

## **3<sup>rd</sup> Planning Group on Economic Issues (PGECON)**

**May 31 - April 4, 2014**

**Arranged by the Thünen-Institute of Sea Fisheries at the  
Center for Technology and Society, Technical University of Berlin**



## TABLE OF CONTENTS

1	Executive summary	1
2	Terms of Reference for PGECON 2014 in Berlin	3
3	New developments on DCMAP (presentation by Angel-Andres Calvo-Santos)	4
4	Workshops	5
4.1	Evaluation of data collection connected to Fishing Rights and Capital Costs" (Gothenburg, 2013)	5
4.2	Statistical issues and thresholds" (Helsinki, 2013)	7
4.3	Common understanding and statistical methodologies to estimate/re-evaluate transversal data in small-scale fisheries" (Nantes, 2013)	11
5	Compilation of a list of end users of dcf fleet economic data and their requirements (resolution, quality) Compare dcf fleet data properties with requirements and interpret the differences (what can be achieved, which prerequisites?)	16
6	Harmonisation of DCF/DCMAP data collection on fish processing/aquaculture with Eurostat approach	19
7	Proposal of studies and workshops (including identification of chairperson, and possible venue and dates)	21
8	Next year PGECON: date and venue and appointment of the chair person	32

## TABLE OF ANNEX

<b>Annex 1:</b>	DCF PGECON 2014 in Berlin - Agenda	33
<b>Annex 2:</b>	PGECON 2013 List of Participants	35
<b>Annex 3:</b>	Presentation on future DCMAP	37
<b>Annex 4:</b>	Presentation on harmonisation of Eurostat and DCF/DCMAP Aquaculture data collection	40



## **1 EXECUTIVE SUMMARY**

The second Planning Group on Economic Issues met in Berlin, from March 31 to April 4, 2014. The terms of reference for the meeting are given in section 2 (p.3). 21 representatives from 15 Member States and one expert, from each of the bodies: JRC, Eurostat and DG Mare, attended the meeting.

PGECON is an operative meeting with a general aim to compare different approaches and to share different experiences. Participation is open to national experts involved in the implementation of the economic modules of the Data Collection Framework (DCF). PGECON aims to provide useful inputs to improve MS sampling schemes.

Recent developments in the discussion on the DCMAP legislation were presented by a DG Mare representative. A greater focus on small scale fisheries was suggested. Moreover, end users' needs are intended to be better taken into account.

The outcome of three workshops with relation to DCF economic data was presented and discussed. At the Nantes workshop transversal data for small scale fisheries were evaluated. PGECON supported the conclusions of the workshop, amongst others the need for a more precise definition of end users' needs and a reduction of variables to be collected. In the case that very detailed information is required a specific regional data collection might be considered using automatic IT geo-positioning tools.

At the Gothenburg workshop the determination of the value of vessels and of fishing rights was analysed. Input from a ship broker showed that market prices for vessels grossly depend on aspects which are different from the physical properties of the vessel. Often the major part of the value comes from the quota which is attached to the vessel. These conditions may vary by region and by fishery. PGECON supported the view that the Perpetual Inventory Method (PIM) might not always address the estimation of vessel values properly. Thus other approaches should be allowed to be pursued. For the valuation of fishing rights two approaches were presented at the workshop, both mainly addressing the value of future catches. PGECON supports the approach and suggests a study on the estimation of intangible assets.

At the Helsinki workshop on statistical issues and thresholds, the distinction between active and less active vessels was discussed. It turned out that in all MS's, a considerable number of vessels land significantly less fish than that necessary to constitute a livelihood. The fishing activities of those vessels cannot be regarded as professional and as they have a different cost structure, they can cause a gross bias to economic figures when merged with figures from vessels of professional fishermen. Thus a distinction between those two groups of vessels was suggested. PGECON supports that approach and suggests a workshop on that topic.

Reporting of data quality was a major issue in Helsinki. Sampling design and data evaluation were the topic of a lecture. It was regarded as extremely helpful to have the issue presented in the form of a handbook. This view is strongly supported by PGECON.

The issue of harmonisation between DCF and Eurostat has been discussed for the data collection on aquaculture. The presentation by Eurostat highlighted the differences and the difficulties. PGECON concluded that the space for further harmonisation appears rather limited as both types of data collection serve different purposes.

The issue of end user needs with respect to the resolution of fleet economic data was discussed. PGECON reiterated the urgent need of launching a study on methodologies and standards for disaggregation using additional data.

Along with the studies mentioned before, PGECON repeats the need for several studies which have been strongly recommended, some of them for several years:

- Origin and Sources of Raw Material in the European Seafood Industry
- Study to disaggregate economic variables by activity and area
- Handbook on sampling design and estimation methods for fleet economic data collection
- Harmonise quality reporting and propose methodology in the case of non-probability sample survey
- Pilot study on social indicators
- Study to propose methodologies for estimation of intangible assets in EU fisheries

PGECON 2014 suggested three workshops for 2014:

- Aquaculture data collection
- Thresholds for activity levels
- Linking economic and biological effort data /call design

## **2 TERMS OF REFERENCE FOR PGECON 2014 IN BERLIN**

Several reports from expert meetings have been taken into consideration for drafting the terms of reference for PGECON (e.g. EWG11-18, EWG13-18). The final version was compiled in consultation with experts from Member States and with the Commission.

- A)** Workshop "Evaluation of data collection connected to Fishing Rights and Capital Costs" (Gothenburg, 2013):
  - Presentation by Anton Paulrud
  - Discussion
  - Conclusions, recommendations
- B)** Workshop "Statistical issues and thresholds" (Helsinki, 2013)
  - Presentation by Jarno Virtanen
  - Discussion
  - Conclusions, recommendations
- C)** Workshop on "Common understanding and statistical methodologies to estimate/re-evaluate transversal data in small-scale fisheries" (Nantes, 2013)
  - Presentation by Evelina Sabatella
  - Discussion
  - Conclusions, recommendations
- D)** Harmonisation of DCF/DCMAP data collection on fish processing/aquaculture with Eurostat approach (Eurostat expert participation required - pending):
  - Which are the principles applied by Eurostat (threshold, sources, definitions)
  - Which are the differences between Eurostat and DCF and how can they be addressed/which are the consequences? (e.g. thresholds, enterprise/company, quality control)
  - Can some Eurostat data be transferred directly to DCF database, if yes, under which circumstances?
- E)** Compile list of end users of DCF economic data and their requirements (resolution, quality)  
(e.g. issues raised at EWG14-2 Hamburg: further requirements from bio-economics workshop, quota price information)  
Compare DCF data properties with requirements and interpret the differences (what can be achieved, which prerequisites?)
- F)** Comments on DCMAP draft; discussion of variable definition (experience, any recommendations?) -tentative, depends on availability of new information
- G)** Feasibility of linking biological and economic data through transversal data.  
How to solve the problem of different level of (dis)aggregation.
- H)** Description of workshops and studies for the upcoming period (including identification of chairperson, and possible venue and dates)

The full list of participants at PGECON is presented in Annex 2:

### **3 NEW DEVELOPMENTS ON DCMAP (PRESENTATION BY ANGEL-ANDRES CALVO-SANTOS)**

The Data Collection Framework legislation is undergoing several changes.

The Basic Regulation (EU) No 1380/2013 of the EU Parliament and the Council has been adopted while EMFF, DCF Council Regulation and EU Multi-annual Programme are still pending adoption.

More emphasis is intended to be put on end users' needs, with respect to resolution and quality. A focus is intended on small-scale fisheries.

The architecture of data collection is under consideration. The structure of governance and assignment of responsibilities has to be defined.

The related presentation is provided in Annex 1:.

## **4 WORKSHOPS**

### **4.1 Evaluation of data collection connected to Fishing Rights and Capital Costs” (Gothenburg, 2013)**

A presentation was given about the workshop on the evaluation of data collection on fishing rights and capital costs (tangible and intangible capital value). This was recommended by PGECON 2013 and held in Gothenburg, 18-22 November 2013. The Terms of reference for the workshop were as follows:

- compare price per capacity unit, depreciation rates and other assumptions applied by MSs in estimating capital value and capital costs
- investigate regionalisation of price per capacity unit (PCU), depreciation rates and other assumptions applied by MS in estimating capital value and capital cost
- explore the existing sources of PCU for each MS
- explore possibilities for harmonising sources used to calculate PCU
- determine the definition of replacement/current value of capital and the annual depreciation of the fleet for the DCF glossary
- investigate the types of fishing rights used in each MS and how their value is determined
- investigate standardisation of the value of fishing right calculations.

#### **Capital Costs**

The workshop highlighted major drawbacks in the application of the PIM in some Member States which would lead to a gross overestimation of capital value when compared with the real world. Whilst it was considered that the method was well described, there were problems arising from the assumptions built into the PIM and in particular from the input data. Particular issues highlighted were:

- Input parameters are difficult to obtain and variable over time
- Assumption made that investments are made in accordance with depreciation period
- A number of options given for price per unit (insurance value, book value, market value hedonistic value)
- No agreed standard for determination of the input parameters so it is likely that results across EU are not harmonized

Depreciation and investment data could be derived directly from accounts data, where available. Market value was considered to be the most suitable source for opportunity costs. However, these were difficult to obtain as sales were few. The sale price of a vessel might also include the value of fishing rights in cases where these were attached to the vessel. The ability to correctly separate tangible and intangible assets was therefore seen as being key.

The Workshop concluded that the PIM should remain as an accepted model but recommended that it should no longer be seen as the sole methodology or even the methodology of first choice. It was recommended that Member States should consider use of an alternative method involving tailoring PIM methodology to fit national situations and where necessary by supplementing account data with surveys. The number of input variables should be limited.

## **PGECON Discussion points:**

PGECON further considered the use of market values (i.e. estimating total sales value minus rights value) compared with the book value. Note was taken of the Swedish experience of using insurance values, where for many wooden hulled vessels, insurance value was zero. This is replicated across MSs but was considered not to be necessarily incorrect. The real value might reside in the quota, excepting where vessels were either new or renovated. This pointed towards a need for more information. However, the problem would remain where the book value included the value of quota but the two were not easily separated.

There was consideration that the true value of the assets related to the actual value that fishermen paid and that any other estimation was merely speculation. The book value approach was therefore thought to be as good a method as any other in determining this and it was believed that the investment behaviour of fishermen would be accurately reflected in their books.

PGECON agreed with the workshop conclusions that the PIM itself has its limits and that it should be supplemented with additional information, if available. Furthermore it was considered reasonable for MSs to use whatever information was available to them. A study of available information on the capital value of vessels to build in to PIMs was suggested as being needed. It was agreed that a different approach might be needed for larger vessels compared with those from coastal fleets.

### **Conclusions/recommendations:**

- PGECON supports the Workshop view that PIM remained a valid methodology where inputs were reliable but that an alternative methodology would be preferable if such can deliver more realistic results;
- A study should be conducted into what information on capital values is available within MS. This study should also look at separating intangible assets and vessel depreciation. It should preferably be based on the *"Study on methodologies for estimation of intangible assets"*. The specifications of this study on capital values should be detailed at the next PGECON when the status of the latter study is clear.

## **Fishing rights**

The workshop noted that the DCF requires MS to provide estimates of the value of fishing rights held for each segment of their fleet "where appropriate". However, there was an absence of a defined methodology that Member States are required to follow. There was also no guidance available on what constitutes 'where appropriate'.

Only a few Member States had actually attempted to calculate and report the requested figures to the Commission. Those Member States (UK, Denmark, etc.) that have provided estimates have the most developed rights based

management systems in the EU. The workshop concluded that the methodology for rights valuation should be consistent with the AER Macro approach and made a number of recommendations as follows:

- The Net Present Value (NPV) approach to valuing fishing rights should be developed further, in particular the development of approaches to estimate profit per quota stock
- There was a need to identify and consider common discount rates and asset life values that could be applied consistently across MS evaluations of fishing right values;
- Further work is needed to understand the different quota management systems in each MS – particularly where quota is tradable and whether quotas were in public or private ownership

PGECON agreed that information on the value of quota was necessary. However, it was not clear what input information was needed to reliably estimate this or what an appropriate model would be. It was agreed that more consideration should be given to what requirements should be set in the DCF. The expression “where appropriate” was interpreted in such a way that “appropriate” means that fishing rights are tradable and thus prices of fishing rights are available.

#### **Conclusions/recommendations:**

- If fishing rights are tradable and thus data on the value of fishing rights are available, they should be provided. If the value of rights is to be estimated, it is not a matter of data collection, but of estimation procedure.
- The value of fishing rights should be addressed through a study – what data are needed, what are available and how should they be applied (which input is required to estimate the value of fishing rights)
- Within that study a standard approach for all MS should be developed (using existing approaches as a starting point).

## **4.2 Statistical issues and thresholds” (Helsinki, 2013)**

PGECON 2013 concluded that a workshop should be held to look into the issue of stratification between active and less active vessels and quality issues in economic data collection. This workshop was held in December 2013 in Helsinki and the results were presented at PGECON 2014.

The workshop was temporarily attended by professor Lehtonen who held a lecture on practical methods for design and analysis of complex surveys and presentations were made by different MS on their sampling strategies. The workshop concluded that the quality of the estimates could be enhanced if more use would be made of auxiliary information in the sampling design. It was recommended that a handbook should be prepared for best practices in

economic data collection, content for that handbook was elaborated and a study was proposed.

**Conclusions/recommendations:**

- PGECON recommends that the handbook for best practices in economic data collection as proposed by the workshop in Helsinki will be commissioned. It should facilitate the enhancement of the survey design and quality of the economic data.

In order to compare the quality of the current data collection an evaluation of the coefficients of variance (CVs) by segments and MSs was undertaken during the workshop. In many reports the CVs appeared unrealistically high. The group concluded that the CVs are still not determined uniformly across the MSs, although the guidelines on the JRC website are correct and clear. The workshop concluded that these guidelines should be included in the handbook and might be enhanced. Moreover, the workshop concluded that MS should include a methodological section in their national programme on the survey design and implementation and that MS should deliver an annual quality report. This report should contain both the sampling practice and the resulting CVs as quality indicators. The evaluation should look at the combination of both CV and sampling practice and provide advice on better quality if appropriate.

The workshop also discussed the use of additional information to describe the quality of data. The group concluded that additional information can be used to improve the sampling design and especially in model assessed estimation.

An additional quality indicator was discussed: Design effect indicator (DEFF). This indicator measures the efficiency of utilisation of auxiliary information, relative to simple random sampling;  $CV_{\text{current sampling}}/CV_{\text{random sampling}}$ . This indicator would characterise the efficiency of the sampling method rather than the quality of the data themselves.

The discussion in PGECON was focussed on the use of stratification to distinguish between normally active vessels and vessels with low levels of activity. Value or volume of landings were considered apt for the characterisation of the activity level. In 2013 PGECON concluded that the stratification of different levels of activity could be useful in cases where large differences in activity occur within vessel segments. In the Helsinki workshop the reasons and implications of concentration of economic activities were discussed as well as the question whether a threshold could be used to define a target population. Data for different MS were analysed on the difference in activities and the impact on the economic results for these segments. It was observed that for many MS the frequency distribution of the value of landings is highly skewed.

Moreover, the analyses showed that cost structures differ between different activity levels. Thus the cost structure will vary depending on whether vessels with different levels of activity are merged to one segment or not.

During the workshop it was discussed that the usefulness of data for bio-economic modelling and policy analysis might be limited if the economic performance of vessels within a segment is too heterogeneous to represent the target group for policy/management. This can e.g. be the case when the management only targets the fishermen for which fishing is the main source of income, but the fleet segment under consideration is composed mainly of side-line or recreational fishermen.

Moreover, it was discussed during the workshop that in cases where auxiliary information is available on the activity level of the vessels, stratification between different levels of activity could enhance the cost-efficiency of data collection and quality of the resulting estimates.

Because of the arguments stated above, it was recommended during the workshop that there should be some distinction between professional and non-commercial fishermen, characterised e.g. by turnover. The data collection should include both groups, but the intensity of data collection should be different and the results should be reported separately.

It was also recommended during the workshop that a common approach should be used to define a professional fisher. As a suggestion the definition from FADN was put forward: the economic size of a firm to be considered to be a farmer and in the target population has to be high enough to provide livelihood to one household. The workshop did not ultimately agree on this suggestion but did not succeed in agreeing on an alternative common approach.

In the discussion in PGECON the following arguments were exchanged:

- The inclusion of "non-commercial" fishermen is due to the fact that the fleet register of many MSs contain a large number of vessels that are hardly used. It would be advisable that only commercially active fishermen are included in the vessel register.
- Although there are more "non-commercial" fishermen in small scale fisheries, non-commercial fishermen should not be regarded as synonym for small-scale fishermen.
- The usefulness of thresholds (e.g. value of landings, effort, income) was discussed and it was agreed that this threshold should not be used to exclude any vessel from the population and thus data collection. If introduced, it should be used to make a distinction in data collection and reporting.
- The fear was expressed that introduction of a threshold would cause inconsistencies in the time series of economic data that were built up over the last years. It was concluded that this should not be a problem as the results of both commercial and non-commercial fishermen would be reported and the totals would be comparable to the totals of previous years.
- It was concluded that all MS are free to distinguish in their data collection program between different types of vessels, being non-commercial or low active vessels and the current DCF allows for this approach. In order to distinguish between different levels of activity in reporting, there is a need to develop a common approach and thus a comprehensive set of thresholds.

It was stated that the distinction between commercial fishermen and non-commercial fishermen is part of a bigger problem of large variation in activity level within segments. This not only concerns distinction between non-commercial vessels and commercial vessels, but the main problem is the mixing of economic data from vessels operating normally and vessels with low activity levels. As such the problem may also exist in large scale fisheries, for instance when a vessel gets an extensive overhaul or enters or leaves the fleet during the year. In contrast to smaller vessels, one larger vessel usually represents a bigger share of the entire segment and thus also has a higher impact on the totals. These vessels also affect the average total cost structure and it is questionable whether these vessels should be taken into account when performing bio-economic analyses. When reporting economic data it should be taken care that the results are not biased by different activity levels. This might be achieved through reporting in separate activity classes or by other ways of accounting for the activity, e.g. scaling.

Concern was raised about the effects of such an approach on the consistency between MSs and the possibility for practical implementation of such an approach. PGECON agreed that these issues could best be addressed by application of this methodology to the data collection of a representative sample of fleet segments. PGECON agreed that the quality of the data reported would in principle benefit from a distinction between normally active vessels and vessels with low activity levels. Distinction between commercial and non-commercial fishermen could be a first pragmatic step in order to increase the usefulness of the reported data. PGECON also agreed that distinguishing two groups of activity/income levels should only be implemented in case consistency between MS can be reached in the level of activity/income that is used as distinction and if practical issues regarding the implementation of such an approach would be settled. The group agreed that these issues could best be addressed by testing of this methodology to the data collection of a representative sample of fleet segments.

PGECON recommends that a workshop should be held to test the possibility of distinguishing between low activity vessels and normal activity vessels, and make an inventory of the problems and advise on ways forward to implement such a method.

## **Conclusions/recommendations:**

### **Workshop on thresholds for activity levels**

- A)** Identify differences in activity levels for fleet segments covering all regions
- B)** Develop consistent methodology to distinguish between:
  - "Commercial" and "non-commercial" fishermen (revenue)
  - Normally active and less active fishermen (effort/revenue)
- C)** Test the effects of application of these two approaches to the fleet segments
- D)** Investigate possible implementation procedures (esp. in cases where no/little auxiliary information is available)
- E)** Develop advice on the issues concerned with the application of different thresholds and ways forward.

*See also chapter 7 "Proposal of studies and workshops (including identification of chairperson, and possible venue and dates)" for detailed planning*

### **4.3 Common understanding and statistical methodologies to estimate/re-evaluate transversal data in small-scale fisheries" (Nantes, 2013)**

In most EU countries, small scale fisheries (SSF) are treated differently by control regulation than larger fishery segments. Consequently, there is a shortfall of data available about this fleet segment. The SSF is considered to be less important from the economic point of view, however since about 50% of the EUs population of fishermen are employed by this segment, it should be considered important from a social point of view. It is also important from a biological point of view, concerning environmental impact on coastal ecosystems and on coastal zone spatial planning.

In order to deal with the issue of availability of transversal data and to investigate methodological approaches in small fisheries it was decided to organize a SSF workshop in 2013. The workshop "Common understanding and statistical methodologies to estimate/re-evaluate transversal data in small-scale fisheries" was held in May 2013 in Nantes. There were three issues included in the TORs for the workshop:

#### **ToR A**

- Review and evaluation of data collection, (data sources, sampling methods and raising strategies) used by Member States to produce transversal variables for small scale fisheries in response to the DCF requirements.
- Assessment of their consistency and accuracy, by type of variables (Appendix VIII of Decision 2010/93/EC) and by fishing fleet segment (Appendix II&III of Decision 2010/93/EC).

- Discuss the regional approach for small scale fisheries. Discuss the input of new techniques (CCTV, mobile phone apps or geolocalization data) to improve the estimates calculated.
- Discuss methodological issues and cost efficiency of the different strategies currently developed by each MS;

#### **ToR B**

- Agree on methodological approaches and common references for addressing the issues raised in TOR A).
- Link the different options with the minimum requirement to answer the different regulations (CFP, MSFD, Water directive);

#### **ToR C**

- Based on the DCF Decision 2010/93/EU, propose common definitions, and describe the requirements to be part of a renewed EU Regulation (future DC-MAP). Propose guidelines to produce the different types of transversal variables for the small-scale fisheries (vessels under 12m.).

Main results of EC Study N° FISH/2005/10 on Small Scale Coastal Fisheries in Europe were presented during the Nantes workshop. The core objective of the project was to obtain concrete recommendations for the management of fisheries exploited by small scale coastal fleets. SSF fleet segment is of major relevance in all countries (except Belgium or Netherlands) in terms of number of vessels. The fleet segments of vessels <12m (EU Regulation) represent: about 80% of the EU fleet (ca. 70 000 vessels), employ directly about 100 000 fishermen (about 50% of the EU total). SSF contribution to total value of landings varies in different areas (over 20% in the Baltic Sea, less than 10% North Sea, about 20 in North Atlantic and about 25% in Mediterranean and Black Sea).

According to an EC study there is a strong heterogeneity of SSF in terms of vessels' technical characteristics mainly explained by their heterogeneity in terms of fishing activity (gear, equipment used, areas of operation). In spite of their relatively small economic output, SSF is important from the perspective of bio-economic analyses. The segment has an impact on spatial planning, i.e. coastal zone management (MSFD, MPAs, Water directive, habitats and birds directives).

Precise definition of small scale fisheries was also discussed. Most often SSF is defined as vessels less 12 meters overall length (DCF and Kavala definition, EC study, management plans). For the data collection purposes it was suggested to focus on vessels less than 10 meters. This would be consistent with control regulation (vessels below 10 m or 8m in the Baltic Sea are exempted from logbook obligation). It was, however, suggested to keep the 10-12 meters vessels for consistency reasons (to keep time series) and having in mind that these vessels are outside the VMS monitoring system.

A complete overview of all European small scale fisheries and practices used to collect data and to understand the relative importance of such fisheries in each Member State was presented (based on information gathered from 12 MSs). It was concluded that two types of data collection are in use i.e. sampling and census approach. The group agreed that these two approaches should be kept. In the case of the census approach, EU logbook format was found to be not suitable to the special features of SSF, thus different types of data collection strategies such as coastal logbooks, monthly reports, landing declaration,

monthly declarative forms or sales notes etc. should be considered. The choice between census and sampling for statistical treatment should be based on; cost efficiency, reliability of methodology, data resolution quality.

It was pointed out by the workshop group that there is a need to establish guidelines for appropriate sampling schemes by an expert group and to make it available to all MSs. In data collection of census type, the assessment of the completeness and quality of declarative forms should be ensured. Having this in mind it was considered that additional work is needed to suggest best practices for a sampling scheme and to assess and present to end users, the functioning and purpose fitness of declarative forms used.

A recommendation from the WS was to establish a handbook for best practices for the sampling approach and to propose methods to assess and to demonstrate to end users, the function and efficacy of the declarative forms.

PGECON discussed the issue of using control data and possibilities of expanding them in order to address the problem of insufficient information available for SSF. The group was aware that existing control data are insufficient (for métier purposes as an example). However it was pointed out that the present effort to collect data is already burdensome and expensive so a cost benefit approach should be taken into account in this respect.

The workshop concluded that considering the observed regional differences, a regional approach should be supported. In this respect and having in mind that in the next DC-MAP regional approach will be associated with more active end-user involvement they should define and justify what data is necessary to support scientific advice in CFP.

**PGECON supports the workshop conclusion** that end users should be able to request additional information for specific métiers and specific component of vessels < 10 meters, if feasible. This additional information could be related to the disaggregation level (spatial, technical and temporal) and/or to the collection of more detailed effort variables (soaking time, number of nets, etc.). However, RCGs (or PGECON) should assess the feasibility to collect such additional information.

The workshop group also discussed the input of modern techniques (CCTV, mobile phone apps or geolocation data) to improve the estimated statistics. The workshop group concluded that such tools could be useful and that their use should be supported in the next DC-MAP, initially in the implementation of pilot or trial studies. The group recommended member states to work together in the future, e.g. on extension/improvement of open source applications and development of tools to process data.

PGECON envisages possible difficulties, however, in bringing these new tools into use, caused by the likely attitudes (human aspects) towards them.

In order to deal with high heterogeneity in volume and value of fish landed as well as in number of fishing days the workshop group suggested that ICES or STECF should be consulted to give advice on how to distinguish sub population to optimize precision and cost efficiency of the data collection.

The workshop group discussed the requirements that have to be part of a renewed EU Regulation (future DC-MAP). The present requirements (appendix VIII of EC Commission Decision 93/2010) were reviewed and a proposal was made for a core set of variables (*Table 1*). The group considered that the present DCF requirements for the vessels < 10 meters are too much detailed and that a broad range of information required by the current DCF has not been used so far. In addition, the workshop group considered that the collection of very detailed effort variables was cost-inefficient in the case of vessels without logbook obligation, considering the specificity of the fleet.

PGECON drew attention to the issue of proper calculation of prices by species which is in fact a coefficient (value/volume). Since fish caught may be further processed (gutted, filleted, etc.) by fishermen before placed on the market, a distinction between live and landing weight should be made.

GTday as an indicator was considered not very meaningful for the SSF, however, since it is easy to calculate, it could remain part of analysis.

PGECON supports the list of variables as proposed during the Nantes workshop.

As an additional proposal for the new DC-MAP, the workshop group considered an indicator of the spatial distribution of the effort deployed by vessels < 10 meters of high interest for scientific and management purposes. Fishery independent tools (electronic device) could be used to collect such information. The idea is supported by PGECON as well.

PGECON supports the inclusion in the DC-MAP of a provision for pilot studies, coordinated at regional level to study best methodology and to assess the cost for collecting information on the spatial distribution of the effort deployed by vessels < 10 meters.

**Conclusions/recommendations:**

- PGECON supports both the list of variables and the inclusion of pilot studies in DCMAP on spatial distribution of SSF effort as proposed during the SSF workshop in Nantes

Table 1: List of transversal data to be collected for vessels less than 10 meters (as proposed during the SSF workshop in Nantes)

Heading	Variable	Unit	Description	Coverage	Activity segmentation	Reference Period
Capacity	Number of vessels	Number	Total number of vessels	Community Fishing Fleet Register	Fleet segment	
	GT	Number	Total GT of the vessels in the segment	Community Fishing Fleet Register	Fleet segment	
	kW	Number	Total kW of the vessels in the segment	Community Fishing Fleet Register	Fleet segment	
	Vessel Age	Number	Average AGE of the vessels in the segment	Community Fishing Fleet Register	Fleet segment	
Effort	Days at sea	Day	any continuous period of 24 hours (or part thereof) during which a vessel is present within an area and absent from port;	Active vessels	Fleet segment and gear (level 3)	Quarterly
	Number of trips	Number	Fishing trip: means any voyage by a fishing vessel from a land location to a landing place, excluding non-fishing trips (a trip by a fishing vessel from a location to a land location during which it does not engage in fishing activities and during which any gear on board is securely lashed and stowed and not available for immediate use);	Active vessels	Fleet segment and gear (level 3)	Quarterly
	GTDays	GT.Day	Derived variable from calculated Days at sea by vessel (by segment) multiplied by each vessel gross tonnage (average GT of the segment).	Active vessels	Fleet segment and gear (level 3)	Quarterly
	kWDays	kW.Day	Derived variable from calculated Days at sea by vessel (by segment) multiplied by each vessel gross tonnage (average kW of the segment).	Active vessels	Fleet segment and gear (level 3)	Quarterly
	*Number of vessels*	Number		Active vessels	Fleet segment and gear (level 3)	Quarterly
	Landings	Value of landings totals and per species	Euro	Value of landings total and per species	Active vessels	Fleet segment and gear (level 3)
Live weight of landings		Tons	Live weight of landings total and per species. Weight in kg or tonnes declared on landing.	Active vessels	Fleet segment and gear (level 3)	Quarterly
Prices by species		Euro/kg	Price per kg of species landed	Active vessels	Fleet segment and gear (level 3) Level of processing	Quarterly

## **5 COMPILATION OF A LIST OF END USERS OF DCF FLEET ECONOMIC DATA AND THEIR REQUIREMENTS (RESOLUTION, QUALITY) COMPARE DCF FLEET DATA PROPERTIES WITH REQUIREMENTS AND INTERPRET THE DIFFERENCES (WHAT CAN BE ACHIEVED, WHICH PREREQUISITES?)**

PGECON considered that the main users of DCF data might be the EC and the national authorities. However, any people interested in the use of data can be considered end users, therefore it is necessary to categorize them.

Concerns were expressed by some participants on the additional workload that could be produced if each end users' data requests and needs were to be accepted. Flexibility in the number of variables to be collected and in the different scale of aggregations has to be carefully considered.

PGECON also considered that the list of end users could be compiled also on the basis of possible applications of data.

The table with possible applications prepared by the WS on allocation of Economic Data was reviewed. Some useful examples of use of data were presented by JRC. These examples mainly refer to impact assessment of management plans. The group suggested adding another column on the required quality level (CV, coverage rates). In particular, PGECON considered that quality indicators (such as CV) are useful to indicate to the end user what kind of analysis can be performed on the basis of these data. For instance, in the AER some trends are reported and commented. But if the variation of data is high, a trend analysis might be hardly feasible and its interpretation could be misleading.

The table from the WS was reviewed and extended with additional applications by a DGMARE representative (see *Table 2*). Unfortunately, it was not yet possible to specify requirements on data quality levels.

Table 2: Examples of end-users an application which require disaggregation of fleet economic data

application	variables	temporal resolution	spatial resolution	activity resolution	end user
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	EU institutions, MS, AC*
Evaluation of conservation measures in fisheries	effort, landings, revenue, all variable cost data	total annual effort in related fishery	ICES (sub-) division	fishery on target species	EU institutions, MS, AC*
Impact assessments in policy making in the CFP (AER)	Employment, revenue, all variable cost data	annually	MS	DCF segment	EU institutions
Support to evaluation of structural policies in the EU fishing fleet (AER)	Employment, revenue, all variable cost data	annually	MS and region	DCF segment	EU institutions, MS
Analysis of balance between capacity and resources in EU fleets(AER)	effort, landings, revenue, all variable cost data	total annual effort in related fishery	ICES (sub-) division	fishery on target species	EU institutions, MS.
Support to analysis and management of international fisheries	Employment, revenue, all variable cost data	annually	MS	DCF fleet segment	FAO (FIRMS project) OECD (policy analysis in EU fisheries) EU institutions
Public information for fisheries stakeholders and research bodies (AER)	Employment, revenue, all variable cost data	annually	MS	DCF segment	EU institutions, MS, research centers.
EMFF indicators defining baseline for the fishing fleet (AER)	Employment, revenue, all variable cost data	annually	MS and region	DCF segment	EU institutions, MS
Bio-economic modeling on fisheries	effort, landings, revenue, all variable cost data	total annual effort in related fishery	ICES (sub-) division	fishery on target species	Research centers
Marine Strategy Framework Directive	effort, landings, revenue, all variable cost data	annually	variable (e.g. ICES division)	DCF fleet segment, gear type	EU institutions, MS
Ecosystem Approach to Fisheries Management	effort, landings, revenue, all variable cost data	annually	ecosystem (e.g. ICES rectangle)	variable	EU institutions, MS
Regional analysis of conservation policies (AER)	effort, landings, revenue, all variable cost data	annually	region	DCF fleet segment	EU institutions, MS, AC*
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	EU institutions, MS,

\*EU institutions (mainly European commission -DG MARE - and the European Parliament, without prejudice of other EU institutions and agencies under EU law).

\*\* Advisory Councils in the CFP (Baltic Sea Long AC, Distance AC, Mediterranean Sea AC, North Sea AC, North-western waters AC, Pelagic stocks AC, South-western waters AC)

## Linking biological and economic data

Several management plans are stock specific and would require economic information on the vessels that exploit that specific stock. This level of information is generally not available because economic data are reported by fleet segment. Impact assessment and evaluation of management plans are an example for which economic data are required at relatively high resolution (disaggregation).

As discussed e.g. in the workshops on the disaggregation issue transversal data might be used to assign annual cost data to certain activities. For vessels subject to logbook obligation transversal data of sufficient detail should be available for that purpose. PGECON also recognized that at national level further information for more detailed segmentations than is required by the DCF could be available, e.g. raw data per vessel or monthly figures.

The feasibility to launch data calls on a predefined selection of vessels was discussed and it was considered that this is not covered by the current DCF legislation. In addition the preparation of this data would require more time than the usual one month used in the data calls. Moreover, methodological issues on disaggregation might occur.

It has formerly turned out that effort data –though being defined as transversal- in the past has not been used to link economic and biological data. Moreover, effort data calls have had different levels of resolution. On the basis of all these discussions, PGECON suggests a workshop on the link between economic and biological effort data and accordingly, call design.

### **Conclusions/recommendations:**

#### **Workshop on linking economic and biological effort data / call design**

- A)** Comparison of economic and biological effort data calls (resolution/level of aggregation); experience from management plan evaluation
- B)** Definition of variables (e.g. days at sea vs. fishing days) – what is really required/used/desirable?
- C)** Opportunities for harmonisation (resolution, definition, codification); any conclusions for DCMAP?
- D)** Exploration of optimum timing for the data calls and specific data sets.

#### **Attendance of both economists and biologists required!**

*See also chapter 7 "Proposal of studies and workshops (including identification of chairperson, and possible venue and dates)" for detailed planning*

## **6 HARMONISATION OF DCF/DCMAP DATA COLLECTION ON FISH PROCESSING/AQUACULTURE WITH EUROSTAT APPROACH**

A Eurostat expert outlined the aims and methodology of their data collection. The target population of Eurostat aquaculture data collection is all enterprises involved in aquaculture activities. Data is gathered by census survey for 90% or more of the target population by volume. For countries with a total production under 1000 tonnes and for species segments of 500 tonnes of production or less, estimation methods may also be applied. Derogations for data collections could be applied to small countries as Luxemburg by using estimation models to generate data. All aquaculture activity, whether being main or secondary activity, is included in the Eurostat survey.

Confidentiality issues regarding Eurostat data were highlighted. It was stated that too much data is flagged confidential, limiting data availability for reporting total EU aquaculture production. When confidentiality flagging of data becomes prohibitive, Eurostat requests the MS involved to justify the reasons for doing so. The issue is ongoing without resolution. Limited availability of information due to confidentiality could be a result of excessively detailed disaggregation. Eurostat policy does not allow the presentation of any confidential data.

Comparison regarding confidentiality restrictions between Eurostat and DCF revealed the latter is less restrictive, as confidential segments are included to the totals and therefore the complete picture of sector is available.

In principle Eurostat data could be transferred for DCF purposes for the purpose of reducing surveying burdens on enterprises. This is currently the main area of discussion between DGMARE and Eurostat. For DCF purposes Eurostat data is used for countries which do not provide data or are not involved in data collection, for example landlocked member states.

However, Eurostat is to expand its data gathering remit to cover sustainability, nutrients and waste emissions etc. Eurostat must also maintain its current compatibility with the format of FAO to maintain comparability at global level. Some production techniques for important aquaculture species (e.g. rainbow trout), are segmented non compatibly by the two regulations.

Differences in aquaculture data between Eurostat and DCF are a significant issue. The source of non -conformity was identified as:

1. Different target population for Eurostat and DCF with,
2. Misinterpretations of definition among Eurostat data providers,
3. Differing mandate: Eurostat is concerned with production for food, DCF with production as a contribution to the economy.

Harmonisation needs to be a requirement of DGMARE as harmonisation may require regulation change.

PGECON proposed the partial harmonisation of aquaculture data, as far as possible. The two governing regulations have different purposes and differing segmentations. Difficulties arose when an attempt was made earlier to harmonise the two sets of segments at EWG Lisbon 2012. Eurostat is generally regarded as covering the total production, while the DCF/DCMAP target

population is a large subset of this. It is more important to review definitions of both regulations, to identify and understand the differences between their respective data sets, in order to make useful cross references.

Before harmonisation can occur, definitions of Eurostat regulation ( (EC) 762/2008) need to be reviewed and an analysis of interpretation of these by each member state conducted.

With the review of the DCF it was considered to be an appropriate time to review end user (Commission) need for aquaculture data and how the data is used. The example of aquaculture production for non-food use was highlighted as a difference between Eurostat and DCF collections. It was thought that it might be useful for Eurostat to collect "all" aquaculture production – possibly clearly identifying food and non-food production.

PGECON observed inconsistencies between the text and Appendix XIII of the STECF 13-12 EWG report on Review of DC-MAP-Part 2. There is a full list of the farming techniques in the text of the report; however 'ponds' and 'other' farming techniques are missing in the Appendix table.

PGECON observed that considerable effort had already been spent on the harmonisation bilaterally between Eurostat and the Commission and that both approaches serve different purposes. Moreover, PGECON concluded that, given these circumstances, the potential for further advancing harmonization appears to be rather limited, and ultimately, both approaches might have to be pursued in parallel in the future as well.

The Eurostat presentation is provided in Annex 4:

## **7 PROPOSAL OF STUDIES AND WORKSHOPS (INCLUDING IDENTIFICATION OF CHAIRPERSON, AND POSSIBLE VENUE AND DATES)**

### **Workshops**

Some open questions still exist on the data collection on aquaculture. PGECON concluded that the issues can be tackled best by a workshop where principles applied in different MS can be compiled, compared and evaluated.

The following setup was developed:

#### **Conclusions/recommendations:**

##### **Workshop on Aquaculture data collection**

- A)** Requirements of the data call and quality checks – major issues faced and possible improvements.
- B)** Definition of primary activity and how it is applied by MSs
- C)** Defining the criteria for the allocation of enterprises to the particular aquaculture segments in cases when few different techniques are used and/or different fish species are produced.
- D)** Harmonisation of conversion indexes used for estimation of weight of sales of hatcheries and nurseries production from the number of fry for each species and their age rate.

*Chair: Barbara Pieńkowska*

*Venue: Gdynia*

*Timing, duration: September 29 – October 3, 2014*

In addition, two more workshops have been recommended during the meeting, as described in previous chapters:

Recommendation from chapter 4.2 (Statistical issues and thresholds" (Helsinki, 2013)):

#### **Workshop on thresholds for activity levels**

- A)** Identify differences in activity levels for fleet segments covering all regions
- B)** Develop consistent methodology to distinguish between:
  - "Commercial" and "non-commercial" fishermen (revenue)
  - Normally active and less active fishermen (effort/revenue)
- C)** Test the effects of application of these two approaches to the fleet segments
- D)** Investigate possible implementation procedures (esp. in cases where no/little auxiliary information is available)
- E)** Develop advice on the issues concerned with the application of different thresholds and ways forward.

*Chair: Hans van Oostenbrugge*

*Venue: Den Haag*

*Timing, duration: September 15 – 19 (Mon-Fri)*

Recommendation from chapter 5 (Compilation of a list of end users of DCF fleet economic data and their requirements):

#### **Workshop on linking economic and biological effort data /call design**

- A)** Comparison of economic and biological effort data calls (resolution/level of aggregation); experience from management plan evaluation
- B)** Definition of variables (e.g. days at sea vs. fishing days) – what is really required/used/desirable?
- C)** Opportunities for harmonisation (resolution, definition, codification); any conclusions for DCMAP?
- D)** Exploration of optimum timing for the data calls and specific data sets.

#### **Attendance of both economists and biologists required!**

*Chair: JRC expert*

*Venue: Zagreb*

*Timing, duration: November 2014 (Mon-Fri)*

## **Studies**

PGECON must realize that a considerable number of studies that have been recommended through the years have piled up without having been addressed in any way. This jeopardises the usefulness of DCF economic figures that are to be collected under the DCF (DCMAP) with substantial effort.

Some of these studies are listed below. This list is not claimed to be complete nor does the order imply any information on urgency. Moreover, it is not regarded as a PGECON task to follow up on the status of proposed studies. In fact, the lack of the results of the studies listed has impeded the use of DCF data and the development of recommendations for DCMAP.

### **Studies:**

**Origin and Sources of Raw Material in the European Seafood Industry**

**Study to disaggregate economic variables by activity and area**

**Handbook on sampling design and estimation methods for fleet economic data collection**

**Harmonise quality reporting and propose methodology in the case of non-probability sample survey**

**Pilot study on social indicators**

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

In the following pages these studies are detailed using the common template.

## **Title: Origin and Sources of Raw Material in the European Seafood Industry**

Max. Budget : 550.000 Euro

### Objectives and expected results :

The study shall evaluate the feasibility of data collection on raw material by species and origin (catches/aquaculture and domestic/EU/non-EU), also assess the consequences of including semi-processed products (problems of double counting, etc.)

The study shall take into consideration existing data collection in order to assess the possibility to link these sources, as there are EU market observatory, trade statistics, Prodcom statistics, control regulation, input-output tables, data from producer associations, EU traceability regulation. Some fish and fisheries products are used in the pet and farming sector, maybe also in the cosmetics and pharmaceutical sector. The proposed study shall also assess the volume of fisheries and aquaculture products going into these sectors and the importance of those purchasers. Furthermore, small size enterprises may be more linked to regional production of fisheries products or integrated enterprises, e.g. aquaculture producers with processing facilities. This should also be taken into account.

### Terms of References of the proposed study

- Investigate the volume and value of raw materials by species being used in the fish processing industry in a sample of at least eight Member States (MS) and also investigate their source and origin. Raw materials should include fish and other aquatic species.
- Investigate the type of processed material used in the fish processing industry
- Investigate the price of raw materials used in the processing industry in the respective countries
- Investigate the percentage of income coming from processing and that coming from other activities
- Assess the feasibility of linking raw material use in the fish processing industry with the fishing and aquaculture sector for the respective MS
- Estimate the costs of regular (could be e.g. every 2 or 3 years) data collection of raw materials used in the fish processing industry
- The selection of countries or the study shall be done by several criterions, leading to different country groups. Those criterions might be:
  - Market size
  - Production volume
  - Important main products (relevant for European market)
  - Main regions, in order to have a cross over approach by commodity and country/area
  - Countries with established data collection and countries with less developed data collection on raw materials

### Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

The study could be executed by national statistical offices and research institutes involved in the data collection framework of the CFP. The study shall be done in cooperation of at least 5 MS being involved in the current DCF.

### Duration:

18 month

### Policy relevance/need this activity addresses/end users of outputs

Data on raw materials purchased from European fishing companies may provide information on outlet and ex-vessel prices which may be of interest for the fleet policy, while data on imported raw materials should provide information on sourcing (including intra-firm trade) which may be of interest for the external side of the CFP. Furthermore, in order to have the connection to the fleet and to evaluate impacts of management measures for the fleet on the fish processing industry, the study may deliver the necessary empirical data basis.

Is output needed by a certain time?

Yes, results should be available at least 2 years before the proposed start of regular data collection on raw material by origin and species under the new DC-MAP in order to enable the EU-Commission to change legal provisions and MS to adapt to this new data collection needs.

Activity recommended by whom?

Numerous, e.g. SGECA 10-03, PLEN 10-03, SGECA 10-04, STECF-EWG 13-05, PGECON 2013, Liaison Meeting 2013, STECF 13-31

Background material:

## **From EWG 13-15 - SPECIAL REQUEST: DATA COLLECTION ON RAW MATERIAL**

### **5.1 Background for the proposed study**

*There is already a longer history of integrating data collection of raw material by species. Originally it was part of the DCR, but then skipped for the DCF due to the argument of serious problems to collect the data. In an attempt to reinforce the usefulness of fish processing industry data collection for policy advising, it is recommended to include data on raw materials which are used by the EU fish processing industry. Data on raw materials purchased from European fishing companies may provide information on outlets and ex-vessel prices which may be of interest for the fleet policy, while data on imported raw materials should provide information on sourcing (including intra-firm trade) which may be of interest for the external side of the CFP. Furthermore, in order to have the connection to the fleet and to evaluate impacts of management measures for the fleet on the fish processing industry it was already proposed several times to have a study on the feasibility of collecting data on volume and value of raw material (see e.g. SGECA 10-03/SGECA 10-04/PGECON 2013). ...*

*The study shall take into consideration existing data collection in order to assess the possibility to link these sources, as there are EU market observatory, trade statistics, Prodcum statistics, control regulation, input-output tables, data from producer associations, EU traceability regulation. Some fish and fisheries products are used in the pet and farming sector, maybe also in the cosmetics and pharmaceutical sector. The proposed study shall also assess the volume of fisheries and aquaculture products going into these sectors and the importance of those purchasers. Furthermore, small size enterprises maybe more linked to regional production of fisheries products than integrated enterprises, e.g. aquaculture producers with processing facilities. This should also be taken into account. ...*

*In general it was agreed that such a study needs some effort in order to produce reliable results. In some countries data maybe already exists, whereas in other countries a new survey has to be established. This leads to the assumption that for the duration of 18 month 1 full-time employee per country is needed including the time for reporting.*

**Title: Study to disaggregate economic variables by activity and area**

Max. Budget : 300.000 €

Objectives and expected results:

- 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.

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Study, involvement of at least 4 research institutes from different MS advisable to reflect different data collection environments

Duration: 12 months

Policy relevance/need this activity addresses/end users of outputs

A wide range of applications for fleet economic data has emerged requiring data on a resolution level higher than provided by DCF specifications. In order to find a solution for this problem two workshops have indicated that transversal data which are in several cases available at the requested resolution could serve for disaggregation of fleet economic data. This approach has to be further elaborated.

All stakeholders /end users of fleet economic data will benefit from the outcome of that study as it will allow to use a common approach for the numerous applications which require disaggregation (see also PGECON 2014 compilation).

Is output needed by a certain time?

End of 2015 highly desirable

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

PGECON 2013, LM 2013, PGECON 2014

**Title: Handbook on sampling design and estimation methods for fleet economic data collection**

Max. Budget: 30,000 euro

Objectives and expected results:

Produce a practical manual to be used as supporting guidelines in the production process of key fisheries statistics according to EU legislation. Report will contain methodological and technical materials, worked examples and case studies plus annexes (SAS program codes, numerical results).

Expected content of the handbook:

*Approx.50-60 pages*

*Contents:*

*1. Introduction*

*2. Survey planning*

*2.1. Basic concepts and definitions*

*2.2. Survey strategy*

*2.2.1. Overall survey design*

*2.2.2. Sampling design*

*2.2.3. Estimation design*

*2.3. The role of auxiliary information*

*2.4. The role of statistical models*

*3. Techniques for sample selection and estimation*

*3.1. Preliminaries*

*3.2. Basic sampling techniques*

*3.2.1. Simple random sampling*

*3.2.2. Systematic sampling*

*3.2.3. Sampling with probability proportional to size (PPS)*

*3.2.4. Stratified sampling and allocation techniques*

*3.2.5. Worked examples*

*3.3. Use of auxiliary information in estimation phase*

*3.3.1. Ratio estimation*

*3.3.2. Regression estimation*

*3.3.3. Generalized regression estimator (GREG)*

*3.3.4. Calibration techniques*

*3.3.5. Worked examples*

*4. Treatment of nonresponse*

*4.1. Types of nonresponse*

*4.1.1. Unit nonresponse*

*4.1.2. Item nonresponse*

*4.2. Adjustment for unit nonresponse*

*4.2.1. Response Homogeneity Groups method (RHG)*

*4.2.2. Post stratification*

*4.2.3. Logistic modelling*

*4.3. Worked example*

## 5. Case studies

### 5.1. Italy

### 5.2. Finland

## 6. Quality assessment of estimates

### 6.1. How to evaluate the quality of sampling and estimation procedures?

### 6.2. How to improve quality?

## 7. Software

### 7.1. SAS tools

#### 7.1.1. SAS SURVEY procedures

#### 7.1.2. SAS macro CLAN

#### 7.1.3. SAS macro CALMAR2

### 7.2. Other tools

#### 7.2.1. SPSS Complex Samples module

#### 7.2.2. R program SURVEY

## References

### Web links

### Annexes

Type of activity and types of bodies/organizations that could carry it out Study - Joint project by RKTL (Finland), NISEA (Italy) and University of Helsinki (UH)

Duration: 3 months, first month of 2015

Policy relevance/need this activity addresses/end users of outputs

The handbook will provide methodological guidance for MS when planning their data collection scheme and analysing data collected. It will advise on reporting of data quality and in improvement of data quality, thus considerably increasing the efficiency and effectiveness of data collection.

Is output needed by a certain time?

Preferably prior to the fleet economics data call to be launched in 2015

Activity recommended by whom?

The handbook was proposed by the DCF workshop on statistical issues and recommended by PGECON 2014 and then STECF EWG 14-02

**Title: Harmonise quality reporting and propose methodology in the case of non-probability sample survey**

Max. Budget : 40.000 €

Objectives and expected results :

Terms of References of the study

- Investigate examples of the assessment of the quality of non-probability sampling strategies applied in other sectors which could be adapted to fisheries
- Propose a suitable methodology for the estimation of economic variables in case of nonprobability sampling
- Propose indicators for the assessment of the quality of estimates of economic variables in the case of non-probability sampling
- Propose a common format for the presentation of these methodologies in the NP and in the TR in order to harmonise quality reporting
- Propose methods to evaluate the impact of non-response in case of non-probability sampling and also in case of probability sampling and census with low response rates
- Perform a comparative impact on data quality of different sampling strategies (e.g. is sampling preferable to census with low response rate? When a response rate should be considered too low with respect to the reliability of final estimates?).

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Study, preferably at least 3 research institutions from different MS should be included

Duration: 4 months

Policy relevance/need this activity addresses/end users of outputs

Non-probability sampling and low response rates are rather common in the collection of economic data of the fleets. However, there is hardly published information how this affects bias and variability estimates. Any end users of DCF fleet economic data should have strong interest in this kind of quality information on the data provided by MS. MS in turn would finally be able to provide this kind of information in a standardised manner.

Is output needed by a certain time?

End of 2015

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

STECF-SGECA 09-02 and numerous subsequent meetings, e.g. LM2013

**Title: Pilot study on social indicators**

Max. Budget : 200.000 €

Objectives and expected results :

It has been intended to include social variables in the DCMAP legislation. Before social data are included in the new DCMAP and in order to avoid redundant effort possible end-users and applications have to be clearly defined in a first step. Moreover, it has to be clarified how data should be collected, which data are available through common sources and what are the applications/end users and requirements.

The study should clarify the data needs and, subsequently, elaborate existing sources for social variables and the feasibility of linking them to fisheries. Then it should be specified which data are required but not available through other sources. It has to be born in mind that the use of social indicators might be related to a regional level rather than to a fleet segment level.

The study should cover all 10 variables as listed in EWG 12-15 and should cover all relevant MS.

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Pilot study, consortium of research institutes from at least 4 MS

Duration: 9 months

Policy relevance/need this activity addresses/end users of outputs

The outcome of the study is a prerequisite to set up an efficient DCMAP. DCMAP has to be specific to the end user needs and has to ensure that existing sources are exploited as much as possible to achieve the requested information prior to demanding additional effort on data collection.

Is output needed by a certain time?

Preferably before adoption of new DCMAP legislation

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

EWG 12-15, p.20; EWG 13-05, p.15

**Title: Methodologies for estimation of intangible assets in EU fisheries**

Max. Budget : 275.000 €

Objectives and expected results :

- Identify different types of fishing rights and identify the available data in relation to fishing rights
- define a methodology for estimation of the value of different types of rights (license, quota, transferable and non-transferable, etc...); specify the input as required for the estimation
- 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 factors determining changes in values of intangible assets.
- ensure a coverage as large as possible so to address all the possible types of fishing rights present at EU level.
- Provide guidelines for estimation which allows the estimation for all circumstances which have been observed in MS

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Study, involvement of at least 4 research institutes from different MS advisable to reflect different legal circumstances

Duration: 10 months

Policy relevance/need this activity addresses/end users of outputs

Fishing rights are an essential part of total assets in many fisheries and thus, amongst others, also important for the estimation of capital cost.

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.

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 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.

Is output needed by a certain time?

Preferably before adoption of new DCMAP legislation

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

Workshop on Evaluation of data collection connected to Fishing Rights and Capital Costs 2013, PGECON 2014

## **8 NEXT YEAR PGECON: DATE AND VENUE AND APPOINTMENT OF THE CHAIR PERSON**

The next year PGECON will be held in March/April, chaired by Jörg Berkenhagen. The venue will have to be determined. Then, with the mandate ending after 2<sup>nd</sup> term a new chair will be determined.

The Terms of Reference for this meeting will be prepared by the chair and by the European Commission taking into account the conclusions of the 2014 PGECON, the 2014 RCMs and the 2014 liaison meeting.

## **Annex 1:** DCF PGECON 2014 in Berlin - Agenda

Venue: Technical University of Berlin, Center for Technology and Society,  
Hardenbergstr. 16-18  
Monday, March 31, 14:00 - Friday, April 4, 13:00

### Monday 14:00

Welcome, housekeeping, introduction round, general PGECON TORs  
New developments on DCMAP (Angel-Andres Calvo-Santos)

### Tuesday 9:00

Workshop "Evaluation of data collection connected to Fishing Rights and Capital Costs" (Gothenburg, 2013)

- Presentation by Anton Paulrud
- Discussion
- Conclusions, recommendations

### Tuesday 14:00

Workshop "Statistical issues and thresholds" (Helsinki, 2013)

- Presentation by Jarno Virtanen
- Discussion
- Conclusions, recommendations

### Wednesday 9:00

Workshop "Common understanding and statistical methodologies to estimate/re-evaluate transversal data in small-scale fisheries" (Nantes, 2013)

- Presentation by Evelina Sabatella
- Discussion
- Conclusions, recommendations

### Wednesday 14:00

Compilation of a list of end users of DCF economic data and their requirements (resolution, quality) (e.g. issues raised at EWG14-2 Hamburg: further requirements from bio-economics workshop, quota price information)

Compare DCF data properties with requirements and interpret the differences (what can be achieved, which prerequisites?) (Arina Motova)

### Thursday 9:00

Harmonisation of DCF/DCMAP data collection on fish processing/aquaculture with Eurostat approach (Andreas Lazar, Eurostat expert, fisheries and aquaculture statistics):

- Which are the principles applied by Eurostat (threshold, sources, definitions)
- Which are the differences between Eurostat and DCF and how can they be addressed/which are the consequences? (e.g. thresholds, enterprise/company, quality control)
- Can some Eurostat data be transferred directly to DCF database, if yes, under which circumstances?

Thursday 14:00

Feasibility of linking biological and economic data through transversal data. How to solve the problem of different level of (dis-)aggregation.

Friday 9:00

Description of workshops and studies for the upcoming period (including identification of chairperson, and possible venue and dates)

Report

AOB

## Annex 2: PGECON 2013 List of Participants

Name	Address	Telephone no.	Email
Kim Normark Andersen	Danmarks Statistik Sejrøgade 11, 2100 Copenhagen Ø	+45 39 17 33 83	<a href="mailto:kno@dst.dk">kno@dst.dk</a>
Jörg Berkenhagen (Chair)	Thünen-Institute of Sea Fisheries, Palmaille 9, 22767 Hamburg, Germany	+ 49-40-38905-206	<a href="mailto:joerg.berkenhagen@ti.bund.de">joerg.berkenhagen@ti.bund.de</a>
Angel-Andres Calvo-Santos	European Commission DG MARE Rue Joseph II, 79 B-1000 BRUSSELS Belgium	+32 2 29 93630	<a href="mailto:angel-andres.calvo-santos@ec.europa.eu">angel-andres.calvo-santos@ec.europa.eu</a>
Irina Davidjuka	Fish Resources Research Department Daugavgrivas 8 LV-1048 Riga Latvia	+37 167 617 527	<a href="mailto:irina.davidjuka@bior.gov.lv">irina.davidjuka@bior.gov.lv</a>
John Dennis	Bord Iascaigh Mhara (BIM) Irish Sea Fisheries Board	00353-1-2144101 00353 87 2334496	<a href="mailto:dennis@bim.ie">dennis@bim.ie</a>
Michael Ebeling	Thünen Institute of Sea Fisheries, Palmaille 9, 22767 Hamburg Germany	+49-040-38905-186	<a href="mailto:michael.ebeling@ti.bund.de">michael.ebeling@ti.bund.de</a>
Matt Elliott	Marine Management Organisation Statistics and Analysis Team 9 Millbank (Area 8C) London SW1P 3JR	+44(0)20 7238 4670	<a href="mailto:matt.elliott@marinemangement.org.uk">matt.elliott@marinemangement.org.uk</a>
Edvardas Kazlauskas	Agriinformation and Rural Business Center V. Kudirkos str. 18 LT03105 VILNIUS Lithuania	Tel +37037397087 Fax +37037406691	<a href="mailto:edvardas.kazlauskas@vic.lt">edvardas.kazlauskas@vic.lt</a>
Emil Kuzebski	MIR-PIB National Marine Fisheries Research Institute ul. Kołłątaja 1 81-332 Gdynia, Poland	+48 58 7356118	<a href="mailto:emil@mir.gdynia.pl">emil@mir.gdynia.pl</a>
Andreas Lazar	European Commission – EUROSTAT Sectoral and Regional Statistics: Agriculture and Fisheries -BECH C3/610 L-2920 Luxembourg	+352 4301 30042	<a href="mailto:Andreas.LAZAR@ec.europa.eu">Andreas.LAZAR@ec.europa.eu</a>
Sophie Leonardi	IFREMER - Centre de Brest Unité d'Economie Maritime Pointe du Diable 29280 PLOUZANE (FRANCE)	02.98.22.45.88	<a href="mailto:sophie.leonardi@ifremer.fr">sophie.leonardi@ifremer.fr</a>
Andrius Linauskas	Agriinformation and Rural Business Center V. Kudirkos str. 18 LT03105 VILNIUS Lithuania	+37037397087	<a href="mailto:andrius.linauskas@vic.lt">andrius.linauskas@vic.lt</a>
Marin Mihanovic	Ministry of Agriculture of Republic of Croatia Directorate of Fisheries Planinska 2a HR - 10 000 Zagreb Croatia	+385 (0) 1 6443 192	<a href="mailto:marin.mihanovic@mps.hr">marin.mihanovic@mps.hr</a>
Arina Motova	EC joint Research Center IPSC Maritime Affairs Unit Via E. Fermi, 2749 21027 Ispra (VA), Italy	+390332785253	<a href="mailto:arina.motova@jrc.ec.europa.eu">arina.motova@jrc.ec.europa.eu</a>

Name	Address	Telephone no.	Email
Carlos Moura	DSPIE/DPE – Unit For Programs and Statistics Av <sup>a</sup> Brasília, 1449-030 LISBOA – PORTUGAL	(+351) 21 3035811	<a href="mailto:cmoura@dgrm.mamaot.pt">cmoura@dgrm.mamaot.pt</a>
Anton Paulrud	Swedish Agency for Marine and Water management, Sweden	+46 (0) 10 698 6292	<a href="mailto:anton.paulrud@havochvatten.se">anton.paulrud@havochvatten.se</a>
Barbara Pieńkowska	MIR-PIB National Marine Fisheries Research Institute ul. Kołtataja 1 81-332 Gdynia, Poland	+48 58 7356115	<a href="mailto:bpiekowska@mir.gdynia.pl">bpiekowska@mir.gdynia.pl</a>
Heidi Pokki	Finnish Game and Fisheries Institute Viikinkaari 4, P.O. Box 2 FI-00791 Helsinki	+358 50 590 3592	<a href="mailto:heidi.pokki@rktl.fi">heidi.pokki@rktl.fi</a>
Evelina Sabatella	NISEA Via Irno,11, 84135 Salerno (SA), Italy	+39 089.79.57.75	<a href="mailto:e.sabatella@nisea.eu">e.sabatella@nisea.eu</a>
Irini Tzouramani	Agricultural Economics Research Institute, Hellenic Agricultural Organization, Terma Alkmanos str., 11528 Athens, Greece	+30-210-2756596	<a href="mailto:tzouramani@agreri.gr">tzouramani@agreri.gr</a>
Hans van Oostenbrugge	LEI, Alexanderveld 5,2585 DB The Hague Netherlands	+ 31-70-3358239	<a href="mailto:hans.vanoostenbrugge@wur.nl">hans.vanoostenbrugge@wur.nl</a>
Pierre Verdier	Ministère de l'Ecologie, du Développement durable et de l'Energie, Direction des pêches maritimes et de l'aquaculture Tour Voltaire- 1 place des Degrés 92055 La Défense Cedex France	+33 (0)1 40 81 98 90	<a href="mailto:pierre.verdier@developpement-durable.gouv.fr">pierre.verdier@developpement-durable.gouv.fr</a>
Jarno Virtanen	Finnish Game and Fisheries Institute Viikinkaari 4, P.O. Box 2 FI-00791 Helsinki	+358 295 32 7323	<a href="mailto:jarno.virtanen@rktl.fi">jarno.virtanen@rktl.fi</a>
Ivana Vukov	Ministry of Agriculture of Republic of Croatia Directorate of Fisheries Planinska 2a HR - 10 000 Zagreb	+385 (0) 1 6443 177	<a href="mailto:ivana.yukow@mps.hr">ivana.yukow@mps.hr</a>

**Annex 3:** Presentation on future DCMAP



# Review Data Collection Framework

**PGECON**  
**Berlin**  
**30 March-4 April 2014**  
**Angel Calvo, DG MARE**



## Developments since last meeting

*Legislative framework:*

1. **CFP Basic Regulation (EC) No 1380/2013 adopted (Article 25)**
2. **Political agreement on EMFF, should be adopted by June (eligibility). DC: 80% co-funding, budget of 520 million: stronger leverage**
3. **DCF Council Regulation to be amended**
4. **EU Multiannual Programme to be established**



## Developments since last meeting

*- Proposals on outstanding issues*

- **Endusers for economic data**
- **Architecture of the DCF & EU-MAP**
- **Role of PG ECON in relation to Regional Cooperation Groups**
- **Bio-economic modelling**
- **Mapping of overlaps/synergies with Eurostat - Consultations and input**



## Architecture

### 1. Simplifying the EU framework

Analysis of provisions in DCF and what could be left to EU MAP

Analysis of parameters in EU MAP and what could be left to RCGs & PGECON

2. What is likely to vary **annually/what is longer term** -> what should go in OP vs (national) work plan?



## End users for economic data

Need to have an exhaustive list of endusers

Indicating requirements:

- **aggregation level**
- **Precision level**
- **resolution**



## Economic issues in DCF

- i) economic issues: data collection requirements to achieve spatial disaggregation of data for **bio-economic modelling**
- ii) **data quality** (cf Workshop on statistical issues and thresholds)
- iii) **landing obligation** possible economic impacts



## **regional coordination**

*Division of tasks between RCGs and PGECON?*

*Best governance structure?*

*Role of STECF vs RCG/PGECON for quality?*

**Annex 4:** Presentation on harmonisation of Eurostat and DCF/DCMAP Aquaculture data collection



# HARMONISATION OF EUROSTAT AND DCF/DCMAP AQUACULTURE DATA COLLECTION

Andreas C. Lazar, Eurostat E1 – Agriculture and Fisheries



1



## Table of Contents

- Eurostat aquaculture data collection
  - Basics
  - Data collected
  - Issues
  - Checks
- Differences between Eurostat and DCF data

2



## Eurostat Aquaculture Data Collection - Basics

- Legal basis: Regulation (EC) 762/2008
- All freshwater and saltwater (including brackish water) aquaculture activities on Member State territory
- Surveys or other statistically validated methods for at least 90% of production, rest may be estimated (for total annual production < 1.000 tonnes, estimate of total allowed)
- Production by species (and method), but species < 500 tonnes and < 5% of volume may be estimated, aggregated
- Annual data submission for last year until 31/12; structural data every three years
- Annual methodological report on organisation of national system, data collection methods, data quality

3



## Eurostat Aquaculture Data Collection – Data collected

Excel template	Dataset name	Data	Unit
FISH_AQ2A_A	Production from aquaculture excluding hatcheries and nurseries	Quantity	Tonnes Live Weight (TLW, metric tonnes)
		Price	Species in euros or national currency divided by tonnes
FISH_AQ2B_A	Production of fish eggs for human consumption from aquaculture	Quantity	Tonnes Live Weight (TLW, metric tonnes)
		Price	Species in euros or national currency divided by tonnes
FISH_AQ3_A	Input to capture-based aquaculture	Quantity	Tonnes Live Weight (TLW, metric tonnes)
		Price	Species in euros or national currency divided by tonnes
FISH_AQ4_A	Production of hatcheries and nurseries at eggs/juveniles stage in life cycle	Eggs	Number in millions
		Juveniles	Number in millions
FISH_AQ5_A	Structure of the aquaculture sector	Facilities Size	Hectares
In Word format: FISH_AQ6_A	Methodological report for aquaculture statistics	-	Annual methodological report of the national systems for aquaculture statistics

4



## Eurostat Aquaculture Data Collection - Issues

- Data collection in most Member States via postal questionnaire census, data quality mostly good
- Aggregate data consistent year-on-year, disaggregated often not
- Definitional issues, e.g. species reporting, juveniles
- Different flags may be used in sending the data, e.g. „e“ for estimated, „p“ for provisional or „c“ for confidential: „c“ flag is obstacle for dissemination of EU aggregates, may be used in unjustified cases
- Sometimes old or obsolete classifications and codes used
- Data reported in wrong units, e.g. kilos instead of tonnes
- ...

5



## Eurostat Aquaculture Data Collection - Checks

- In Member States: Consistency checks, other sources
- File format, duplicate records, existence of codes
- Outliers
- Has the species already been reported by the country?
- Does the species and method combination exist?
- Is value != 0?
- ...
- European Statistics Code of Practice
- Quality Assurance Framework of the European Statistical System: possible activities, methods and tools for adherence to Code of Practice

6