pair trawlers		2008	13,480
IT	Polyvalent passive gears		2008	17,760

IT	Beam trawlers		2008	15,150
IT	Combining mobile And polyvalent passive gears			11,029
IT	Long-lines		2008	14,951
IT	Dredges		2008	18,067
IT	Non-operative		2008	15,311
MLT	Drift nets and fixed nets	VL0006	2010	17,425
MLT	Pots and traps	VL0006	2010	19,764
MLT	Gears using hooks	VL0006	2010	11,910
MLT	Polyvalent passive gears	VL0006	2010	14,876
MLT	Combining mobile and passive gears	VL0006	2010	21,450
MLT	Non-operative	VL0006	2010	8,880
MLT	Other mobile gears	VL0612	2010	9,852
MLT	Drift nets and fixed nets	VL0612	2010	6,924
MLT	Pots and traps	VL0612	2010	18,494
MLT	Gears using hooks	VL0612	2010	9,469
MLT	Polyvalent passive gears	VL0612	2010	8,983
MLT	Combining mobile and passive gears	VL0612	2010	18,841
MLT	Non-operative	VL0612	2010	4,939
MLT	Other mobile gears	VL1218	2010	6,783
MLT	Gears using hooks	VL1218	2010	7,116
MLT	Non-operative	VL1218	2010	5,376
MLT	Demersal trawl and demersal seiner	VL1824	2010	3,022
MLT	Gears using hooks	VL1824	2010	6,276
MLT	Combining mobile and passive gears	VL1824	2010	3,424
MLT	Non-operative	VL1824	2010	2,350
MLT	Non-operative	VL2440	2010	1,145

The main problems encountered in this comparative exercise is the non-homogeneity of presented values: some are gross values, others are depreciated values. Moreover, not all MS applied the PIM method and, in some cases, the estimated values are based on very limited data.

For macro analysis, most MS followed the general assumptions proposed in the template, which applies a degressive depreciation function and it is assumed that engine is renovated every 10 years, electronics every 5 years, other equipment every 7 years and hull never. The share of each asset item in the total vessel price is 60% for hull, 20% for the engine and 10% for both electronica and other equipment. The rentals expected in future periods are discounting using a discount rate, which is the interest rate on long terms bond.

For micro (fiscal) approach it was recommended to use depreciation schedules permitted by the national tax laws. This will be usually a linear function, which implies the following annual depreciation rate applied to the historical value of the asset. In case of the hull a scrap value of 2.5-5% of the historical price can be assumed after 25 years. For the EEO (Engine, Electronics and Other) the scrap value is assumed zero.

Table 4: General assumptions of Macro approach

	Depreciation rate	Renovation years	Share in Total Investments
Hull	7%	never	60%
Engine	25%	10	20%
Electronics	50%	5	10%
Other equipment	35%	7	10%
Government bonds			

Table 5: General assumptions of Micro approach

	Fiscal rate -Linear	Renovation years	Share in Total Investment
Hull	4%	25	60%
Engine	10%	10	20%
Electronics	20%	5	10%
Other equipment	16%	7	10%
Rest value hull	2.5%		
Market rate for loans			
Loans as % of total capital	50%		

In some cases, as for Germany, a linear depreciation scheme was applied for both macro end micro approaches using the same shares as provided in the template due to no evidence of better rates. Renewal times used are same as the ones which are provided in the template because it was not possible to derive meaningful data from available data.

For Bulgaria, the depreciation scheme is based on a linear approach based on the replacement (now current) capital value. All assets were depreciated using a 10% rate which is an average of the depreciation rates of all the assets.

For Poland, depreciations costs were based on information from questionnaires (from vessel operators based on book values) and capital costs are calculated based on national 10 years bonds rate less inflation.

The lifetimes and depreciation rates are also problematic to use. In this analysis, these have been fixed at some reasonable level. However, in future analysis is necessary to investigate these further in order to either verify these or come up with "more correct" values. Only one country, Italy, changed some assumptions such those related to the composition of investments by group of assets types. In the Italian exercise, in fact, the share in total investments was derived from a survey and was differentiated by main sub segment.

The present exercise allowed to make some considerations about this approach, which is simple to use and requires a moderate level of information. However, there are discrepancies amongst MS because of the different ways the values are produced.

Prices of new vessels are stated to be the best basis for the determination of the capital value. However, only few numbers are available and are often more diversified with respect to size and type of vessel.

Using other methods will increase the number of available data, but will also increase the uncertainty. For instance, it is difficult to derive the pure physical value of the vessel. Collecting information for vessels already constructed is problematic for several reasons including that the vessel may have had new owners, been bought abroad, be so old that nobody knows this etc. Other information related to insurance values or book values are not available for all fleet segments. Therefore the basis of highly reliable data is very limited. A low number of data does not allow a thorough statistical analysis or is unlikely to be representative.

Several variables (investment, depreciation, capital cost, opportunity cost) are closely linked to the capital value. Therefore the input parameters (i.e. depreciation rates, lifetime, price/CU) have to be very precisely adjusted e.g. to observe investment activities of vessel owners. The calculation of the capital value has to deliver the correct investment and depreciation values, as any discrepancy between observed and calculated investment or depreciation data causes a bias and will lead to wrong information on the economic performance of the fleets. As a consequence it can be concluded that input variables such as asset lifetime, total share, price/CU have to be determined in regular intervals in order to obtain some more precise figures, which can be used in future calculations.

The issue of interest rates to determine capital cost (opportunity costs) has not been discussed in detail because DCF does not require any more this variable. The calculation of opportunity costs is an issue already discusses by SCEGA for the AER. For the AER opportunity costs are calculated by mean of a real interest rate (in order to take into account inflation). Someone considered that applying rates of governmental bonds can lead to unrealistic results (e.g. current situation in Greece).

The possibility to use an homogeneous price/CU for sake of comparability was also discussed by the group. The group recognized that even if EU is common market, vessel can have very different price according to different areas because of very different standard of living (some countries, e.g. Romania, Bulgaria, have lower income per capita if compared with the rest of EU).

The group concluded that MS should try, in a first phase, to get a national price/CU on a self-basis. This price should reflect as close as possible national fleet peculiarities. The possibility to define a price/CU at regional level was also considered and deemed to be likely. However, the group agreed that after a first application of the PIM at national level, the possibility to get a regional price /CU could be discussed during RCMs.

7. ToR 5: Discuss methodological problems faced by MS with respect to estimating unpaid labour and financial position, and propose definitions and best practices for estimation.

Term of reference 5 (see p. 3) was addressed by the group by having a separate discussion on the two different issues: a) imputed value of unpaid labour and b) financial position.

7.1 Unpaid labour

The issue of the estimation of the imputed value of unpaid labour was firstly addressed with a presentation (by the chair) on the requirements of DCF (in some case, missing definitions) and on discussion on these variables (indicators) raised in previous *fora* (STECF/SGECA and RCM meetings). A copy of the presentation is provided in Annex 5.

The discussion addressed the issue of the unpaid labour both for the fleet and for the processing sector.

As far as the DCF, it states that MSs should provide a description of the methodology applied for the estimation in their NPs. DCF gives a definition of imputed value of unpaid labour in for the fleet referring to the SBS 13 32 0 (general reference to wage and salaries). It also provide an example, in note 4 of Appendix VI (List of economic variables for the fleet) where a reference to the labour of the vessel's owner is given.

As far as the processing sector, the definition of the imputed value of the unpaid labour is missing

Taking into account difficulties encountered by MS in estimating this variable (recognized by SGECA 10-03 and STECF EWG 11-03) the workshop was asked to reply to the need of having clear definitions and best practices for MS.

Before having a general discussion, the group agreed to have a brief illustration, by each MS delegate, on the state of the art as far as the estimation of the imputed value of unpaid labour at national level. Details are given below.

Bulgaria: value of unpaid FTE derived directly from questionnaires, in case of no response, minimum wage (240 Euro) is applied.

Cyprus: Small Scale fisheries – each owner is considered for unpaid labour, assistants get half the average wage because based on survey they approximate work half of the time of owners. Polyvalent vessels and Trawlers: unpaid labour refers usually to owners, annual wage estimated as average salary of crew member for each specific job performed.

Finland: average FTE wage determined per company, multiplied by unpaid FTE per company (paid and unpaid FTE is known); for companies without paid FTE, unpaid labour is estimated based upon information on FTE salaries within the fishing sector.

France: no distinction between paid and unpaid labour.

Germany: based upon the average annual gross income of a full-time employee in the industrial or service sector (provided by German Fed. Statistics Office) as FTE baseline. Unpaid labour is only estimated for vessels < 30 m, as larger vessels belong to companies (e.g. ltd.) and have no unpaid crew member, according to interviews. The average annual wage is adjusted according to the days at sea of the vessel and to the total revenue (the value of labour increases with effort and with revenue).

Italy: no distinction between paid and unpaid is given at the moment. As far as the fleet is concerned, the imputed value of unpaid labour is estimated and included in the total labour costs. The estimation procedure is based on calculation of labour costs by multiplying the average remuneration of onboard workers (national official tables) for the number of people working onboard (obtained by a survey). In asking how many people work onboard it is not asked to distinguish by paid and unpaid people (e.g. the owner). A study on how to separate the value of the unpaid labour is now in progress (e.g. unpaid labour is relevant in small scale fishery; it is possible to estimate it by taking into account a number of unpaid persons equal to the number of small scale vessels – 1 vessel =1 owner=1 unpaid person) and use the average remuneration to obtain the total value). As far as the processing sector, at the moment no estimation is done because the population covered by the survey exclude the smaller enterprises where, it is assumed that that the unpaid labour is more relevant. In next years all the population will be covered and a method to estimate the value of the unpaid labour will be defined.

Latvia: number of unpaid persons * average wage

Lithuania: multiplication of number of unpaid persons with the average wage in fisheries.

Malta: number of hours * proposed wage per hour, questionnaire.

Poland: no estimation of value of unpaid labour

Romania: small scale fisheries only, based on days at sea and additional days related to fisheries, minimum salary at national level.

Sweden: number of full time equivalent; imputed value of unpaid labour = FTE * yearly minimum wage – labour cost from tax declaration. FTE estimated as share of days at sea (6 hrs/DAS for passive, 12 hrs/DAS for active gear). As far as the processing: only for companies with zero employees, applying average wage in that sector.

The group agreed that the variable imputed value of unpaid labour should include the labour costs of all persons delivering unpaid labour.

It was recognized that the reference to SBS 13 32 0 in the regulation is misleading and should therefore be deleted (reference to wage and salaries). Really, the difference between SBS 13 31 0 (personnel costs), recalled for "wages and salaries of crew" in annex VI of Reg. EC 949/2008, and SBS 13 32 0, recalled wrongly in the same annex for "the imputed value of unpaid labour", is in the social security costs (13 31 0 = 13 32 0 + social security costs).

Social security expenses of owner (when he can be considered unpaid, i.e. not in the payroll) should be included in personnel costs (paid labour).

The group recognized that it is unclear why a distinction has to be made between paid and unpaid labour (why this distinction has been included in the past revision of the regulation?).

For sake of clarification the group recommends that the names of the variables should be changed into "paid labour" (ex Wages and salaries of crew) and "unpaid labour" (ex Imputed value of unpaid labour, being aware that in estimating labour costs people working **only** on shore should be excluded.

Based on the different experiences by MSs, the group also agreed on suggesting a best practice for the estimation of the imputed value of the unpaid labour.

The estimation of the imputed value of the unpaid labour can be made by the following steps:

1. estimation of paid and unpaid FTE;
2. definition of an average remuneration per paid FTE (e.g. average wage by fleet segment/company, national average wage, minimum national wage, etc…). The group considered that it is premature to decide, at the moment, which is the better average wage to use);
3. calculation of imputed value of unpaid labour =: unpaid FTE * (average remuneration per paid FTE).

7.2 Financial position

The estimation of the financial position ratio was firstly addressed, as for previous ToRs, with a presentation (by the chair) on the requirements of DCF (in some case, missing definitions) and on discussion on these variables (indicators) raised in previous *fora* (STECF/SGECA and RCM meetings). A copy of the presentation is provided in Annex 6.

The financial position ratio is required by Annex VI of Reg. EC 949/2008 for the fleet. The group recognized that a specification for the ratio is provided in the above Annex (debt/asset ratio) but any specific definition for both the terms of the ratio is given. There is only a note to Appendix VI (note 13) that further specify the financial position ratio stating the ratio can be regarded as "% debt in relation to total capital value (as defined above)", in this referring to the estimation of the capital value by mean of the PIM method (note 9 of the same Annex).

The group considered that, since financial position is a ratio, debt and assets should come from sources that are consistent with each other. PIM includes only tangible assets and not intangible assets as in the balance sheet (the most used source for getting the value of debts). If debt comes from balance sheet and assets from PIM method it will might give an inconsistent figure for the financial position.

After a general discussion and giving recommendations, the group agreed to have a brief illustration, by each MS delegate, on the state of the art as far as the estimation of this variable, with a particular focus on the consistency of the two terms of the ratio Details are given below.

MS	Debt	Assets	Consistent
Bulgaria	Survey	Survey	Yes
Cyprus	Survey Balance (only trawlers[2])	PIM (only trawlers)	No (semi)
Finland	Balance Sheet/survey	Balance sheet/survey	Yes
France	Balance sheet(2/3) Survey (1/3)	Balance sheet(2/3) Survey (1/3)	Yes

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[2] *Small scale fishery & polyvalent vessels: based on questionnaires thus, the validity of the data is questioned*

Germany	Balance Sheet	PIM (historical)	No (semi)
Italy	Balance Sheet	Balance Sheet	Yes
Latvia	N/A	N/A	
Lithuania	Balance Sheet	Balance Sheet	Yes
Malta	Survey	Survey	Yes
Poland	Survey	Survey	Yes
Romania	Balance sheet (only for companies)	Balance sheet (only for companies)	Semi
Sweden	Balance Sheet	PIM (historical)	No (semi)

The definition of debts (usually used for calculating the financial position ratio) is missing also for the processing sector (Appendix XII of Reg. EC 949/2008).
Hence, the group agreed on the following recommendations:

1. It is essential the two item of the ratio (debts and total asset) should be consistent. For example, if debts refer only to physical capital, the denominator (total asset) should refer to the physical capital as well. If debts comes from balance sheets and refer to the overall fishing activity, the total assets should be derived from balance sheets as well.
2. Balance sheets are considered the most reliable source of data for debts (MSs that derived the value of debts from questionnaires experienced a very poor quality of responses).
3. As recommended by STECF EWG 11-18, debts should be regarded as short term and long term debts (as defined in article, 9, item C of the IV Council Directive 78/660/EEC) instead of short and long term liabilities, as originally suggested (as the latest include also provisions and other items).

8. ToR 6: Propose clear definitions of those variables not clearly defined in the DCF

In order to fulfil with the last ToR, the group had a general look at the list of economic variables required by Commission Decision 949/2008 for fleet, processing and aquaculture in order to identify those variables still missing a (clear) definition.

It emerged that out of the financial position (already addressed in ToR 5, section 6), all the economic variables in Annex VI (fleet) are provided with a definition.

As far as the processing and aquaculture sector (Annex X and XII require the same variables), the group recognised that definitions are missing for the following variables for which the following is recommended:

- subsidies: the group recognized that the note 1 of Appendix XII is clear in Commission Decision 949/2008 ("Includes direct payments. Excludes social benefit payments and indirect subsidies").

- other income: the group agreed to consider "other income" all the incomes that cannot be included in turnover or subsidies (= total income-turnover-subsidies).

- Because most MSs use balance sheet to collect economic data for processing and aquaculture, the IV Council Directive 78/660/EEC could be used as reference. Furthermore, according to the STECF/EWG 11-18, the following reference can be given:
  - o Net financial costs should be accounted as the difference between financial income and financial costs, as defined in art. 23, item 9-11 for income and item 13 for costs of the IV Council Directive 78/660/EEC.
  - o Net extraordinary costs should be accounted as the difference between extraordinary income and extraordinary charges (as suggested in the report of SGECA 10-04) and defined in art. 23, item 16 (income) and 17 (costs), of the IV Council Directive 78/660/EEC. "Extraordinary income" and "Extraordinary charges" are the income and costs that arise otherwise than in the course of the company's ordinary activities (Article 29 of t IV Council Directive).

9. AOB

One of the participant raised a question concerning the collection of data for the fish processing sector. In that case data are collected through a questionnaire. All the economic variables are collected by taking into account the share of economic activity 10.20 (NACE classification) on the total. Only the exact share is reported (i.e. 70%).

The group agreed that this is not in-line with the criterion set used by the Commission Decision itself to identify the population (Chapter IV, section B, art. 1.2) where it is stated that the population is made up by all the firms whose primary activity is 10.20. There is no indication to extrapolate the exact share of the fish processing activity. The group also agreed that this is not in-line with Eurostat criteria, in particular with Structural Business Statistics, the main reference for the collection of data for the fish processing sector.

The group also recognized that it's not possible to distinguish, from a balance sheet (main source of data), the share of each economic activity. What is essential is that fish processing is the primary activity.

The group also recalled that only for firms for which processing is not the main activity, MSs should collect turnover related only to the fish processing activity (together with the number of enterprises).

Workshop on calculating capital value using PIM and definition of DCF variables

Capitaneria di Porto, Molo Pisacane

Napoli, 13-17/06/2011

<u>Agenda</u>

General notes:

Every day the morning and the afternoon session will respect the following times:

- Morning, starting at 9 p.m., coffee break 10.30/11 a.m., lunch break at 12.45.
- Afternoon, starting at 2 p.m., coffee break 3.45/4.15, close of session at 6 p.m.

Monday, 13th June

Afternoon

- Welcome
- Tour the table
- Overview of the agenda
- Appointment of rapporteurs
- State of the art on the application of the PIM method by MSs
- Brief overview of the PIM method for the estimation of the capital value (as required by the DCF) – presentation by Loretta Malvarosa

Tuesday, 14th June

Morning

- Presentation of MSs experiences in approaches and results estimating fleet capital value (both applying and not the PIM method)- first part – presentations by national delegates

Afternoon

- Application of the PIM to fishing fleets in practice: experiences and diversity of the countries involved in the study (presentation by Monica Gambino).
- Comparison of price per capacity unit applied by different MSs and assumptions made on the PIM method (age schedules, depreciation schemes, depreciation rates, etc.)

Wednesday, 15th June

Morning

- Training session on the application of the Perpetual Inventory Method: proposing approaches for MSs not applying and solutions for problems encountered by MSs applying the PIM method (practical application of the Excel format and possible sensitivity analysis exercises on national data)

Afternoon

- Propose best practices to be followed by MS in estimating capital value using PIM
- State of the art on the estimation of on unpaid labour, financial position and other variables both for fleet and processing sector – overview by Loretta Malvarosa

Thursday, 16th June
Morning
- Discuss problems faced by MS with respect to estimating unpaid labour (fleet and processing) and financial position (fleet, with common issues for the variable "debt" for the processing sector)
- Propose solutions to the problems and best practice on their estimation (also taking into account experience in other sectors)

Afternoon
- Propose clear definitions of those variables not clearly defined in the DCF (other income, financial costs and extraordinary costs for processing, debt for both fleet – impact on the calculation of financial position - and processing sector).
- Approval of the report on capital value

Friday, 17th June
Morning
- Approval of the report on unpaid labour and financial costs and on missing definitions.

- AOB

Annex 2 – List of participants

No	Name	Country	Address	e-mail
1	Anton, Eugen	Romania	National Institute for Marine Research and Development "Grigore Antipa" Blvd. Mamaia nr. 300, RO-900581, Constanţa 3, România	eugen@alpha.rmri.ro
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15	Traguany, Jacques	France	Ministère de l'Agriculture, de l'Alimentation, de la Pêche, de la Ruralité et de l'Aménagement du Territoire/ Direction des Pêches Maritimes et de l'Aquaculture, Bureau des Statistiques de la Pêche et de l'Aquaculture 3 place de Fontenoy, 75007 Paris	jacques.traguany@agriculture.gouv.fr
16	Urumov, Stoyan	Bulgaria	National Agency for Fisheries and Aquaculture (NAFA) 17 blvd Hristo. Botev, 1606 Sofia, Bulgaria	stoyan.urumov@iara.government.bg
17	Vassallo, Darcelle	Malta	Agriculture and Fisheries Regulation Department Fort San Lucjan, BBG 06. Marsaxlokk, Malta	darcelle.vassallo@gov.mt
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Annex 3 – Overview of the PIM method for the estimation of the capital value as required by the DCF (based on the study No. FISH/2005/03) – not included for size problems

Annex 4 - Application of the PIM to fishing fleets in practice: experiences and diversity of the countries involved in the study - not included for size problems

Annex 5 - Estimation of the imputed value of unpaid labour. Definition, MSs experience and problems solution - not included for size problems

Annex 4 - Final report of the Workshop on allocation of Economic Data at disaggregated level as related to the DCF

Workshop on allocation of Economic Data at disaggregated level as related to the DCF

July 4 – 8, 2011

at the vTI Institute of Sea Fisheries, Hamburg

Manuel Bellanger, *Ifremer, Maritime Economy unit, Brest, France*
Jörg Berkenhagen (chair)
Michael Ebeling
Katharina Jantzen, *all vTI Institute of Sea Fisheries, Germany*
Irina Jakovleva, *Ministry of Agriculture, Fisheries Service, Klaipeda, Lithuania*
Emil Kuzebski, *MIR, Gdynia, Poland*
Jos op de Weegh, *LEI, Wageningen, The Netherlands*

Table of contents

Workshop on allocation of Economic Data at disaggregated level as related to the DCF

1. Identify needs of applications, e.g. Long Term Management Plans, Regional Analyses for funding purposes and Ecosystem Approach to Fisheries Management.
2. Identify methods to allocate earnings and costs (operating costs, labour costs, capital costs) at different aggregation levels. Consider the identification of cost drivers. Transversal variables could serve for this purpose. Consider vessels that may be active in more than one fishing metiér during the same year.
3. Propose a method to split economic variables among different areas when appropriate.
4. Assess data quality requirements of allocation methods with regard to particular characteristics of DCF data sources at each MS (e.g. logbooks).

1. Summary

The general purpose of workshops is to mutually gain insight in common practice as performed in different MS, exchange ideas and potentially derive some best practice. It is beyond the scope of a workshop to develop guidelines or common rules. The workshop was attended by 7 participants, representing France, Germany, Lithuania, The Netherlands and Poland. Templates for the provision of exemplary anonymised raw data by vessel for any MS had been requested ahead of the meeting. It turned out favourable to have a common format of input data for statistical analyses, thus allowing the application of standard routines. Datasets from the aforementioned countries were available for evaluation during the workshop.

The needs for disaggregation were presented from the perspective of the member states being represented at the workshop. Long Term Management Plans, the Marine Strategy Framework Directive, the Ecosystem Approach, the AER regional analysis and Marine Spatial Planning were stated as most common fields for which disaggregated data are required.

The general approach of disaggregation is to use correlated data which are available at higher resolution. One major task during the workshop was to compare different correlations between annual cost data and transversal variables (effort, landings) which are available at higher resolution. Experience, some advance information from personal communication and previous approaches (LTMP, AER) as well as common sense have been used to identify potential and meaningful correlations between effort and cost data. Crew costs are likely to be related to earnings from landings, whereas energy costs, repair and maintenance costs and other variable costs are more likely to be related to vessel size characteristics and effort.

It turned out that in several cases the data were not as closely correlated as expected. However, for certain fleets or fleet segments the correlation was quite reasonable. It has to be pointed out that scattering of data does by no means automatically mean that they are unreliable. Individual vessel characteristics can vary broadly, thus resulting in a wide range of data. However, as individual vessel data are usually raised to the according entity (fleet segment), some problems may be encountered when fleet segment data are disaggregated towards smaller units.

The use of VMS data to further disaggregate transversal data (effort and landings) has been discussed. A presentation was given showing the implementation of VMS data in marine spatial planning e.g. for the analysis of earnings from designated wind farm sites.

The workshop can be regarded only as an initial step to develop more specific methods. Future activities might address the identification of homogeneous fleet units (not necessarily DCF fleet segments) – also an international or regional perspective - , approaches to determine cost structures for certain activities, estimation for fleet segments or larger units from the samples, applicability of e.g. linear models to correlate multiple variables. It might also be conducive to investigate cost data at very high resolution (e.g. for single trips) for single vessels to draw further conclusions. Particularly

wages and fuel can often be determined per trip, while repair and maintenance costs usually do not accrue as frequently as would be necessary to assign them to single trips.

2. Initial remarks

The terms of reference have been discussed and somewhat altered for easier handling. ToR 3 is contained in ToR 2. As far as ToR 4 is concerned, it has been agreed that quality issues are a task beyond the scope of the workshop, taking into account the available personnel and temporal resources and the lack of further specifications. In general, quality issues can only be evaluated against specific targets, which were not available. Moreover, the analyses performed during the workshop do not allow for quantitative conclusions on data quality. The data provided have to be regarded as reliable, and scattering or poor correlation between data does not necessarily allow raising doubts about data quality. This issue has been further discussed. In addition, a compilation of data sources and their specifications has been elaborated for the member states represented at the workshop.

In its plenary report (PLEN-03-10, p.19), STECF stated:

> *In section 4.3 on the review of the SGECA 10-03 report STECF developed possible TOR for a workshop on possibilities to collect disaggregated economic data with an additional area code. Furthermore, it is intended that possibilities for collection of disaggregated costs data will also be assessed by that workshop. If such a disaggregated data collection is possible it will allow STECF to assign costs and earnings data to the different eco-regions.*

The issue of collection of disaggregated cost data had never been picked up again by STECF, neither in the referred section nor in the final version of the terms of reference. Therefore the point of altering the collection of cost data was not addressed during the workshop.

3. Identification of needs of application

The needs for disaggregation of economic data have been discussed with respect to the circumstances within the member states which were represented at the workshop. It turned out that the different applications do not necessarily require constant degrees of resolution, i.e. the characteristics as presented in table 1 are mainly exemplary, but might vary from case to case. The table does not claim to be exhaustive, but the examples proved to be relevant for several or all member states involved.

Table 1   Examples for applications which require disaggregation of economic data

application	variables	temporal resolution	spatial resolution	activity resolution
Long Term Management Plans (impact assessment, evaluation)	effort, landings, revenue, all variable cost data	total annual effort in related fishery	ICES (sub-) division	fishery on target species
Marine Strategy Framework Directive	effort, landings, revenue, all variable cost data	annually	Variable (e.g.ICES division)	DCF fleet segment, gear type
Ecosystem Approach to Fisheries Management	effort, landings, revenue, all variable cost data	annually	ecosystem (e.g. ICES rectangle)	variable
Regional analysis (AER)	effort, landings, revenue, all variable cost data	annually	region	DCF fleet segment
Marine Spatial Planning (e.g. wind farms, pipelines)	effort, landings, revenue, all variable cost data	annually (monthly)	several	fishery on target species/using specific gear

Table 1 also contains variables which are referred to as "transversal" under the DCF (effort, Landings, Revenue). These data have to be collected at higher resolution, which might or might not be sufficient for the application. In particular, Marine Spatial Planning might require data on areas which are much smaller than a statistical rectangle, e.g. wind farm areas.

Under the DCF cost data have to be collected only on an annual basis. There are examples (FRA, NLD) for the collection of some daily cost data – basically Crew cost and Fuel cost. Other costs may only accrue monthly or annually or even less often (e.g. repair), which impedes assigning data to smaller units (spatial or temporal).

It is remarkable that the DCF fleet segmentation according to Appendix III (EU Commission Decision 93/2010) matches the requirements of only one of the applications listed in Table 1 (i.e. the AER). Referring to length and main gear for segmentation is rather pragmatic and well manageable. However, it appears to have less relevance for a wider range of applications.

This phenomenon has also been discussed at the STECF meeting on present and future requirements of the DCF (EWG-11-04). In chapter 15.1 (p.63 ff.) of the meeting report a compilation of different requirements and further consideration is provided, corroborating the need for disaggregation.

4. Identification of methods to allocate earnings and costs

Earnings as addressed in the terms of reference are usually available at the highest resolution levels as to be provided under the DCF. Further disaggregation is therefore not feasible using only DCF data. The only method for further disaggregation which has been discussed in more detail during the workshop is the analysis of VMS data. However, that approach applies to the disaggregation of effort data as well. Therefore, as far as the earnings are concerned, it is to be referred to the application of VMS data.

As long as cost data are sufficiently closely correlated with effort data which are available at the required resolution, they can be estimated for the smaller temporal or spatial units.

Numerous plots of cost vs. transversal data have been generated and debated during the workshop. In the following chapters, a selection of these plots is being discussed in more detail in order to provide a broad overview.

Table 2   DCF cost variables and transversal variables which are likely to be correlated ("cost drivers")

DCF Variable	"Cost driver"
Wages and salaries of crew	Value of landings, days at sea, crew number
Imputed value of unpaid labour	Not identified
Energy costs	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW), fuel price
Energy consumption	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW)
Repair and maintenance costs	vessel size (GT, kW), age, days at sea, fishing days, area of operation, fleet segment
Variable costs (other)	Days at sea, fishing days, type of activity, gross revenue, vessel size (GT, kW), volume of landings
Non-variable costs	Vessel size (GT, kW), age,

National chapters' overview

The French example

The French fleet sample is composed of 93 vessels operating in the North Sea – Channel – Atlantic. Composition in terms of DCF fleet segments as defined in Appendix III, Commission Decision 2010/93, is:

Table 3   Overview over the analysed samples of the French fleet segments

Fleet segment	DFN	DRB	DTS	FPO	HOK	MGP	OTM	PGO	PGP	PMP
Sample size	13	10	41	12	6	2	1	2	2	4

Crew costs

Looking at the Revenue against the Crew costs for the whole sample (see Fig. 1), the correlation between those variables is quite evident. It is easily explainable by the fact that in most cases the crew cost is a share of the revenue. In terms of cost allocation at métier level, this means that one may rely on revenues to allocate crew costs
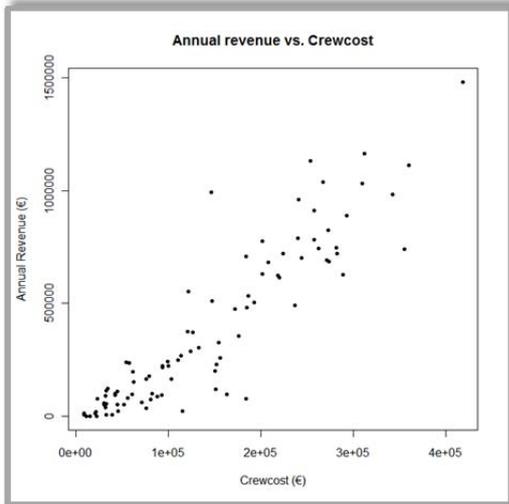
Looking at the Crew cost against the Vessel length, it can be found that those variables are also correlated as might be expected. Thus vessel length may also be taken into consideration as a cost driver.

Fig. 1 Annual revenue vs. Crewcost
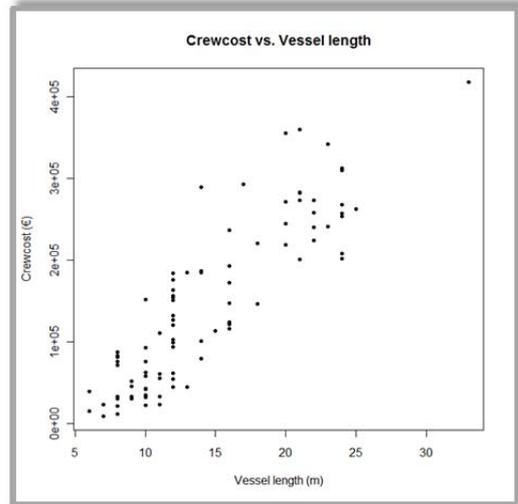
Fig. 2 Crewcost vs. Vessel length

Energy costs

It is expected that energy costs are correlated with days at sea and vessels characteristics (length, kW). Trying several combinations of variables, it turns out that seadays*kW is the best fit for energy costs for this sample (see Fig. 3)
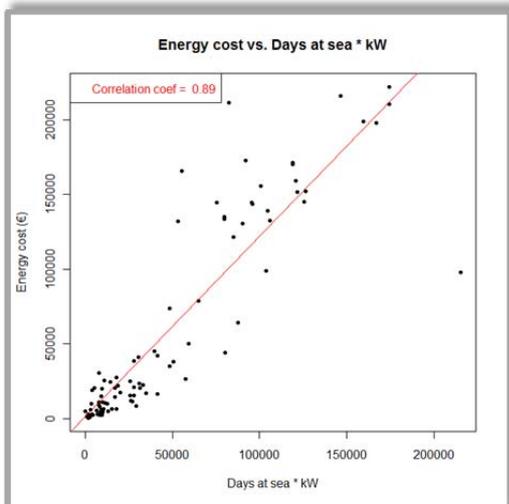
Fig. 3 Energy cost vs. Days at see*kW

Splitting up the sample into DCF fleet segments, the correlation still holds. The correlation coefficient for FPO is not as high as the other though, but it is only due to one value which may be considered as an outlier.
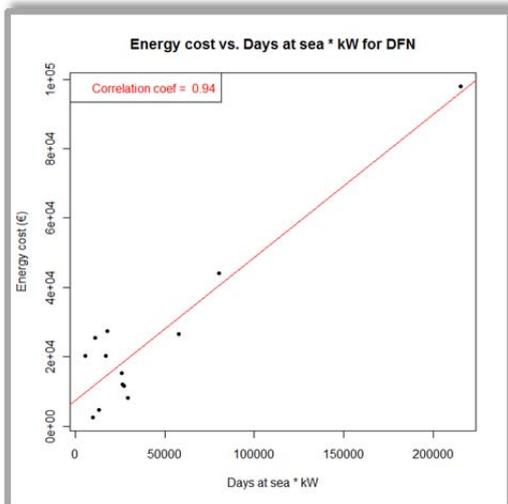
Fig. 4   Energy cost vs. Days at see*kW for DFN
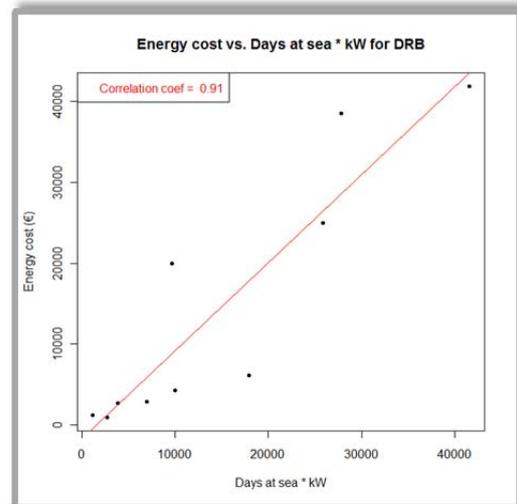
Fig. 5   Energy cost vs. Days at see*kW for DRB
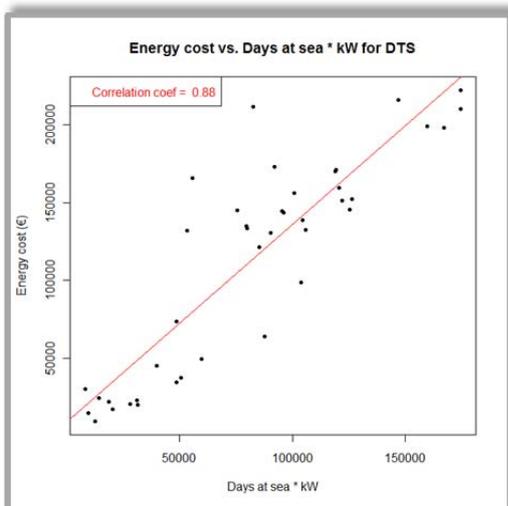
Fig. 6   Energy cost vs. Days at see*kW for DTS
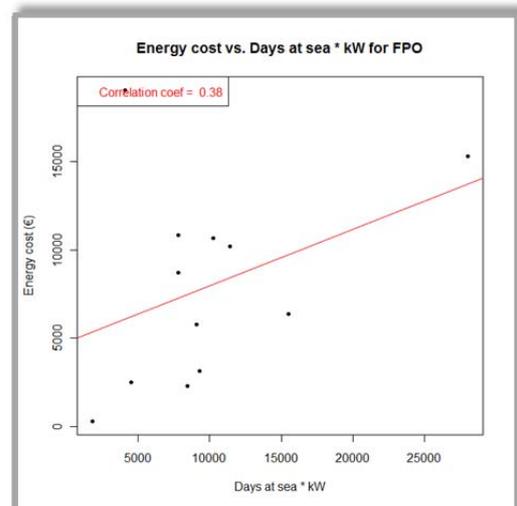
Fig. 7   Energy cost vs. Days at see*kW for FPO

Repair and maintenance costs

The Days at sea * kW is also correlated with Repair and maintenance costs. The variability increases when it comes to the highest values, which often is the case for those kinds of graphs.
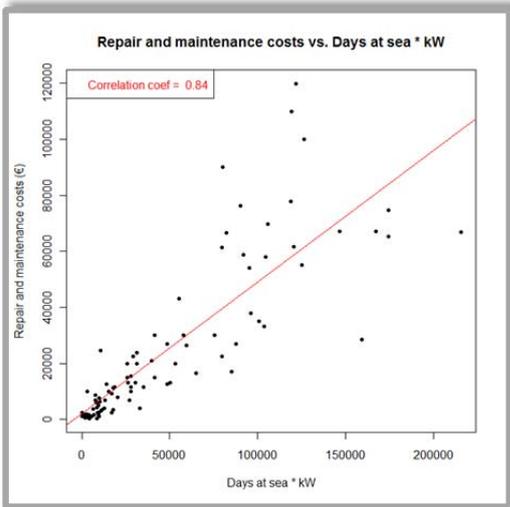
Fig. 8   Repair and maintenance costs vs. Days at sea *kW

Again, splitting up the sample by DCF fleet segment yields consistent correlations between Repair and maintenance costs and Days at sea * kW.
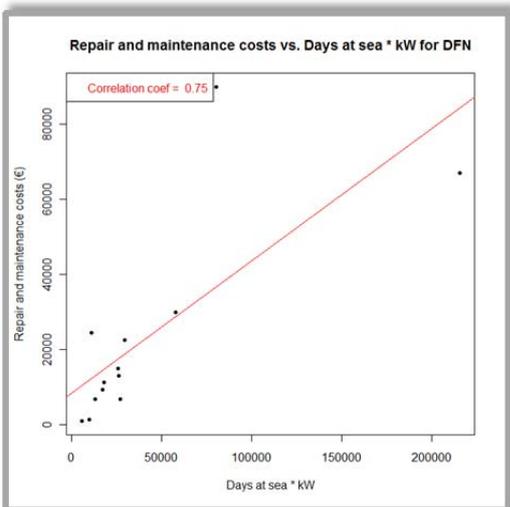
Fig. 9   Repair and maintenance costs vs.Days at sea*kW for DFN
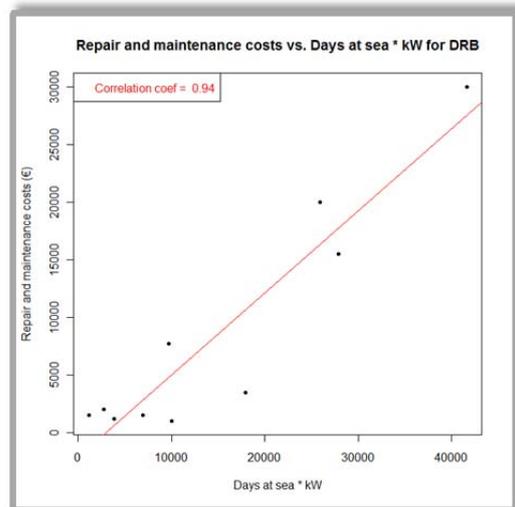
Fig. 10 Repair and maintenance costs vs.Days at sea*kW for DFN
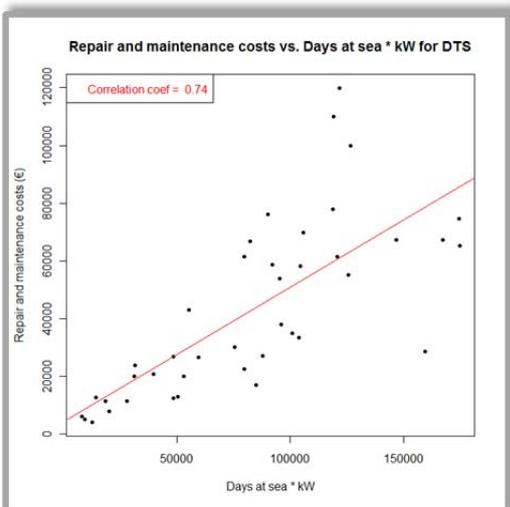
Fig. 11 Repair and maintenance costs vs.Days at sea*kW for DTS
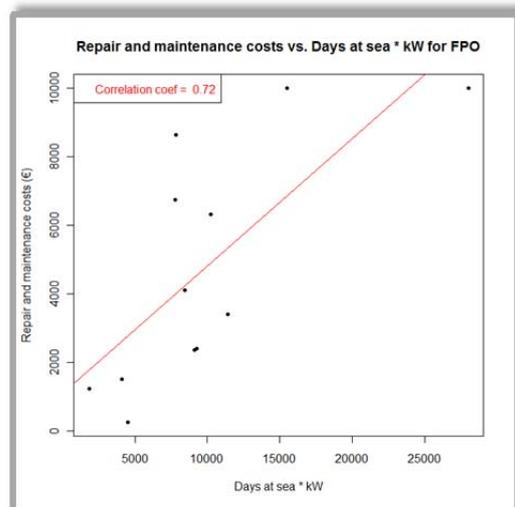
Fig. 12 Repair and maintenance costs vs.Days at sea*kW for FPO

Other variable costs

Finally, Days at sea * kW is also highly correlated the other variable costs, which still stands when looking by fleet segments:
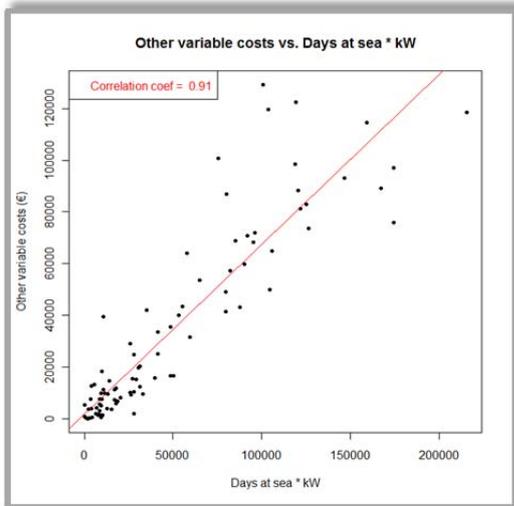
Fig. 13 Other variable costs vs. Day at see*kW

Summary

In a nutshell, it was found that:

- Crew cost is correlated to Revenue
- Energy cost, Repair and maintenance cost and Other variable costs are correlated to Days at sea * kW.

Table 4   Correlation coefficient table for the total French sample

	Revenue	Seadays * kW
Revenue	1	0,94
Crewcost	0,91	0,87
Energy cost	0,86	0,89
Repair cost	0,81	0,84
Othvarcost	0,9	0,91
Seadays * kW	0,94	1

Table 4 shows a close correlation between Revenue or Seadays*kW and all cost items (more than 80%). With such a sample of highly correlated data it appears worth using these variables to estimate the costs at disaggregated level. Since Days at sea were not available at disaggregated level, Revenue was used to exemplify how the costs could be disaggregated (temporally or spatially).

A close correlation between Revenues and Crew costs is in line with the expectations and there is also causation, as it is common to pay fishermen by a certain share of the earnings. However, it should be born in mind that correlation does not imply causation, i.e. the correlation between revenues and the remaining costs is not necessarily causal.

The formula applied to estimate each cost on the basis of Revenue for some smaller unit (trip) is:

$$COST_{smaller\ unit} = \sum_{trips\ \in\ smaller\ unit} \frac{revenue\ for\ smaller\ unit(trip)}{Vessel\ annual\ revenue} \times Vessel\ annual\ COST$$

Basically, it is assumed that, for a single vessel, the ratio of Revenue per smaller (temporal or spatial) unit versus total revenue is the same as the ratio of costs per unit versus total costs. For example, if we want to estimate the Fuel cost in Division IVb for each vessel that operates in this Division, the Revenue associated with this Division should be taken and divided by the annual Revenue of the vessel (i.e. the Revenue over all Divisions) and then multiplied by the annual Fuel cost of the vessel. The sum of all vessels will give an estimate on the total Fuel cost for Division IVb.

The following tables display the results of such estimations for Crew cost, Energy cost, Repair and maintenance costs, and Other variable costs by Division (Table 5) and by gear type (Table 6).

Table 5, comprising the costs at Division level, shows some interesting results. The relation of costs to Revenue for the whole sample (i.e. overall divisions) is as follows:

- Crew cost = 37% of Revenue
- Energy cost = 15% of Revenue
- Repair and maintenance costs = 6% of Revenue
- Other variable costs = 9% of Revenue
- Sum of costs = 67% of Revenue

Table 5 also shows a cost structure by Division which depends on the characteristics of the vessels that operate in each Division. The sum of costs can vary from 46% to 77% of the Revenue between Divisions. Of course, in order to get the actual costs breakdown by division it would be necessary to have data for the entire fleet and not only for a sample of vessels. But this shows us why it is important to look at cost breakdown at disaggregated levels.

The breakdown of total costs in Table 6 is the same as in Table 5 since the same sample was used for calculations. However, sums of costs for different gear types are in some cases higher than the Revenues, which raises some questions and needs further clarification. It may happen sometimes, so this does not necessarily mean that the data are of poor quality. On the other hand it could be the case that some trips are missing in the data and therefore the Revenue might be underestimated. However, it would be favourable to ensure the data completeness before using this method to get costs at disaggregated level.

Table 5   **Estimated costs as shares of revenue at Division level**

Division	Revenue	Crewcost	Energy cost	Repair cost	Othvarcost	Sum of costs	Crewcost (%Revenue)	Energy cost (%Revenue)	Repair cost (%Revenue)	Othvarcost (in %Revenue)	Sum of costs (%Revenue)
IVb	166670	53881	29224	13469	20513	117087	32	18	8	12	70
IVc	1226418	414769	186482	79970	133462	814683	34	15	7	11	66
VIa	598803	169040	39628	27093	47917	283678	28	7	5	8	47
VIIa	223	76	42	20	19	157	34	19	9	9	70
VIIb	5918	1671	392	268	474	2803	28	7	5	8	47
VIIc	145559	41091	9633	6586	11648	68957	28	7	5	8	47
VIId	3730941	1392414	680581	309094	472687	2854776	37	18	8	13	77
VIIe	7496510	3051901	1011736	378325	563036	5004998	41	13	5	8	67
VIIf	844682	240007	159253	52717	63487	515463	28	19	6	8	61
VIIg	2254633	667205	425840	184924	218657	1496626	30	19	8	10	66
VIIh	4789691	1647668	860586	342358	418617	3269229	34	18	7	9	68
VIIIa	10569148	4047842	1683102	636938	830630	7198511	38	16	6	8	68
VIIIb	3028617	1272666	248082	196650	233430	1950828	42	8	6	8	64
VIIIc	20449	7986	646	711	1357	10700	39	3	3	7	52
VIIId	354468	114857	62136	24045	35597	236635	32	18	7	10	67
VIIIe	7482	2249	1156	447	641	4491	30	15	6	9	60
VIIj	160753	47202	16889	8621	13201	85913	29	11	5	8	53
VIIk	192309	57004	25684	10830	16202	109719	30	13	6	8	57
Xa	3297	951	292	106	152	1502	29	9	3	5	46
XIIa	3085	876	525	122	428	1952	28	17	4	14	63
Total	35599656	13231355	5441908	2273291	3082154	24028708	37	15	6	9	67

These results are based on a sample of vessels and are not representative for the actual revenue and costs by division.

Table 6   Estimated costs as share of revenue at gear level

Gear	Revenue	Crewcost	Energy cost	Repair cost	Othvarcost	Sum of costs	Crewcost (%Revenue)	Energy cost (%Revenue)	Repair cost (%Revenue)	Othvarcost (%Revenue)	Sum of costs (%Revenue)
DRB	1689997	691963	135068	79073	122137	1028240	41	8	5	7	61
DRH	7356	14038	280	623	93	15035	191	4	8	1	204
FPO	956690	906571	101532	72376	67336	1147816	95	11	8	7	120
GEN	8154	18879	2067	103	1357	22406	232	25	1	17	275
GES	213	233	64	16	4	317	109	30	8	2	148
GN	116047	93555	10658	11145	14380	129738	81	9	10	12	112
GND	774	382	18	49	33	482	49	2	6	4	62
GNS	2076436	752217	124273	106503	156739	1139732	36	6	5	8	55
GTN	305617	212784	25172	33262	37637	308855	70	8	11	12	101
GTR	2622743	1236207	270911	127306	193451	1827875	47	10	5	7	70
HMS	95171	160114	7498	5880	7409	180901	168	8	6	8	190
LA	2284	695	438	347	235	1716	30	19	15	10	75
LHM	53826	44551	9600	500	7650	62301	83	18	1	14	116
LHP	25015	7045	1886	1115	1111	11157	28	8	4	4	45
LLD	132097	44971	14250	4628	6156	70005	34	11	4	5	53
LLS	930150	390927	41014	20818	61353	514112	42	4	2	7	55
LNP	2684	651	251	45	109	1056	24	9	2	4	39
LTL	66171	38724	7055	1055	3453	50287	59	11	2	5	76
NK	478607	219929	40990	47694	48809	357422	46	9	10	10	75
OTB	15960824	5018969	2841740	1031858	1437186	10329753	31	18	6	9	65
OTM	152631	47340	21466	11941	14997	95745	31	14	8	10	63
OTT	9170360	3082730	1669536	676470	838966	6267701	34	18	7	9	68
PTB	2223	505	134	23	104	766	23	6	1	5	34
PTM	546683	176890	81368	27655	38286	324199	32	15	5	7	59
TB	44486	15106	8473	3581	4166	31325	34	19	8	9	70
TBB	137237	49732	24897	8618	18473	101720	36	18	6	13	74
TBS	15180	5646	1269	607	524	8046	37	8	4	3	53
Total	35599656	13231355	5441908	2273291	3082154	24028708	37	15	6	9	67

These results are based on a sample of vessels and are not representative for the actual revenue and costs by gear type.

Open questions and suggested next steps are:

- Try to repeat similar calculation for an entire fleet.
- When data at disaggregated level are only available for a part of the fleet, is it reasonable to apply this method to available data and then apply cost structures to the rest of the fleet to get complete results? (sample rate threshold, significance should be discussed).
- Find some variables other than the Revenue (and available at disaggregated level) with close correlations to costs, which may be used for this method.
- Try a combination of variables (e.g. a linear model) if give better results.
- Make some comparisons between regions/member states.

The German example

Sample characteristics

Table 7 describes the composition of the German sample provided for data analysis at the workshop. The cost data have been provided by an accountant's network. Capacity and effort data are derived from the fleet register and from logbooks.

Table 7   Characteristics of the sample for the German fleet

Length	DFN	DTS	FPO	HOK	PG	TBB	total
VL0010					75	6	81
VL1012		3			21	3	27
VL1218	4	24	1	1		57	87
VL1824	1	13				28	42
VL2440		7				1	8
total	5	47	1	1	96	95	245

Crew cost

The data sets show that for the entire sample Crew costs are to some extent correlated with the annual Revenues (Fig. 14). Several data points indicate that the Revenue is below the Crew costs, i.e. the Revenues do not even cover the expenses for labour. This is indicated by the blue line in Fig. 15 – which provides some evidence that also the Crew cost per crew member is somewhat correlated with the Revenue per crew member. Fig. 16 indicates that the Revenue per vessel can vary broadly even with the same crew size. In tendency, higher Revenue also requires a larger crew size.

It has to be kept in mind that the crew costs usually do not include the value of the owner's labour.
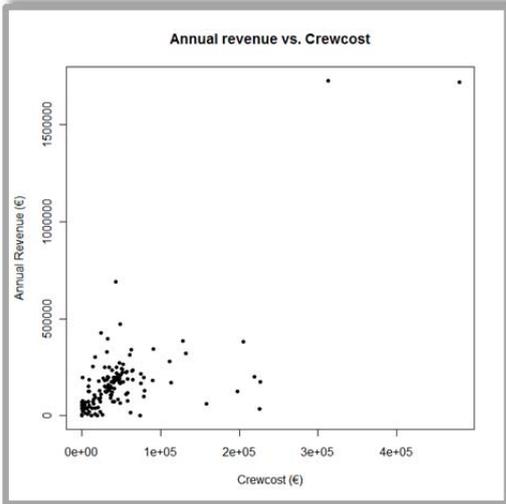
Fig. 14 Annual revenue vs. Crew costs
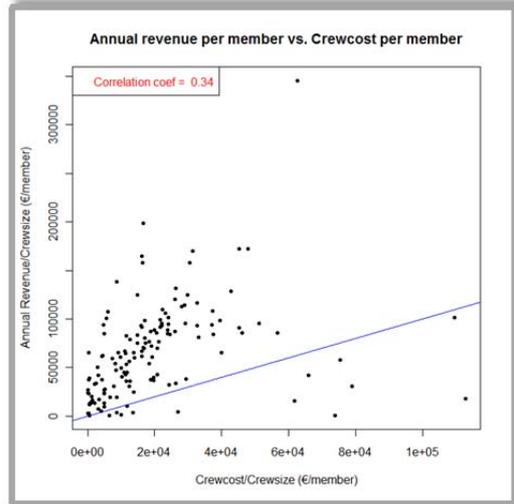
Fig. 15 Annual revenue per member vs. Crew costs per member
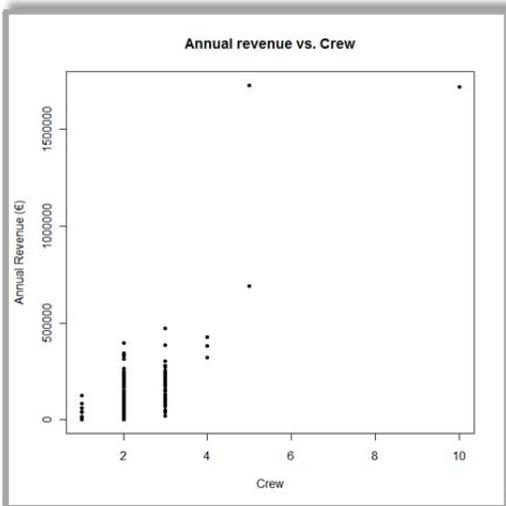
Fig. 16 Annual revenue vs. Crew size

Energy costs

The Energy costs in relation to the Days at sea times the kW show a tight correlation (Fig. 17) The more kW is used, the more Energy costs are produced. Energy costs are also dependent on the vessel length (Fig. 18)
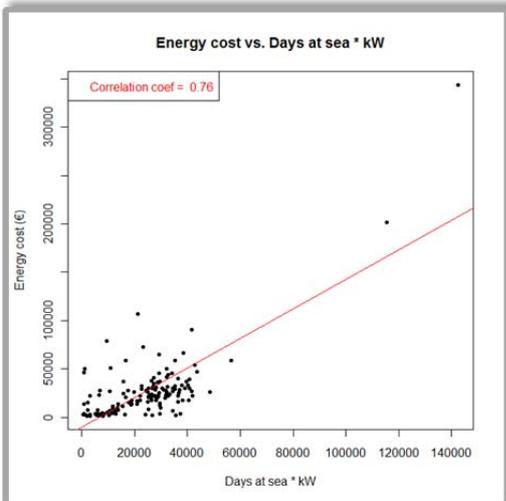
Fig. 17 Energy cost vs. Days at sea*kW
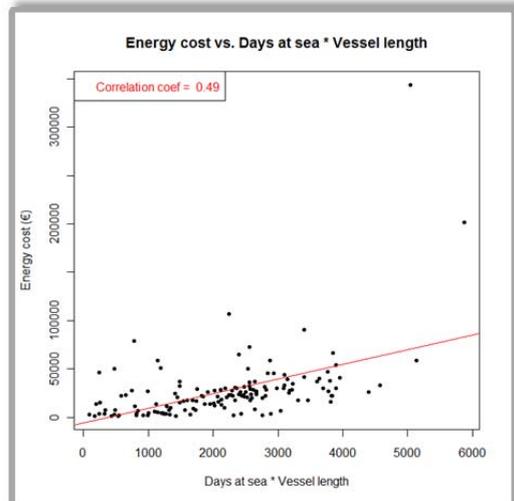
Fig. 18 Energy cost vs. Days at sea*Vessel length

For the fleet segment of the demersal trawlers and demersal seiners (DTS) the correlation between Energy costs and Days at sea *kW (Fig. 19) as well as Days at sea * Vessel length (Fig. 20) seems to be higher in comparison to other fleet segments. The capacity indicator 'kW' appears to slightly exceed the capacity indicator 'vessel length' as cost driver.
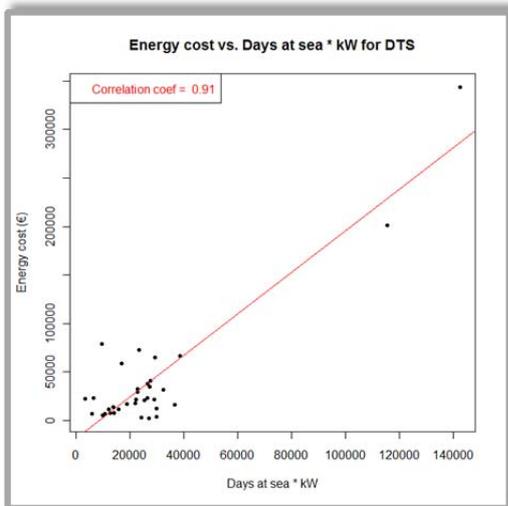
Fig. 19 Energy cost vs. Days at sea*kW for DTS
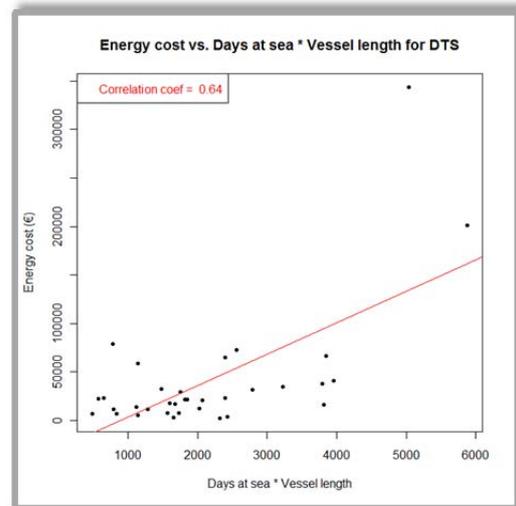
Fig. 20 Energy cost vs. Days at sea*Vessel length for DTS

For the Beam Trawlers (TBB), for example, there is no tight correlation (see Fig. 21and Fig. 22).
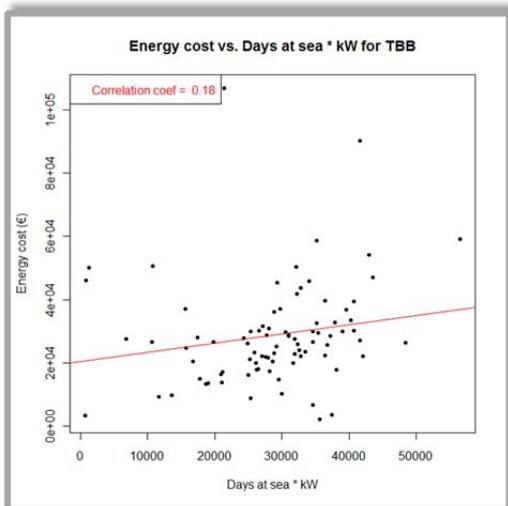
Fig. 21 Energy cost vs. Days at sea*kW for TBB
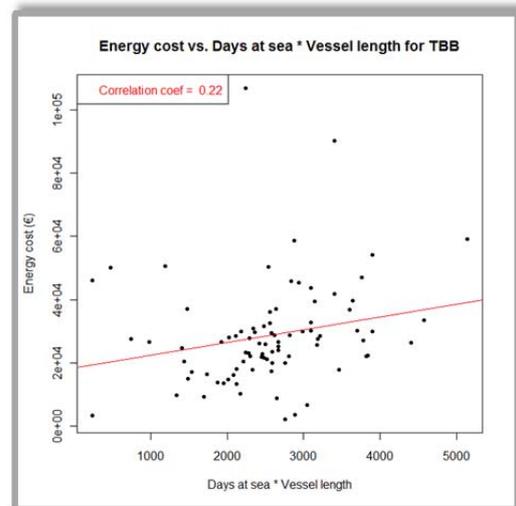
Fig. 22 Energy cost vs. Days at sea*Vessel length for TBB

Repair and maintenance costs

For the total fleet, the correlation between Repair and maintenance costs and the effort and capacity used (Fig. 23 and Fig. 24) bears a strong analogy to the correlations of Energy costs. This analogy is also reflected in the calculations of this variable for the demersal trawlers and seiners (Fig. 25), but not as clearly for beam trawlers (Fig. 26).
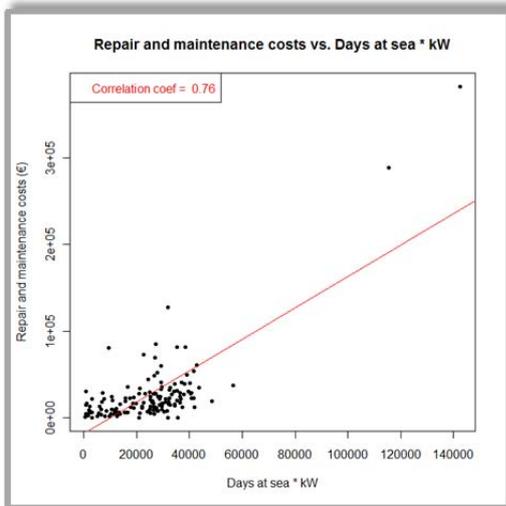
Fig. 23 Repair and maintanance costs vs. Days at sea*kW
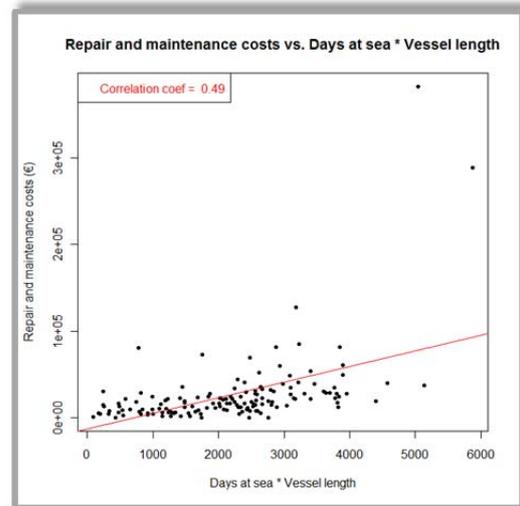
Fig. 24 Repair and maintanance costs vs. Days at sea*vessel length
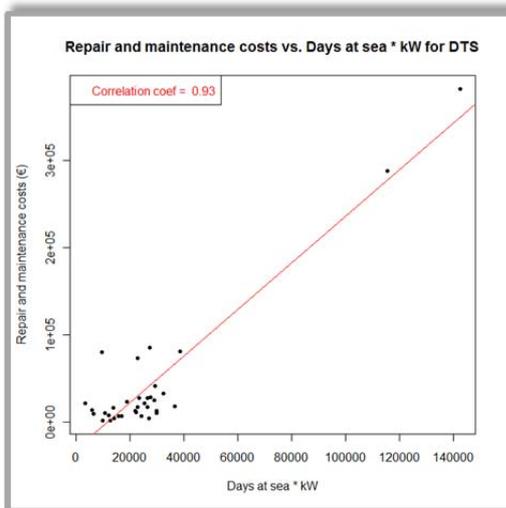
Fig. 25 Repair and maintanance costs vs. Days at sea*kW for DTS
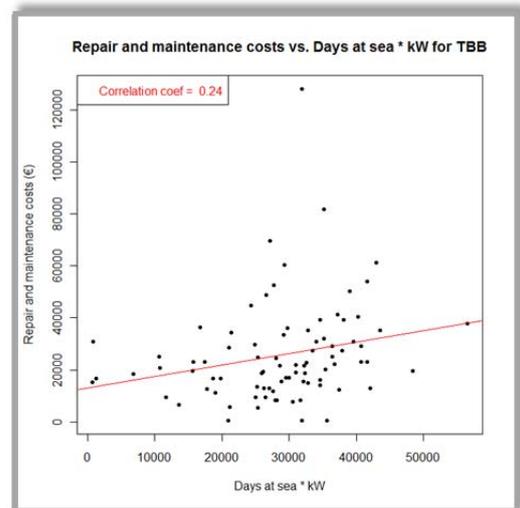
Fig. 26 Repair and maintanance costs vs. Days at sea*kW for TBB

Other variable costs

Other variable costs are somewhat correlated with capacity and effort as cost drivers as well (Fig. 27 and Fig. 28). It has to be mentioned that these only play a minor role in comparison to the other variables investigated.
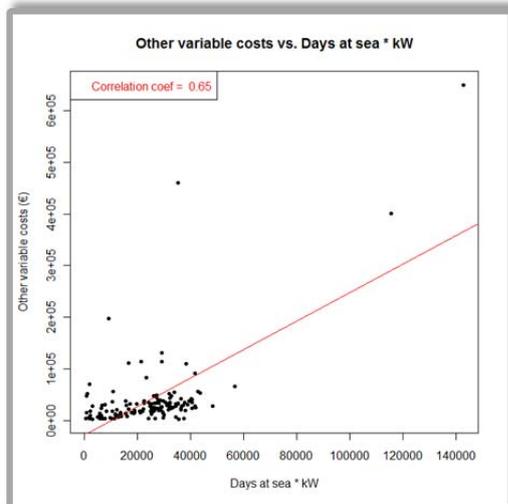
Fig. 27 Other variable costs vs. Days at sea*kW
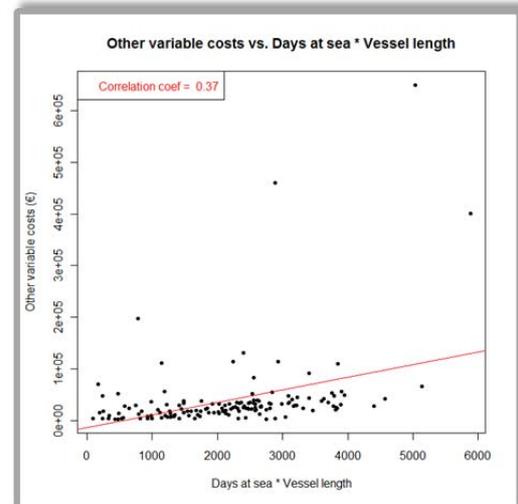
Fig. 28 Other variable costs vs. Days at sea*Vessel length

Summary

All in all, as in the French case, the following could be observed:

- Crew cost is correlated to Revenue.
- Energy cost, Repair and maintenance cost and Other variable costs are correlated to Days at sea * kW.

The correlation varies by segment. KW appears to be a better capacity indicator than vessel length.

The Lithuanian example

Data availability

At the workshop, Lithuania has provided data relating to effort, Landings, Revenue and cost for four vessels that operated in different métiers during 2009. Three of the vessels included within this sample were similar in capacity, whilst the other is several times larger. They are from two different fleet segments. The capacities of all four vessels constitute approximately two percent of the entire Lithuanian fleet. Effort, Revenue and Landings are derived from logbook and sale notes. Cost data are provided on the basis of statistical annual reports.

As the sample is of rather small size, the data are displayed more for illustrative purposes rather than for drawing profound conclusions.

Wages and salaries of crew

The data sets of annual Revenue against Crew cost reflect some correlation (Fig. 29) However, even within the same fleet segment Crew costs can vary by vessel. It is quite evident that the size of the vessel (vessel length) has a strong influence on the Revenue (Fig. 30)
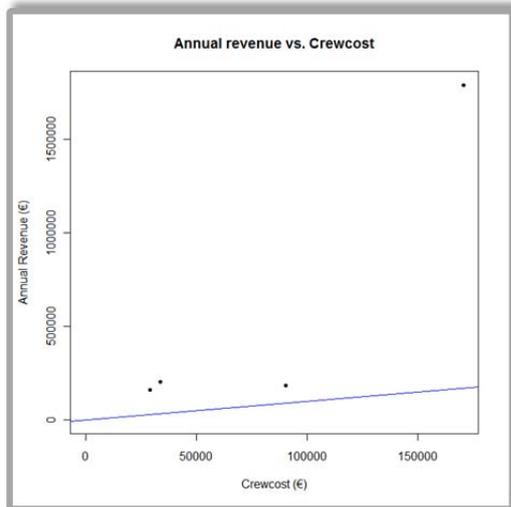
Fig. 29 Annual revenue vs. crew cost
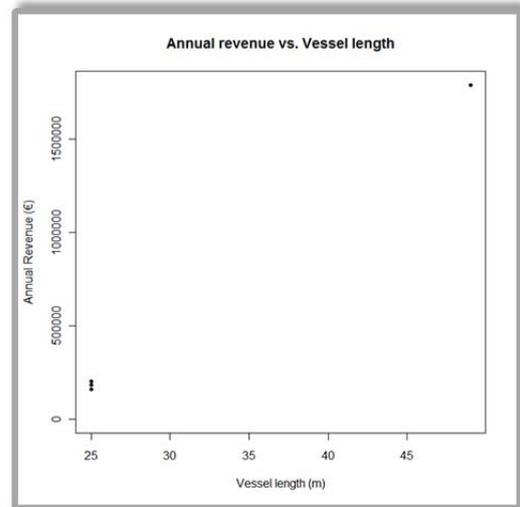
Fig. 30 Annual revenue vs. vessel length

Energy costs

High correlation coefficients between Energy costs and Day at sea*kW (Fig. 31) as well as between Energy costs and Days at sea* vessel length (Fig. 32) are observed, but they are also due to the low number of data.
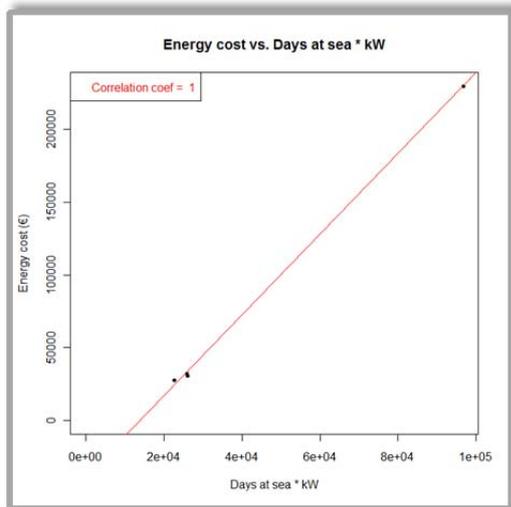
Fig. 31 Energy cost vs. Days at sea*kW
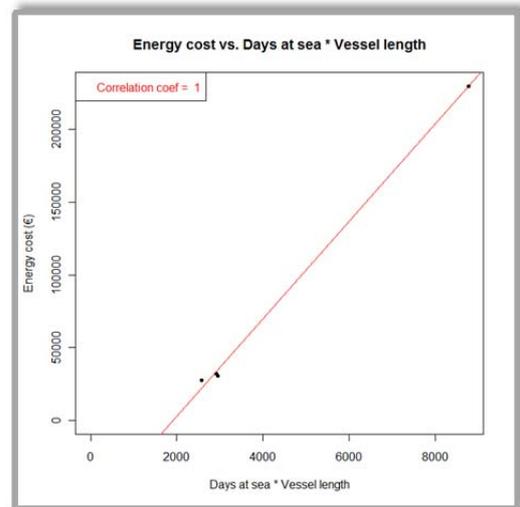
Fig. 32 Energy cost vs. Days at sea*Vessel length

Repair and maintenance costs

As expected due to the small sample size, correlation of Repair and maintenance costs against Days at sea* kW (Fig. 33) and Days at sea * vessel length (Fig.34) are high.
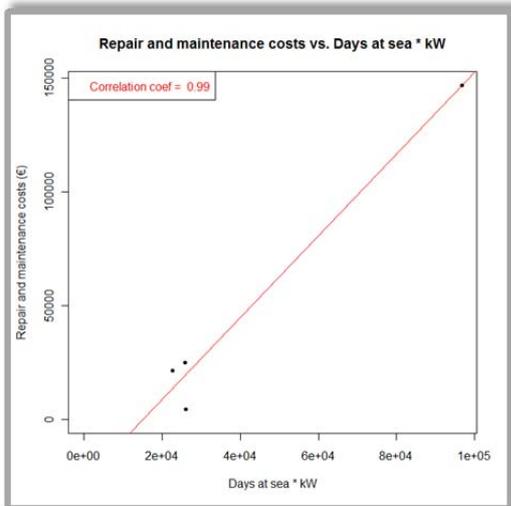
Fig. 33 Repair and maintenance costs vs. Days at sea*kW
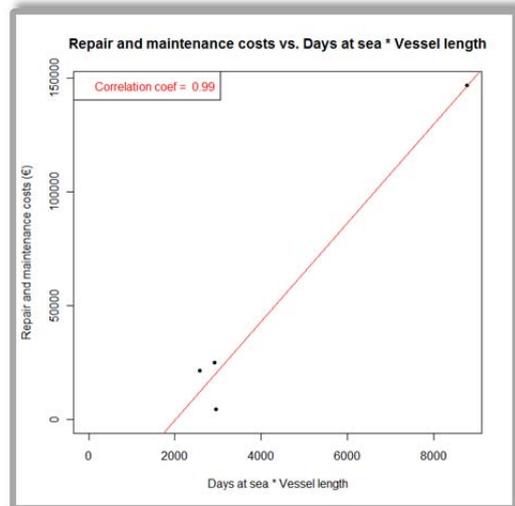
Fig.34 Repair and maintenance costs vs. Days at sea*Vessel length

Other variable costs

Analysis of the correlation between Days at sea* kW and Days at sea * Vessel length on Other variable costs are reflected in Fig. 35 and Fig. 36. As shown previously, there is perfect correlation. As the data provided came from only four vessels, there is insufficient information to make a final conclusion.
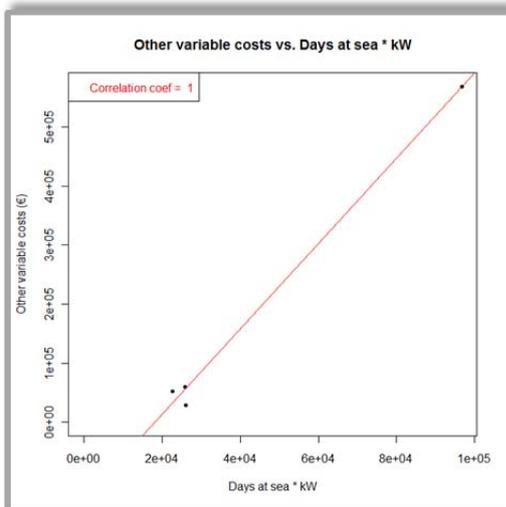
Fig. 35 Other variable costs vs. Days at see*kW
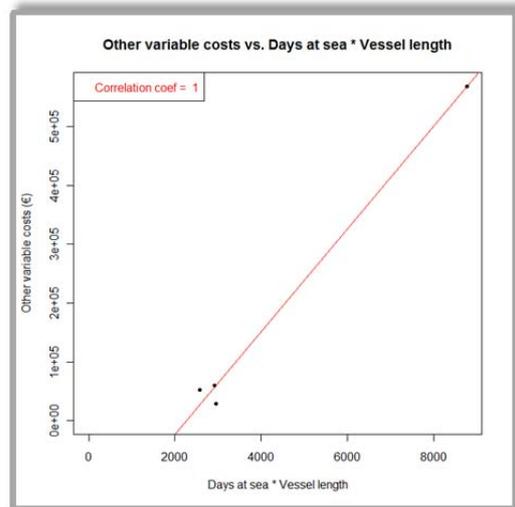
Fig. 36 Other variable costs vs. Days at see*Vessel length

Summary

The provided sample was quite small and does not allow drawing profound conclusions. However, the tendencies in correlation as observed in the examples from other member states can be supported.

The Netherlands' example

Wages and salaries of crew

There seems to be a quite tight correlation between the Crew costs and the annual Revenue (Fig. 37). The annual Revenues directly determine the Crew costs.

On the other hand, the correlation between the Days at sea and the Crew costs is not that clear (Fig. 38). This indicates that the Crew costs are dependent on another variable, e.g. the vessel size.
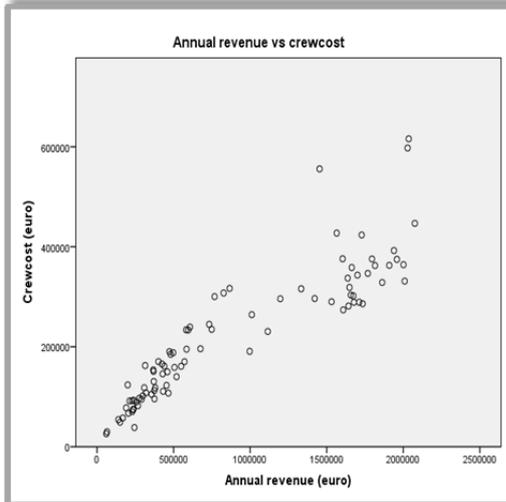
Fig. 37 Annual revenues vs. crew costs
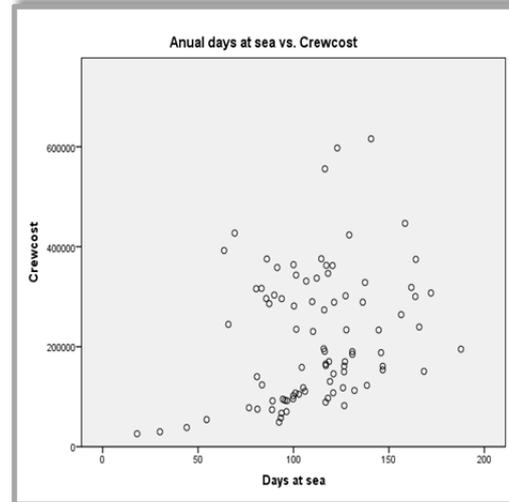
Fig. 38 Annual days at sea vs. Crewcost

Repair and maintenance costs

The Repair and maintenance costs and the kW of the vessels do not indicate a high correlation (Fig. 39) The fleet structure seems to consist mainly of vessels with about 250 kW and 1500 kW. Within these ranges, the Repair and maintenance costs exhibit a high variance.

There is a certain dependency between the Days at sea and the Repair and maintenance costs (Fig. 40). Still, the correlation structure is quite diverse. The Repair and maintenance costs are likely to depend on other variables as well, e.g., the technical constitution, age, and size of a vessel.
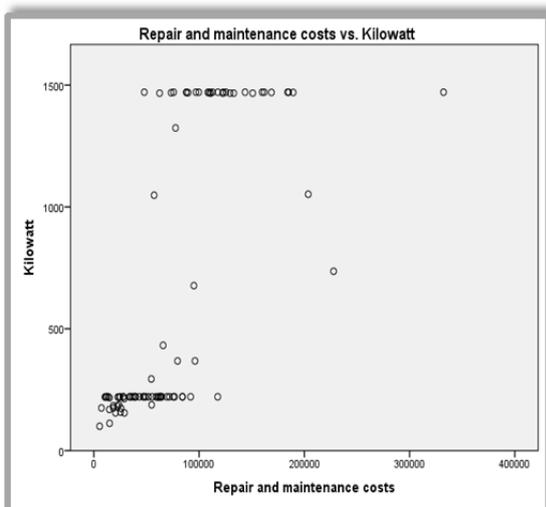
Fig. 39 Repair and maintenance costs vs.Days at sea*kW
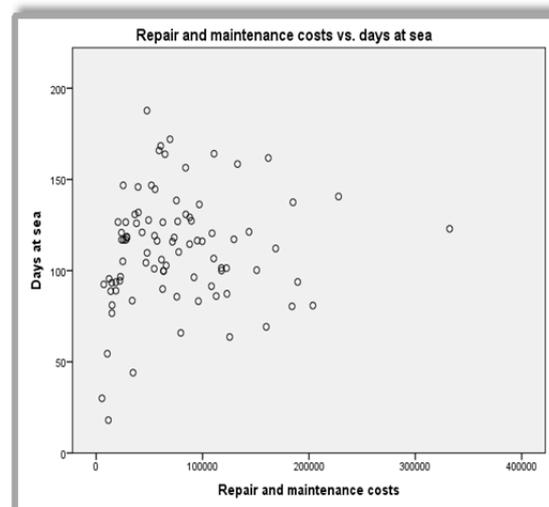
Fig. 40 Repair and maintenance costs vs.Days at sea

The correlation structure between the Repair and maintenance costs and the gross tonnage appears to be quite tight (Fig. 40). Again, this correlation reflects a concentration of the vessel structure within a gross tonnage range of about 80GT and 500GT.
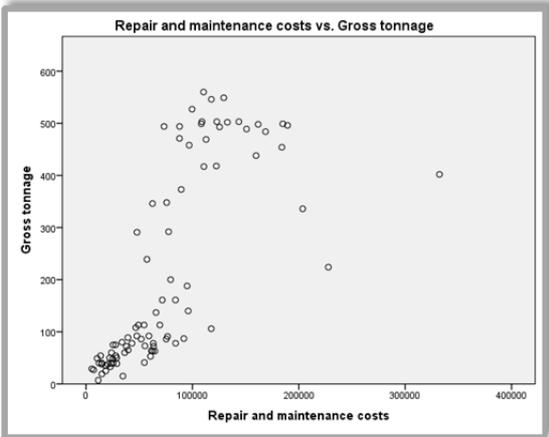
Fig. 41 Repair and maintenance costs vs. Gross tonnage

An analysis of the Repair and maintenance costs by gear is illustrated in the following.

The correlation between Days at sea and the Repair and maintenance costs is displayed in Fig. 42-Fig. 45, separated by fleet segments. Even though the correlation between the two variables does not appear to be very close, there is a clear and evident tendency of Repair and maintenance costs increasing with Days at sea. However, there are to be other factors influencing these costs, such as vessel size or vessel age.

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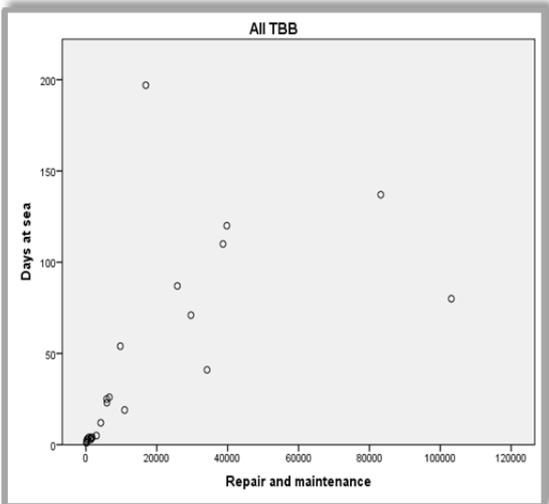
Fig. 42 Repair and maintenance costs vs. Days at sea for TBB
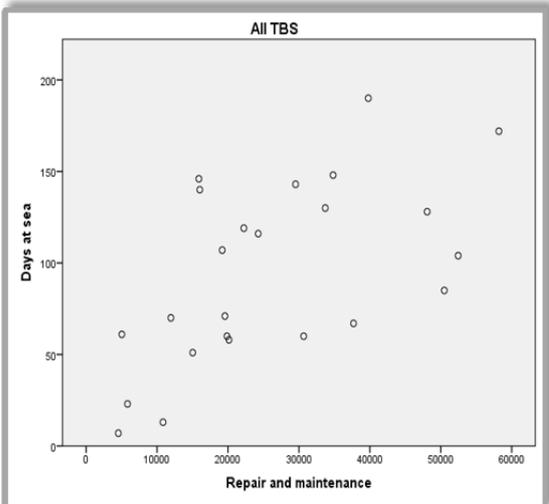
Fig. 43 Repair and maintenance costs vs. Days at sea for TBs
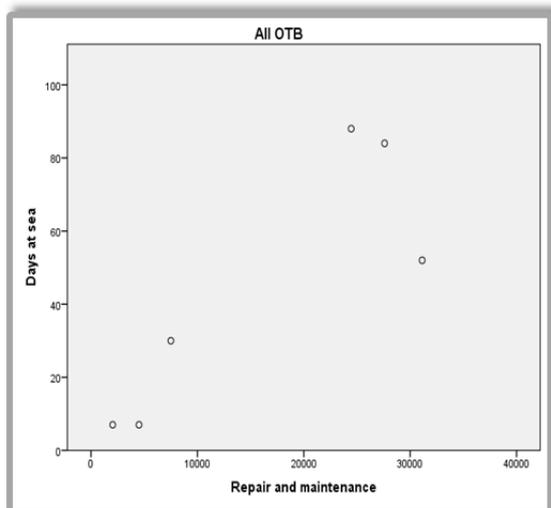
Fig. 44 Repair and maintenance costs vs. Days at sea for OTB
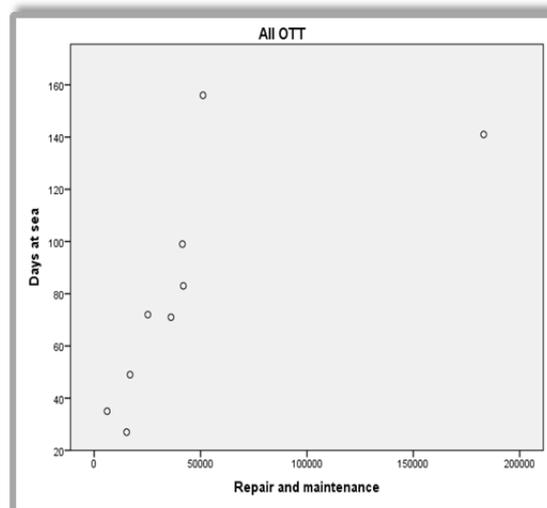
Fig. 45 Repair and maintenance costs vs. Days at sea for OTT

The following table gives an example of the data used. It comprises the total costs aggregated over the gear.

Table 8   Overview over the totals of the variables from the sampled vessels (Netherlands)

Fishing Technique	Days at sea	Repair and maintenance costs	Energy cost	Energy consumption	Revenue	Volume	Variable cost
OTB	268	97233	381082	745366	1341281	311776	219341
OTT	733	417139	926267	1582022	3364859	1162404	483456
TBB	1035	425275	1695011	3095810	5233789	1163459	691255
TBS	2269	625727	1563963	2796661	7595346	1649943	1249009

NB: OTT stands for otter twin trawl, and TBS is beam trawl on shrimp.

Summary

Repair and maintenance costs appear to rise when the number of Days at sea increases. While TBB have the highest Energy costs and also show the highest Energy consumption, the variable costs are highest for the TBS fleet segment. The latter appears to be as well the segment with the highest Revenues.

The Polish example

Data availability

Poland delivered capacity, effort, Revenue, Landings and cost data from 2009 for 207 vessels which constitutes about 30% of the total population. The coverage rate varied among fleet segments from 5% to 32% (table 1). Polish cost data are collected on annual questionnaires. Effort, capacity, Revenue and Landings are derived from administrative databases (logbook, sales notes and fleet register) and are available on a daily basis.

Only data for these vessels for which a sufficient level of confidentiality (i.e. more than 3 units in aggregation) was ensured could be provided. This caused that vessels of distinct technical characteristics could not be shown. In order to increase the number of available units GT and kW was rounded to the decimal (i.e. 154 kW = 150 kW).

Table 9   Number and capacity of the fleet subject of workshop test

Tech	VesLen	sample			% of total population		
		No of vessels	GT	kW	No of vessels	GT	kW
PG	VL0010	159	456	4180	32%	26%	25%
	VL1012	9	100	590	14%	13%	12%
HOK	VL1218	6	190	720	16%	14%	12%
DFN	VL1218	7	240	790	28%	32%	26%
DTS	VL1218	5	100	430	10%	7%	5%
	VL1824	1	40	120	5%	3%	2%
	VL2440	1	140	420	10%	12%	14%
TM	VL2440	19	2800	7820	31%	32%	32%
TOTAL		207	4066	15070	27%	23%	21%

Small vessels with an overall length not exceeding 10 m, using passive gears dominated in the analyzed data, which more-less reflects the relative structure of the total Polish fleet. In case of these vessels Crew costs can be underestimated due to the problem of unpaid labour of the fishing vessel owner. A very small number of units belonging to HOK (6 vessels) DFN (7 vessels) or DTS (7 vessels) makes it difficult to draw common conclusions.
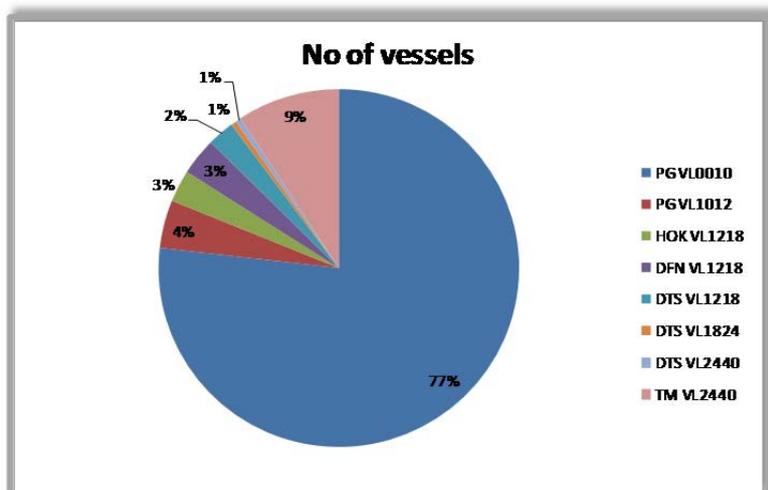
Fig. 46 Relative number of vessel analyzed by fleet segment.

Crew costs

The calculations proved a high correlation between annual Crew costs and annual Revenues produced by the vessels. This should not be surprising since in Poland the remuneration is often a share of the value of the catch. Nevertheless, as pointed out above, in case of small vessels the Crew cost may be underestimated (limited to social security costs only) or zero Crew costs are reported. This explains why so many observations on the graph are close to zero (Fig. 47). Moreover, some correlation between vessel length and crew costs has been observed (Fig. 48) which is rather straightforward since bigger vessels produce usually higher revenues.
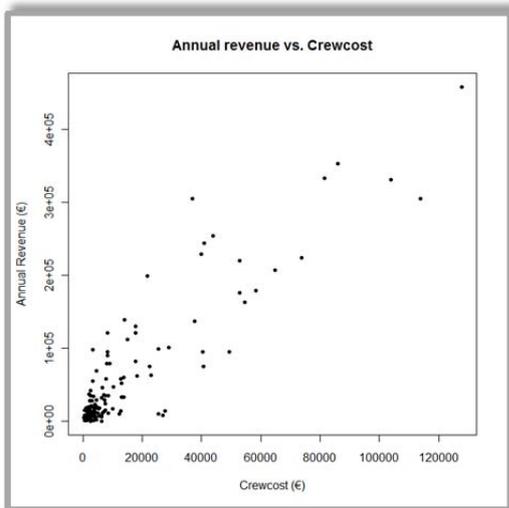
Fig. 47 Annual revenue vs. Crewcost
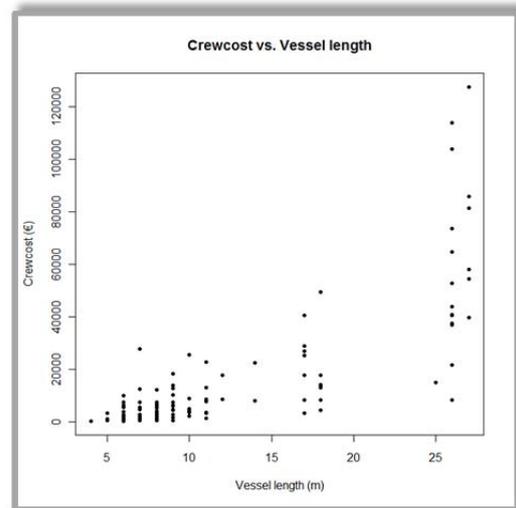
Fig. 48 Crewcost vs. Vessel length

Energy costs

Very high correlation (close to 1.00) between vessel size and Days at sea versus Energy costs was observed (Fig. 49). Since Days at sea and engine power (kWdays) are available at high resolution level they may serve as very good indicators for allocating Energy costs to different métiers. Correlation coefficients remained at high level (0.9) for two segments (DTS, TM) and 0.8 for HOK. Two segments are characterized by low correlation - DFN (0.31) - and PG (0.34). Additional tests may be useful to check whether it is the result of different fishing techniques applied i.e. passive gears, or whether it can be explained by a small number of observations for DFN as well as underestimated Energy costs for the PG segment, for which data are usually not derived from bookkeeping or any other formal records.
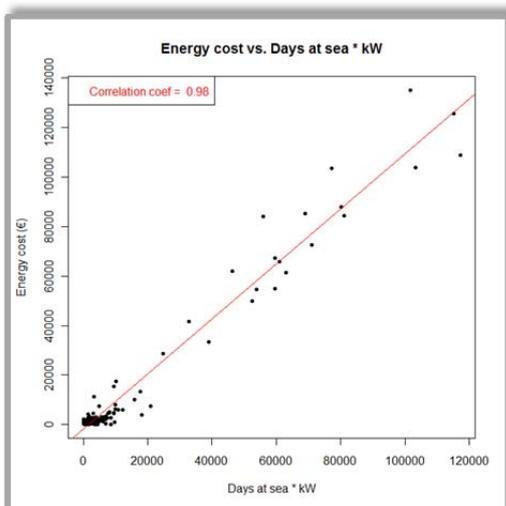
Fig. 49 Energy cost vs. Days at see*kW

Repair and maintenance costs

Repair and maintenance costs were check against Days at sea and vessel size (kW and length). Poor correlations were observed for all analyzed fleet segments. Achieved results are presented in Fig. 50 - Fig. 52. For the Polish sample, Days at sea do not appear to be an explicit driver for Repair and maintenance costs. Despite of some vessel repairs (often minor) that are made during the year, the most costly ones may occur once every couple of years and as such may not reflect the intensity with which vessel was used during the year but also years prior to the repair. Another explanation may be the specific cod quota allocation system that was in use in Poland in 2009 which caused that a part of the fleet had to suspend cod fishery and got a financial compensation in return. These vessels might use additional non fishing days for repairs using compensation money. If it is the case, Repair and maintenance costs may be even negatively correlated with Days at sea.
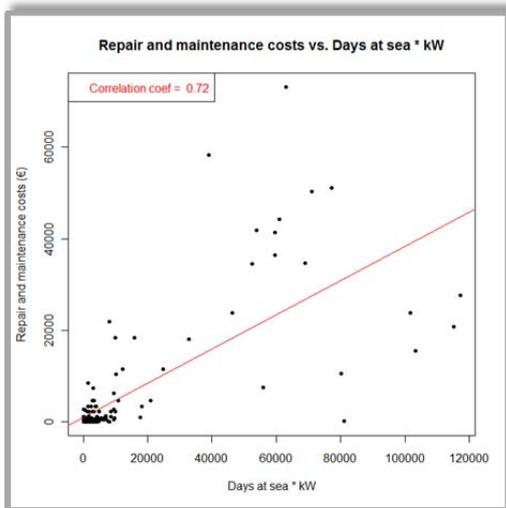
Fig. 50 Repair and maintenance costs vs.Days at sea*kW
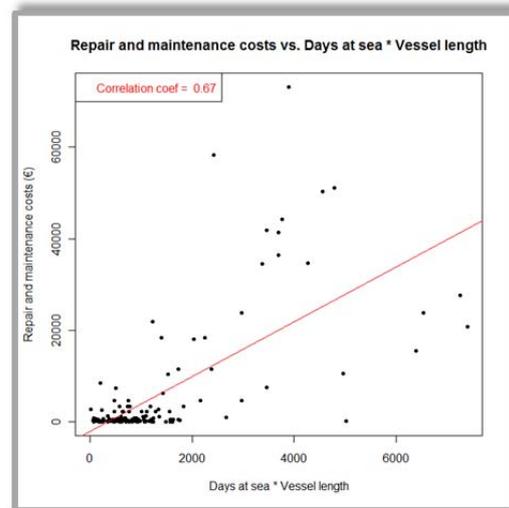
Fig. 51 Repair and maintanance costs vs. Days at sea*vessel length
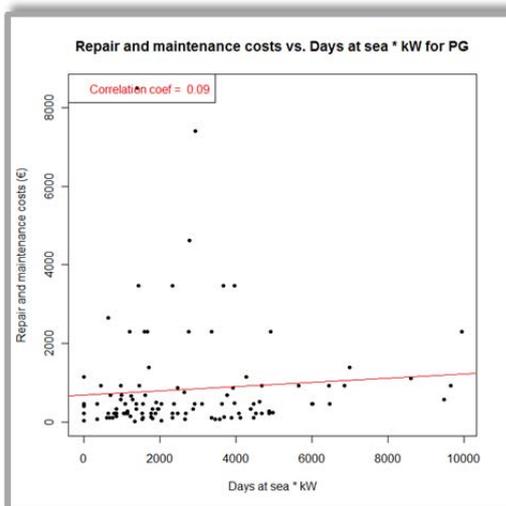
Fig. 52 Repair and maintenance costs vs.Days at sea*kW for DFN

Other variable costs

In the Polish case, Other variable costs mainly constitute of costs for fishing gear (40%), food (17%), ice (15%), protective clothes (5%) and other materials (23%). For all tested vessels this cost item, similarly to energy costs, correlates with time that vessels spend at sea and its size (either measured by length or engine power – see Fig. 53 and Fig. 54).

The results for specific segments were similar to those achieved from the analysis of Energy consumption. Other variable costs

No or low correlation were observed for DFN (negative value) or PG (0.29-0.41). These are vessels segments that deploy mainly passive gears. A quite high correlation (0.83-0.85) was observed for data on TM segments, which seem to be the most reliable (based on book keeping information).
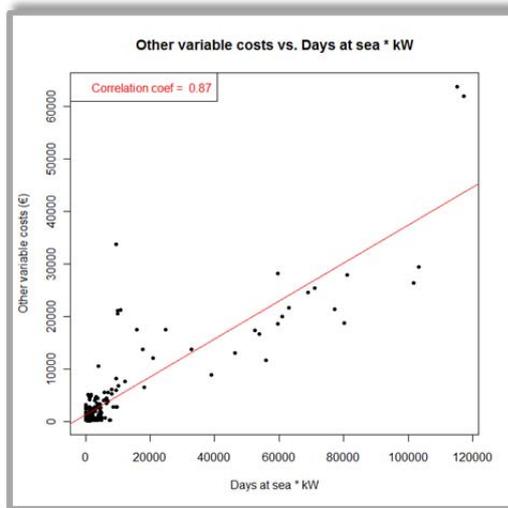
Fig. 53 Other variable costs vs. Days at sea*kW
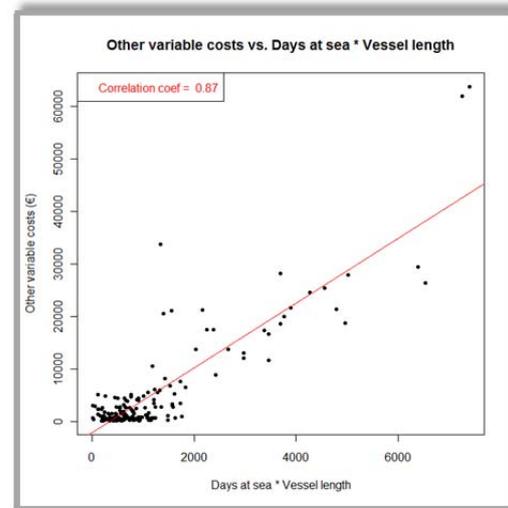
Fig. 54 Other variable costs vs. Days at sea*Vessel length

5. Data quality and availability

Plots of transversal vs. cost data have indicated moderate or strong scattering. Three main reasons have been discussed.

Firstly, it is likely that vessels/companies vary by certain characteristics. For example, an older vessel might operate less fuel-efficiently than a newer one, even though both are of the same size. There might be also differences in steaming behavior between similar vessels, which will also affect the Fuel consumption and therefore Fuel cost.

Secondly, some costs might incur at lower frequencies than the sampling. For instance, the class has to be renewed only every 4 years. This can imply particularly high Repair costs and class fees in one year, but considerably lower amounts in the intermediate years. This phenomenon refers mainly to costs which accrue at longer intervals. Thus it will be less likely in the case of Crew cost and Fuel cost. But even in these cases some expenses might be accounted for out-of-period, for instance if fuel has been bunkered in the precedent year or if bills have been paid in the subsequent year.

Thirdly, scattering can be caused by wrong data. The reasons for that might be manifold and range from typographic errors to lack of accounting and imprecise estimates by the vessel owner, ambiguous wording in questionnaires, misunderstandings and intentional misreporting. A typical case of evidently wrong data is a vessel with some effort but zero Fuel cost. A special case is related to Crew cost. For some vessels, Crew cost is accounted for without the owner, for other vessels the owner's salary might be included.

Mistakes might occur in both transversal and cost data. Transversal data (capacity, Landings and effort) are in most cases collected under certain legally binding regulations, which are associated with the option of enforcement and fines. Under these circumstances it is at first glance more likely that these data are more reliable. In contrast, in several member states there is no legal obligation for fishing companies to provide cost data. In these cases no measure of enforcement or fining is established, and data are provided on a voluntary basis.

Table 10).

Table 10   Availability of data under consideration in the context of disaggregation and some characteristics

MS	variable	source	comments	temporal resolution	spatial resolution
all	effort, species, gear characteristics, region	logbook	not available for vessels <8m (Baltic), <10m, most of MED, BS, French overseas depts.; see Implementation of Control Reg no. 2011/404, (for NLD: available for all vessels)	daily (hourly)	statistical rectangle (but if a trawl crosses several rectangles, only one rectangle is reported)
all	effort, species, gear characteristics, region	surveys, panel (NL except for region),	in case logbooks are not available (mandatory to provide in LTU)	monthly (LTU), trip (NLD)	none (can be derived from port for small vessels)
all	capacity	fleet register	exhaustively available	daily	NR
all	species, revenue, weight	sales notes, landings declaration	exhaustively available, except for French overseas departments	as logbook or effort source	as logbook or effort source
FRA	species, revenue, weight	surveys	MED, French overseas departments	daily (sample per trip)	none (can be derived from port for small vessels)
LTU	all variable cost data (crew, fuel, rep&maint., other var. cost)	business statistics	legal obligation to provide data	annual	NA
NLD	all variable cost data (crew, fuel, rep&maint., other var. cost)	panel	some segments ("medium size")	daily	NA
POL, FRA, NLD, DEU	all variable cost data (crew, fuel, rep&maint., other var. cost)	survey	(POL: legal obligation to provide data)	annual	NA
NLD, FRA, DEU	all variable cost data (crew, fuel, rep&maint., other var. cost)	accountants' network	some segments ("medium size")	annual	NA

6. The use of VMS data for allocation of effort and earnings

An approach of using vessel monitoring system (VMS) data to enhance the spatial resolution of effort and landings has been presented. The procedure is based upon the analysis of position, speed and heading information as provided with the VMS data. Trawling is identified through the velocity profile, and the total catch, which is derived from logbooks. The approach is being used to assign effort and landings to 3 nm squares, i.e. an ICES rectangle is being disaggregated into 100 squares. A typical example for the application of this method is marine spatial planning. Given a close correlation with effort/landings, also cost data can be estimated for smaller spatial units. For details see H. Fock: Fisheries in the context of Marine Spatial Planning: Defining principal areas for fisheries in the German EEZ. Marine Policy 32, 728-739 (2008).

7. Further issues

A presentation on cost accounting was given. Several issues have been illustrated, e.g. the differentiation of direct and indirect costs, the identification of cost drivers or the suitability of activity based cost accounting.

The Dutch procedure for determination of the métier for a fishing activity has been presented. Most of the information required is derived from logbooks (gear, target assemblage, mesh size group). An encoding table is required to transfer logbook entries into the code as required under the DCF métier specification.

List of figures

List of tables

8. **Appendix: the templates distributed in preparation of the workshop to request exemplary input data for analysis**

Instruction sheet

The attached tables should serve as templates for providing data which can be used for exemplary calculations.
It is always helpful to have data available in the same format.
We do not need data for the entire fleet, just a reasonable set as basis for further analysis.

General	
file name	please replace "MS" in the file name by your 3-letter country code
vessel selection	choose vessels for which all data are available
currency	provide all values in Euro, if feasible
vessel ID	use an unambiguous and anonymous ID for each vessel, starting with 3-letter country code

sheet "capacity"	from fleet register, segmentation as in DCF appendix III
Nat	use 3-letter country code
LoA	length over all **(rounded to meters)**
GT	gross tonnage (if gross tonnage allows to identify the vessel, please alter it slightly)
kw	kilowatt (if kW allows to identify the vessel, please alter it slightly to ensure confidentiality)
crew	number, from fleet register
Tech	use 3(2)-letter code as in data call
VesLen	Vessel Length class; use "VL…." as in data call

sheet "cost"	as defined in DCF appendix VI
crewcost	wages and salaries of crew
fuelcost	energy costs
fuelcons	energy consumption, in litres
repmaint	repair and maintenance costs
othvarcost	variable costs (other operational costs)

sheet "land_effort"	
trip_ID	6 digit number to unambiguously identify each trip
volume	live weight of total catch considered
revenue	referring to total catch considered
hrsfished	hours fished, where applicable, see Appendix VIII DCF
seadays	days at sea as defined in DCF
fishdays	fishing days as defined in DCF
division	Level 3 (or 4, where available) stratification, see Appendix I and https://datacollection.jrc.ec.europa.eu/web/dcf/wordef/fishing-area
metier	preferably use coding as provided in http://www.ices.dk/pubs/crr/crr296/CRR%20296.pdf page 34 ff e.g. "GNS_DEF_110-156_0_0"; see also DCF appendix IV

Capacity sheet, header

Nat	Vessel_ID	LoA	GT	kw	crew	Tech	VesLen

Cost sheet, header

Vessel_ID	crewcost	fuelcost	fuelcons	repmaint	othvarcost

Landings and effort sheet, header

Vessel_ID	trip_ID	volume	revenue	hrsfished	seadays	fishdays	division	metier

NB: it turned out that it would have been beneficial to provide landings and effort data in separate tables.

**Annex 5 – Presentation of the results of the Workshop on statistical issues**

WORKSHOP on Statistical Issues

Lisbon – 26 – 30 September 2011

TOR

1. Present national methods to define sample size, accuracy indicators and estimate results.
2. Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data.
3. Evaluate methods, advantages and disadvantages of collecting data using non-probability sampling surveys. Consider the results of the proposed Study to Standardize Quality Reporting and Propose Methods in the case of Non-Probability Sample Survey.
4. Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-response.
5. Prepare Guidelines to MS for best practices in statistical analysis and on how to define and select the appropriate sample sizes to be proposed in National Programmes.

TOR 1 – Presentation on National Methods

TOR 1 – Presentation on National Methods
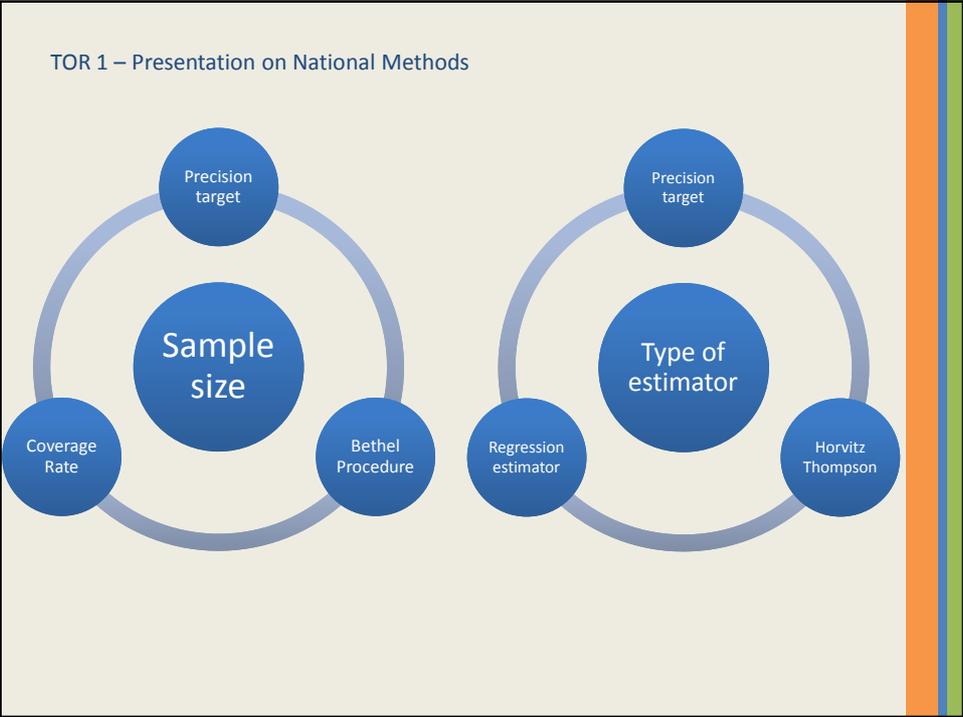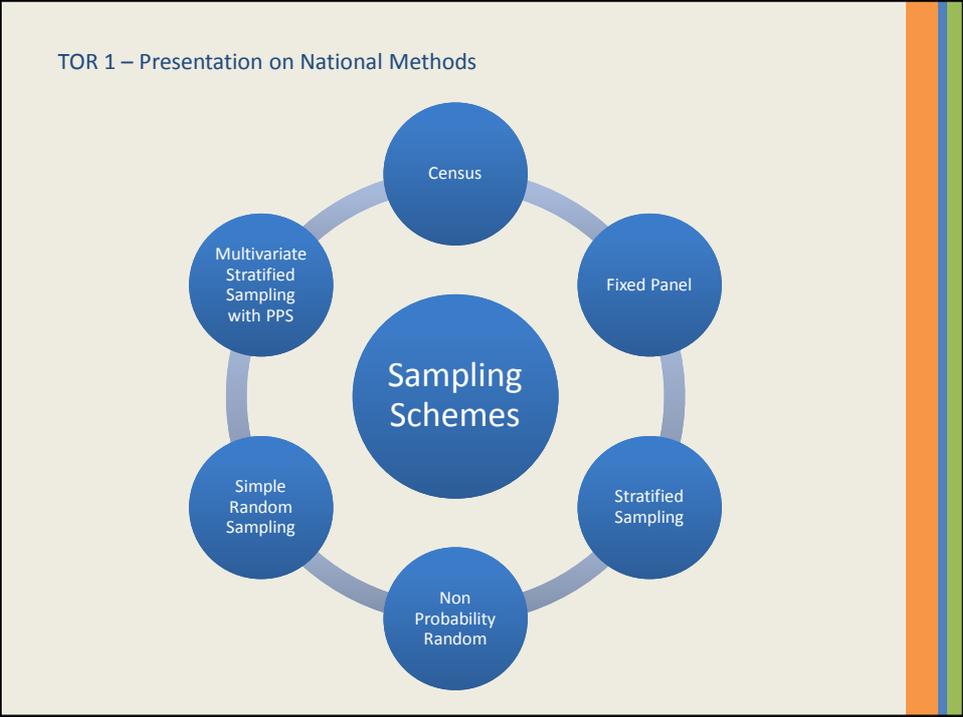
TOR 1 – Presentation on National Methods

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Questions that need answer:

1 – Is data comparable between MS?

2 – Is the quality of data sufficient for the DCF purposes?

3

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Process of data collection

Question 1

1 - Definition of the statistical process

2 - Collection of data

3 – Quality control

4 – Missing data imputation

5 – Production of estimates

6 – Aggregation process/Compilation of final data

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Process of data collection

Question 1

MS custom process

Common Statistical Framework

1 - Definition of the statistical process

2 - Collection of data

3 – Quality control

4 – Missing data imputation

5 – Production of estimates

6 – Aggregation process/Compilation of final data

4

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Question 2

Quality of data

Are we getting enough quality on economic data?

Quality is a subjective concept. It depends on the end user's needs!!

How can we measure quality?

DCF Regulation may provide an answer: Precision levels

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Question 2

DCF regulation 2010/93/UE

PRECISION LEVELS AND SAMPLING INTENSITIES

• *Where quantitative targets can be defined, they may be specified either directly by sample sizes or sampling rates, or by the definition of the levels of precision and of confidence to be achieved.*

• *Where reference is made to a sample size or to a sampling rate in a population defined in statistical terms, the sampling strategies shall be at least as efficient as Simple Random Sampling. Such sampling strategies shall be described within the corresponding National Programs.*

• *Where reference is made to precision/confidence level the following distinction shall apply:*
  (a) Level 1: level making it possible to estimate a parameter either with a precision of plus or minus 40 % for a 95 % confidence level or a coefficient of variation (CV) of 20 % used as an approximation;
  (b) Level 2: level making it possible to estimate a parameter either with a precision of plus or minus 25 % for a 95 % confidence level or a coefficient of variation (CV) of 12,5 % used as an approximation;
  (c) Level 3: level making it possible to estimate a parameter either with a precision of plus or minus 5 % for a 95 % confidence level or a coefficient of variation (CV) of 2,5 % used as an approximation.

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Question 2

So what is the big question we should ask?

What is the impact of quality in economic data?

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Simple example: In a certain stratum a total income of 20 000 000 eur was estimated.

What does this means?

The importance of this value (and it's interpretation) depends on the precision associated with it

With a precision level 3 (maximum CV of 2.5%) it means that the maximum error will be
error = 980 000 eur
Which means…
We have a 95% chance that the real total income is between
19 million eur and 21 million eur

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

With a precision level 2 (maximum CV of 12.5%) it means that the maximum error will be
error = 4 900 000 eur
Which means…
We have a 95% chance that the real total income is between 15 million eur and 25 million eur

With a precision level 1 (maximum CV of 20%) it means that the maximum error will be
error = 7 840 000 eur
Which means…
We have a 95% chance that the real total income is between 12 million eur and 28 million eur

---

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Summary   Total Income estimated: 20 000 000 eur

Precision level 3: Real value is somewhere between 19 and 21 million eur

Precision level 2: Real value is somewhere between 15 and 25 million eur

Precision level 1: Real value is somewhere between 12 and 28 million eur

Conclusion: Quality of data is important and cannot be ignored

TOR 2 – Identify best practices regarding estimation procedures, assessing quality of data collected and define minimum targets for quality of economic data

Main conclusions

- Guidelines for the AR are not clear and don't evaluate quality as global
- Guidelines for quality indicators calculations can be essential to achieve harmonization and comparability between MS
- AR should explain the quality of the data in a qualitative way
- Indicators must be common, selected from a short list of possible values
- Quality is something that goes beyond the numbers
- Further work needed on quality indicators for NPSS and high non response rates
- Quality must be taken into account in next STECF meetings

TOR 3 – Evaluate methods, advantages and disadvantages of collecting data using non-probability sampling surveys

Why NPSS?

- Difficulties in getting data from respondents
- Difficulties in getting good quality data
- Good access and availability of administrative records
- Good quality non random data is better than bad random data

9

TOR 3 – Evaluate methods, advantages and disadvantages of collecting data using non-probability sampling surveys

	PSS	NPSS
Advantages	• Less prone to bias • Allows estimation of magnitude of sampling error, from which you can determine the statistical significance of changes/differences in indicators	• More flexible • Less costly • Less time-consuming • Judgmentally representative samples may be preferred when small numbers of elements are to be chosen • Higher response rates
Disadvantages	• Requires that you have a list of all sample elements • More time-consuming • More costly • No advantage when small numbers of elements are to be chosen • Lower response rates	• Greater risk of bias • May not be possible to generalize to program target population • Subjectivity can make it difficult to measure changes in indicators over time • No way to assess precision or reliability of data

TOR 3 – Evaluate methods, advantages and disadvantages of collecting data using non-probability sampling surveys

Main Conclusions

Under certain circumstances a NPSS can be provide results with enough quality for the DCF Regulation

MS are using NPSS because they couldn't achieve good quality with PSS, namely low response rate and bad quality responses

NPSS can only describe the units for which data is collected. It cannot be used to make estimations to the total population. Some extra analysis of the non respondents are recommended in order to assess bias.

Additional information on units (like national registers, tax data,…) is needed in order to implement quality control

MS should explain, in their NP, why they use NPSS

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

Why do we have high non response rates?

- Problems with frame population definition
- Problems with construction of the questionnaire
- The way the questionnaire is sent (eg. Post mail, interviewers,...)
- Outdated contact database
- Requested information too difficult to be made available
- Personal interest/concerns of respondents (e.g. afraid of IRS)
- Disinterest of respondents
- Exhaustion of respondents (many competing surveys

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

Why is it bad to have high rates of non response?

- Resulting sampling data might lose representativity (bias is introduced)
- PSS with high non response rate = NPSS

## How is non response affecting the quality of economic data?

- We don't know
- Without further studies on non response it won't be possible to estimate it's impact on quality

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

How to deal with non response
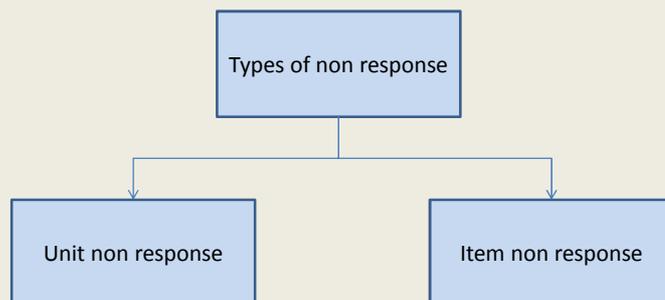
Types of non response

Unit non response

Item non response

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

Missing data

MCAR – Missing Completely At Random

MAR – Missing At Random

MNAR – Missing Not At Random
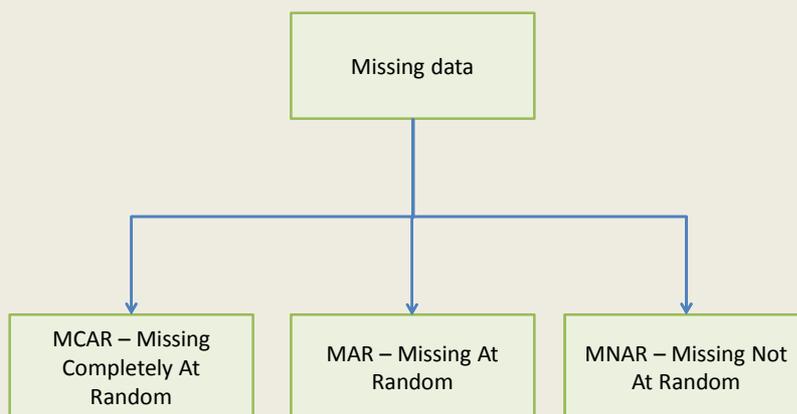
TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

MCAR - Missing Completely At Random

- Missing cases are no different than non-missing cases, in terms of the analysis being performed

- Missing data is not dependent of any other variable, observed or not

- Thus, these cases can be thought of as randomly missing from the data and the only real penalty in failing to account for missing data is loss of power

- Problem is to conclude that missing data is MCAR

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

MAR – Missing At Random

- Missing data depends on known values and thus is described fully by variables observed in the data set
- Accounting for the values which "cause" the missing data will produce unbiased results in an analysis.

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

MNAR – Missing Not At Random

• Missing data depends on variables not observed in the data set

• This case will produce bias on the final estimates

• This can be changed to MAR if there are some additional information that can be used.

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

It is possible to overcome (to a certain limit) non response.
Keyword: Imputation
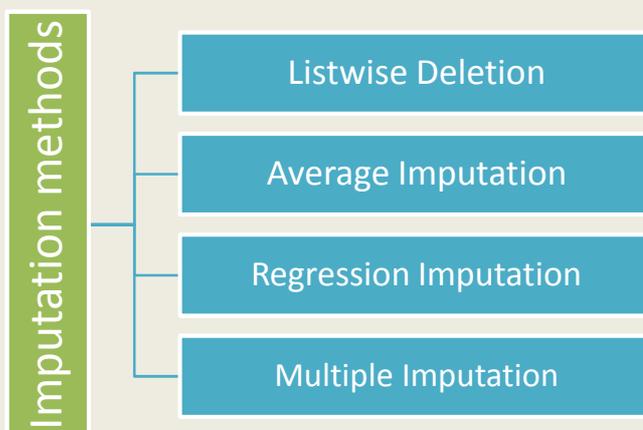
Imputation methods

Listwise Deletion

Average Imputation

Regression Imputation

Multiple Imputation

TOR 4 – Address Non-Response issues, including how Non Response can influence quality. Propose methods to deal with high level of non-responses.

Conclusions

When having high non response rates MS must took actions in order to know why they are having these rates

High non response rates introduce bias and lack of representativity

Without further information the bias cannot be estimated

The study on non response must be made in order to assess the impact on the quality of economic data

There are statistical tools available that can mitigate the impact of non response

TOR 5 – Prepare Guidelines to MS for best practices in statistical analysis and on how to define and select the appropriate sample sizes to be proposed in National Programmes.

- Clearly define the frame population
- Sample – Should we decide sample size based on precision targets?
- Low response rate – what are the reasons and how to minimize it
- Collaboration from the sector (eg. Producers organizations) might lead to better response rates
- Feedbacks to the sector about the results of the studies might also improve response rates
- Improvements on questionnaires can also improve response rates. Eg make questions simple to understand to the respondents
- Diversify the means of answer, by providing multiple ways for answering the questionnaire, like mail, internet, interviews and to use different techniques with different subgroups of the population

11/3/2011

TOR 5 – Prepare Guidelines to MS for best practices in statistical analysis and on how to define and select the appropriate sample sizes to be proposed in National Programmes.

- NPSS are alternative methods when MS can't have good quality with PSS

- MS should use auxiliary data to improve estimates

- Use of multiple sources, include administrative data

- Models at least as efficient as regression models should be use to calculate estimates

- Quality of data is important but it can be a larger concept than the statistical quality

- MS should write some comments about qualitative aspects of their data quality in their AR

- Panel data with a partial rotation allows for time series analysis by the MS.

- Enforce the idea of confidentiality of responses

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Abstract
The STECF Expert Working Group (EWG) on reflections on the review of economic data collected in relation to the DCF and harmonisation of sampling strategies (EWG 11-18) met in Salerno, from 17th to 21st October 2011. The EWG dealt with a broad range of issues that are important in the improvement of the collection of economic data and in the evolution of the DCF. STECF reviewed the report during its Plenary meeting on 7-11 November 2011.

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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