



JRC SCIENTIFIC AND POLICY REPORTS

DCF ECONOMIC DATA CALL 2013 ON AQUACULTURE SECTOR

COVERAGE REPORT

JRC G.04 FISHREG Data Collection Team

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

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SUMMARY

This Data Collection Framework (DCF) coverage report was prepared by the Joint Research Centre (JRC) as part of an Administrative Arrangement with DG MARE. The purpose of the document is to provide an overview of the timeliness and completeness of the Member States data submissions to JRC in response to the call for aquaculture data concerning 2008-2011 issued by DG MARE under the DCF (Council Regulation No 199/2008).

Additionally, the report provides some indication of data quality, summarising major quality issues detected by Expert Working Group convened under the Scientific, Technical and Economic Committee for Fisheries (STECF EWG 13-10). The report is part of the end user feedback provided to DG MARE to facilitate the evaluation of EU Member State compliance with obligations under the DCF.

The 2013 call for economic data on aquaculture sector was the third data call for aquaculture data under the Data Collection Framework (DCF).

JRC enhanced existing uploading procedures to improve the transmission of the data from Member States, and carried out a number of coverage and quality checking procedures on the data submitted before, during and after the STECF EWG 13-10 meeting. During EWG 13-10, national experts were requested to explain some differences between different data sources and comment on data quality checks.

The present document reports on the coverage and quality of the data submitted by the Member States during the 2013 call on aquaculture economic data. The main findings of this report are:

A) In terms of compliance with the data call deadline, most Member States succeeded to upload data in time. Only the UK data submission failed to follow the deadline. The economic data set was submitted in the end of August. After the data validation checks performed by JRC and those done by STECF EWG most of the datasets had to be resubmitted after the meeting. Following Italian NP, Italy submitted data set for 2011 in the beginning of August, however this delay didn't affect production of the STECF report on Economic performance of EU aquaculture sector (STECF 13-29) as all JRC data quality checks and corrections been done before the STECF EWG 13-10 meeting.

B) In terms of the completeness of the Member States data submissions, most countries submitted the majority of parameters requested under the call. Overall, coverage was a bit better in comparison to the results of the 2012 data call. Greece submitted part of the requested information as well as UK provided most of economic variables for 2011.

C) In terms of data quality, some 'abnormal' estimates for various parameters were detected by JRC quality checks. Also in many countries sum of variables provided by segment did not correspond to the national total. Some issues were rectified by the Member States while some issues remained outstanding whilst preparing the economic report on aquaculture sector.

INTRODUCTION / BACKGROUND

The purpose of this report is to evaluate Member States data submission related to the 2013 call for economic data on the EU Member States aquaculture industry. The data collected was used by the JRC and STECF to produce the report on Economic performance of the EU Aquaculture sector 2013.

The data was requested under the framework of the Data Collection Regulation; cf. Council regulation (European Commission (EC) No 199/2008 of 25th February 2008). All EU member States are required to collect and provide data on salt water aquaculture, while collection of data for fresh water aquaculture is not compulsory. The data call requested data for the years 2008-2011.

For evaluation, three aspects of the Member States data submissions were considered in this report:

- 1) timeliness of the submissions (did they comply within the deadline);
- 2) completeness (coverage) of the data submitted (were all parameters provided for all segments and all years requested);
- 3) data quality (based on STECF EWG 13-10 evaluation).

Section two of this report presents the contents of the data call that was issued to the Member States. Section three presents the coverage and data procedures carried information relating to procedures undertaken by the JRC to evaluate the coverage and data checking procedures of the data submitted. Section four contains an overall evaluation of Member States data submission with the data call, while section five looks at the timeliness, coverage and quality of each Member States data submissions.

1 ECONOMIC DATA CALL CONTENTS

This was the third time aquaculture data was requested from Member states. Table 1.1 and Table 1.2, outline all the DCF economic variables to be submitted for the years 2008–2011, along with their corresponding aggregation levels. Table 1.1 lists all the economic variables required under the DCF. These variables are requested at the national level and disaggregated at the segment level described in the regulation (see Table 1.3). Statistical quality indicators are also requested for each variable at the national totals level.

Table 1.2 describes the data requested relating to production. Both production value and volume are requested at the national totals and by segments. Also data on sampling strategy, achieved sample size and precision been requested during the data call.

All the various definitions for variables, aggregation levels, sampling strategies and precision and accuracy measures can be found by navigating through the data collection website: <https://datacollection.jrc.ec.europa.eu/home>

Separate Excel upload files were needed for transmitting the DCF datasets. Upload templates were made available to download from the samples folder on the data collection website.

The data call was issued by DG MARE on the 13 of May 2013. MS were requested to submit the data within 1 month of the call, making the submission deadline 14 of June 2013. The official data call letter can be found at the following link:

http://datacollection.jrc.ec.europa.eu/c/document_library/get_file?uuid=1bcf74bc-0564-46d3-ad36-1885d713d9da&groupId=10213

Table 1.1 Requirements for 2008-2011 DCF data submission relating to economic variables on aquaculture.

Variable Group	Variable	Unit	Other fields	Template
Income	Turnover	Euro	<ul style="list-style-type: none"> • Year • Sample* • Population** • Achieved Sample Rate • Sampling Strategy • Precision*** • Sector Segmentation 	Aqua_economic.xls
	Subsidies	Euro		
	Other Income	Euro		
	Total Income	Euro		
Personnel Costs	Wages and salaries	Euro		
	Imputed value of unpaid labour	Euro		
Energy Costs	Energy Costs	Euro		
Raw Material Costs	<ul style="list-style-type: none"> • Livestock costs • Feed costs 	Euro		
Repair and maintenance costs	Repair and maintenance	Euro		
Other operational Costs	Other operational Costs	Euro		
Capital Costs	Depreciation of capital	Euro		
	Financial Costs, net	Euro		
Extraordinary Costs	Extraordinary Costs, net	Euro		
Capital Value	Total Value of Assets	Euro		
Investments	Net Investments	Euro		
Debt	Debt	Euro		
Raw Material Volume	<ul style="list-style-type: none"> • Livestock • Fish Feed 	Tonne		
Total volume	Total sales volume	Tonne		
Employment	Number of person employed: <ul style="list-style-type: none"> • Male employees • Female employees • Total employees 	Number		
	FTE National: <ul style="list-style-type: none"> • Male FTE • Female FTE • Total FTE 	Number		
Number of enterprises	Number of enterprises: <ul style="list-style-type: none"> • ≤ 5 employees • 6-10 employees • > 10 employees 	Number		

* Sample = Planned sample no. Number of enterprises comprised in the sampling plan. (See Guidelines for the submission of National Programme Proposals on the National Data Collection Programmes.) Required only at the national level.

** Population = Total population no. Number of enterprises comprised in each of the segments. (See Guidelines for the submission of National Programme Proposals/Annual Reports on the National Data Collection Programmes.) Required only at the national level.

*** Coefficient of variation (CV) is preferred when applicable.

Table 1.2 Requirements for 2008-2010 DCF data submission relating to turnover by specie.

Field	Note	Template
Species	Use the FAO 3 letter codes to indicate the species.	
Total Turnover (Euro)	Total countries turnover of particular specie, value is considered to be in Euro .	
Total Sales (Tonne)	Total sales of particular specie during the year, the variable should correspond to Total turnover. The value is considered to be in Tonne .	
41 different segments	Value and Weight of sales by Segment . The sum of variables per segment should correspond to the Totals.	
...other fields	<ul style="list-style-type: none"> • Year • Sample * • Population ** • Achieved Sample Rate • Sampling Strategy • Precision level*** 	Aqua production.xls

Table 1.3 Segmentation of the economic data

Segment code	Segment name
seg1_1	Salmon Hatcheries & nurseries
seg1_2	Salmon on growing
seg1_3	Salmon combined
seg1_4	Salmon cages
seg2_1	Trout Hatcheries & nurseries
seg2_2	Trout on growing
seg2_3	Trout combined
seg2_4	Trout cages
seg3_1	Sea bass & Sea bream Hatcheries & nurseries
seg3_2	Sea bass & Sea bream on growing
seg3_3	Sea bass & Sea bream combined
seg3_4	Sea bass & Sea bream cages
seg4_1	Carp Hatcheries & nurseries
seg4_2	Carp on growing
seg4_3	Carp combined
seg4_4	Carp cages
seg5_1	Other freshwater fish Hatcheries & nurseries
seg5_2	Other freshwater fish on growing
seg5_3	Other freshwater fish combined
seg5_4	Other freshwater fish cages
seg6_1	Other marine fish Hatcheries & nurseries
seg6_2	Other marine fish on growing
seg6_3	Other marine fish combined
seg6_4	Other marine fish cages
seg7_1	Mussel rafts
seg7_2	Mussel Long line
seg7_3	Mussel Bottom
seg7_4	Mussel Other
seg8_1	Oyster rafts
seg8_2	Oyster Long line
seg8_3	Oyster Bottom
seg8_4	Oyster Other
seg9_1	Clam rafts
seg9_2	Clam Long lin
seg9_3	Clam Bottom
seg9_4	Clam Other
seg10_1	Other shellfish rafts
seg10_2	Other shellfish Long line
seg10_3	Other shellfish Bottom
seg10_4	Other shellfish Other

2 COVERAGE AND DATA CHECKING PROCEDURES

Data Collection Framework (DCF) requires data quality assurance by Member States, while the evaluation of the data quality is the responsibility of STECF. JRC undertakes a number of coverage and data checking procedures on the data submitted, some are carried out during the uploading procedure and some afterwards. Data checks returning any inconsistencies, abnormal or missing values in the data submissions are sent back to the Member State, who are requested to report on these data checks, re-submitting corrected data when necessary. The overall quality of the data submitted was subsequently considered during the Expert Working Group (STECF EWG 13-10).

2.1 Checks carried out during the uploading procedure (Syntactic checks)

During the data uploading procedure a number of automatic syntactic checks are carried out on the data before it is accepted. Member States are required to use specific Excel templates when uploading the data. The templates can be accessed on the following link: <http://datacollection.jrc.ec.europa.eu/web/dcf/dc/aquaculture>

The syntactic checks are carried out without any specific knowledge of what the data contains or its meaning. They inform JRC if the data is present or not and in the correct format. These checks automatically reject data that do not confirm to specific restrictions, such as ensuring textual data is validated against defined parameters lists e.g. species types, country code, etc. In addition, numeric data are checked to make sure they contain numbers and not strings. In the event of errors, a message is sent to the person uploading the data

Member States receive immediate feedback when attempting to upload their data submissions. This helps Member States to identify inconsistencies with their own data and to fix them without intervention from the data collection team. Intervention is generally only required on technical issues with the upload server, and more complex issues regarding the datasets.

These basic Syntactic quality checks and immediate feedback have contributed significantly to the overall improvement of the quality of the data submitted.

2.2 Checks carried out after the uploading procedure

Once the datasets are successfully uploaded by the Member States, JRC evaluates how well the data complies with the terms of the data call by checking the coverage and quality of the data. In case of abnormal or missing data the MS have been contacted for clarification.

For each Member State, checks are carried out to ensure that all the necessary data have been submitted, i.e. that data is provided for all variables by national totals and by production segments. In the case of any inconsistencies, the data check results have been sent back to the MS for clarification. Results of these checks on the data submitted for the 2013 call on aquaculture data are summarised in section 4.

JRC checked the uploaded data by comparing the national totals with the sum of all production segments submitted by MS. All indicators at national and segment levels were cross checked and MS were also asked to clarify any inconsistencies or missing data. Additional checks, such as trend

analysis and time consistency of parameters over the period analysed, were performed and graphs and tables produced for each MS prior to the STECF EWG 13-10 meeting. Any irregular results, for example, a significant decrease in one or more parameters while all others remained stable, were highlighted and MS representatives were requested to check and validate these data issues.

For 2013 data call JRC data collection team elaborated R script, including all data checks. A comparison between segments list, foreseen in the National Programs and provided during the data call was also analysed in the script.

JRC also carried out checks against other official data sources. A comparison was made between DCF data (sales volume and turnover from the Aqua_economic.xls templates) provided by MS and data contained in the FAO and EUROSTAT data bases, which covers information on aquaculture production by Member State including inland and marine aquaculture production. Data sets were compared to examine the coverage of data submitted; taking into account that DCF only requires data on marine aquaculture. Again, the EWG 13-10 was asked to comment on any data inconsistencies regarding coverage of the DCF data. The STECF EWG 13-10 elaborations are provided in section 4.

3 OVERALL EVALUATION

The DCF requires data only on marine aquaculture; submission of data on inland freshwater aquaculture production is voluntary. Therefore, the EU landlocked countries (Austria, Czech Republic, Hungary, Luxemburg and Slovakia) are not part of the DCF. According to FAO figures, aquaculture production in these Member States accounted for around 3 % of the total EU aquaculture production in 2011.

Aquaculture production in Belgium, Estonia, Latvia and Lithuania is based on freshwater species that are not mandatory and, hence these MS did not carry out a data collection system for the aquaculture sector within the DCF framework. Nonetheless, according to FAO, the production of these countries is minor compared to the overall European level (around 0.3 % of the EU total aquaculture production in 2011).

The remaining Member States provided data, with a varying degree of submission between Member States. The main shortfalls included:

- Non provision of detailed cost structure data (provision of basic data only)
- Non provision of data by segment (provision by national totals only)
- Underestimation of the national production

For some Member States - Germany, Poland and Slovenia only reported the mandatory marine aquaculture data, while the fresh water aquaculture production is dominating in these countries. The unreported freshwater aquaculture production from these Member States accounted for around 3-4% of the EU aquaculture production in 2011.

Greece reported partial data during this data call, providing data on structure of the sector, employment in terms of number of employees, weight of sales and turnover. Greek aquaculture production is rather significant, representing 11% in weight and 15% in value of the EU aquaculture production in 2011.

The Netherlands only provided data for 2008 – 2010. Missing 2011 Dutch aquaculture production represents 3% in weight and 2% in value of the EU aquaculture production.

The United Kingdom provided detailed cost structure only for 2011, however it was impossible to calculate some economic indicators (e.g. net profit) on the aquaculture segment level as the data set was incomplete. Most of variables are missing for 2008-2010.

France provided full set of economic variables on aquaculture segment level for 2010-2011, however due to some missing variables for some segments (representing around 5-7% of overall national turnover) it was impossible for the country to provide all indicators on the national total level.

Croatia joined EU in the middle of 2013. It was not obligatory for the country to provide any data during the data call, however short analysis of the FAO data had been included to this report. This countries aquaculture production accounted 1% of the overall EU 28 weight and 1.4% of value.

Moreover, Poland and Romania provided data for 2009 - 2011, but not for 2008. Only national total estimates been provided by Cyprus and Bulgaria.

3.1 Data submissions

Timely submission of data with respect to the data call deadline is necessary given the timescale for the production of the annual report. The data call was issued on 13 of May 2013 and Member States were given one month to submit their data; deadline the 14 June 2013. The official data call was sent to the Permanent Representations of the MS at the date. JRC sent an early warning of the call to National Correspondents more than one month before the call was launched. JRC also sent the official call to all National Correspondents when it was launched.

Table 3.1 shows the uploading activity by each Member State with respect to the data call deadline. It presents the first and the last data submission. 17 Member States uploaded data before the deadline.

JRC performed coverage and quality checks of the data submitted. Where issues were found, MS were contacted and asked to check and validate the data, and re-submit when necessary. Most MS corrected the data and resubmitted some providing further explanations on the data issues.

During the STECF EWG 13-10 on Economic performance of the aquaculture sector some national experts found issues with the uploaded data that required rectifying. This led to further uploading activity during, as well as, after the meeting.

Table 3.1 Member States uploading activity in response to the 2013 call for aquaculture economic data

Country name	First upload date	Last upload date
Belgium		
Bulgaria	2013-06-11	2013-07-12
Cyprus	2013-06-07	2013-09-25
Germany	2013-06-13	2013-06-20
Denmark	2013-06-13	2013-07-18
Spain	2013-06-11	2013-06-17
Estonia		
Finland	2013-06-13	2013-08-28
France	2013-06-14	2013-09-12
United Kingdom	2013-07-08	2013-10-18
Greece	2013-06-11	2013-09-04
Ireland	2013-05-14	2013-09-03
Italy	2013-05-29	2013-08-27
Lithuania		
Latvia		
Malta	2013-06-12	2013-08-06
Netherlands	2013-06-12	2013-09-06
Poland	2013-06-11	2013-08-13
Portugal	2013-05-29	2013-08-14
Romania	2013-06-10	2013-07-19
Slovenia	2013-05-27	2013-07-19
Sweden	2013-06-13	2013-07-12

The overall number of uploads (number of templates uploaded), including successful and unsuccessful attempts, during and after the data call is presented in Figure 3.1. The first Member

State to upload data was Ireland on the second day after the data call been issued by DG MARE. The majority of the uploading activities have been performed during the last week of the data call. Uploading activities after the deadline were mainly driven by the data quality checks, performed by JRC. The United Kingdom was the only MS which did not respect the deadline, starting the uploading procedure after the deadline (on 8th of July). Due to the need to finish the pilot study for economic data collection, most of United Kingdom's economic data for 2011 have been uploaded few days before the STECF EWG 13-10. This delay compromised the quality of the data available for the analysis during the meeting. Italy also informed about the delay in uploading 2011 data, however the data quality been checked and data been prepared for the analysis in due time before the STECF meeting.

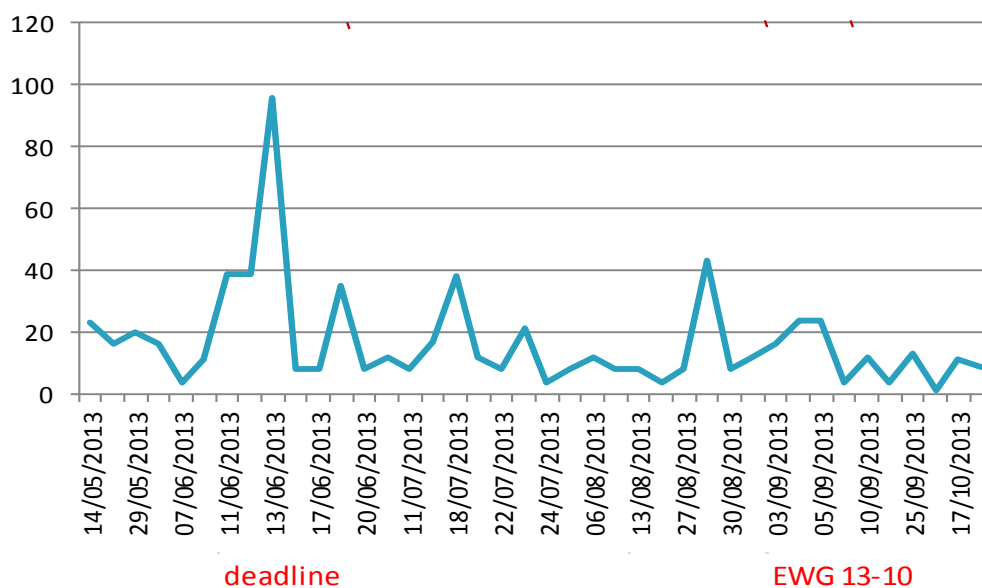


Figure 3.1 The total number of uploads during and after the Data call for aquaculture data

Table 3.1 presents the uploading activity by Member State, indicating the number of templates uploaded during each attempt. In most of cases MS were resubmitting all templates in order to make any changes.

Table 3.1 Uploading activity by Member State. Numbers indicate upload attempts, including unsuccessful attempts.

Country	14-May-13	27-May-13	29-May-13	5-Jun-13	7-Jun-13	10-Jun-13	11-Jun-13	12-Jun-13	13-Jun-13	14-Jun-13	17-Jun-13	18-Jun-13	20-Jun-13	8-Jul-13	11-Jul-13	12-Jul-13	18-Jul-13	19-Jul-13	22-Jul-13	23-Jul-13	24-Jul-13	5-Aug-13	6-Aug-13	9-Aug-13	13-Aug-13	14-Aug-13	27-Aug-13	28-Aug-13	30-Aug-13	2-Sep-13	3-Sep-13	4-Sep-13	5-Sep-13	6-Sep-13	10-Sep-13	12-Sep-13	25-Sep-13	4-Oct-13	17-Oct-13	18-Oct-13	upload attempt				
Bulgaria						8		4								8																											20		
Cyprus					4	3						9								11								25									12	13					77		
Denmark									38								26																										64		
Finland									16		4	4										8						12															44		
France										8																							8					4				20			
Germany									8				8																														16		
Greece							10					8																					8										26		
Ireland	23			12																																							39		
Italy			9																	10			8				8																	35	
Malta								14	8												4		4																					30	
Netherlands								21				14						12	8											12	12	8	24	4										115	
Poland							9	4																		8																		21	
Portugal			11																						8		4																		23
Romania						8			8																																			24	
Slovenia	16		4																																									24	
Spain							12				4																																	16	
Sweden									14							8	9																											31	
United Kingdom														12														6	8										1	11	9			47	

deadline

EWG 13-10 meeting

The cumulative number of rows, uploaded to the JRC data base is presented in the Figure 3.2. As we could see most of the activities been recorded during the data quality checks between deadline and STECF EWG 13-10 meeting.

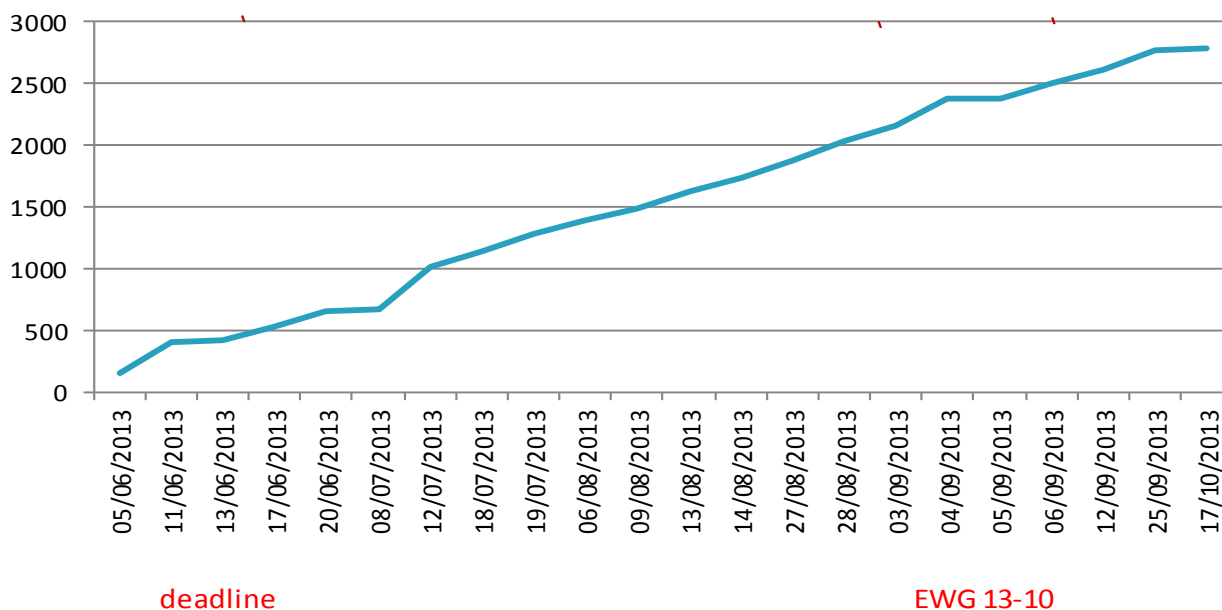


Figure 3.2 The cumulative number of rows, submitted during and after the Data call for aquaculture data

3.2 Coverage

Table 3.3 and Table 3.4 are showing the coverage of economic data provided by Member State, year and variable highlighting missing variables within each Member States' data set (at the national and segment level). All variables, requested during the data call are listed in the Appendix X of Commission Decisions 2008/949/EC and 2010/93/EU adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector. The segmentation of the aquaculture defined in the Appendix XI of the same regulations. The only optional variable, requested by the data call, is FTE by gender.

Overall, nine MS provided all the requested data at national level and for the time period analysed. Nine MS had at least one issue in their datasets. For some of these MS (e.g. Greece, United Kingdom and the Netherlands), the data issues were more problematic and limited a lot the analysis of the sector. The remaining four MS did not provide any data. These issues are further discussed by Member State in section 5.

Table 3.2: Summary of provided and missing data for all countries at the national level 2008-2011

	BGR	CYP	DEU	DNK	ESP	FIN	FRA*	GRC	IRL	ITA	MLT	NLD	POL	PRT	ROU	SVN	SWE	GBR			
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	
Income																					
Turnover	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Subsidies	0	0	0	0	y	y	y	y	0	0	0	0	y	y	y	0	0	0	0	y	y
Other income	0	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	0	0
Operating Costs																					
Wages and salaries	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Imputed value of unpaid labor	y	y	y	0	0	y	0	0	y	y	y	y	y	y	y	0	0	0	y	y	y
Energy costs	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Raw material: Feed costs	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Raw material: Livestock costs	y	y	y	y	y	0	y	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Repair and maintenance	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Other operational costs	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Capital Costs																					
Depreciation of capital	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Financial costs, net	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Extraordinary Costs																					
Extraordinary costs, net	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	0	0	0	y	y	y
Capital Value																					
Total value of assets	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Net Investments	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Debt	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Production																					
Raw material volume: Feed	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Raw material volume: Livestock	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Total sales volume	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Employment																					
Total employees	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Female employees	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Male employees	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
FTE	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Female FTE	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Male FTE	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Structure																					
Number of enterprises <=5 employees	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Number of enterprises >10 employees	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Number of enterprises 6-10 employees	y	y	y	y	y	0	0	0	y	y	y	y	y	y	y	y	y	y	y	y	y
Production by species																					
Sales production	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Turnover production	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y

y - data provided 0 - the parameter equals to 0 n - no data provided by MS * France provided these economic variables on segment level covering 93-95% of national turnover.

3.3 Comparison with other data sources

FAO and EUROSTAT data sets were used to compare the DCF data provided and the total aquaculture production by Member States. These results were used by STECF EWG 13-10 in order to assess quality of data, provided by MS.

The overall results of comparison are presented in the Figure 3.3. It should be noted that definitions and target population behind datasets differ leading to logical differences. FAO aquaculture covers all aquaculture production; while DCF requires only marine production (freshwater aquaculture production is optional). Definitions of aquaculture production units also differ. In DCF, definition follows that of the Structural Business Statistics, where a firm is considered an aquaculture firm only if the main activity of that firm is aquaculture, leaving secondary aquaculture out of scope. Additionally, production is defined differently: under DCF, juvenile production is included but not in the FAO dataset.

In general EUROSTAT and FAO data sets should be the same, or similar, however in case when countries are not providing the data, or providing it partially FAO is estimating all or part of production, some of the data was not provided to EUROSTAT as well leading the difference between FAO and EUROSTAT to appear. FAO values were also recalculated from dollars to euros using the official exchange rate.

The figure below was prepared using data on sales volume and turnover by segment from Aqua_economic.xls template, comparing with production volume and value from EUROSTAT and FAO. It should be noted that in some cases the economic data was provided only for a part of total production. The Figure 3.3 is showing that the overall data coverage is improving for 2008-2011 data sets (the difference between DCF and other data sources is decreasing). It should be noted, that when overall volume of DCF sales compared with the volume of production coming from FAO and EUROSTAT is lower, the value of production defined in the DCF as turnover is higher, compared with the other data sources. This difference in values could be explained by the fact that other invoiced products, e.g. services or sales of processed fish, or fish for non-human consumption might be accounted in the turnover under DCF.

Acknowledging these differences, the comparison gives an overview of the coverage of the data provided in the DCF data call. In the individual Member State evaluations (section 4) EWG 13-10 comments on the differences between data sets are provided when available.



Figure 3.3 Comparison between FAO, EUROSTAT and DCF production data by segment 2008-2011

3.4 Overall country by country analysis

Section 4 provides more in-depth analysis of the data coverage and quality issues relating to each Member State. All MS were analysed in terms of compliance with the time schedule (Table 4.X.1) of the data call and in terms of the variable list provided on the national totals and segment levels (Table 4.X.1).

A traffic lights system was used in order to evaluate the coverage of the data submitted. Each indicator was marked as either:

- Green (Yes), showing that the indicator was provided by the Member State;
- Yellow (0), showing cases then the indicator was equal to zero. This case was separated in order to detect strange values, as not all values might be equal to 0, e.g. subsidies could be equal to 0 if there are no direct subsidies for aquaculture in MS, however in the case of raw material costs it is possible that the value is missing (unless the aquaculture sector is represented only by shellfish farms). Another example of a missing value could be the imputed value of unpaid labour when a sector is represented by small enterprises, while in the case of enterprises with high levels of employment and production, the imputed value of unpaid labour may in fact be equal to zero;
- Red (No) – showing that no data was provided by the Member State.

Subsequent to the coverage evaluation performed by the JRC data collection team and national experts, several MS needed to re-upload data after the data call as well as during the STECF EWG 13-10 meeting. The first and last dates of uploading activity are presented as well as the total number of uploading attempts.

Subsection quality of evaluation by country is based on the STECF EWG 13-10 experts' comments and also includes comparison between DCF, EUROSTAT and FAO data. The figures in the national evaluation are based on the turnover and total sales volume indicators, provided in the Aqua_economic.xls template by segment.

The overall results of the analysis are presented in the Table 3.4.

Table 3.4. Summary of missing data by country.

Country	Comments
Belgium	No data have been provided (Belgium requested derogation in 2012 for 2012 and 2013 data collection for aquaculture).
Bulgaria	Only few variables (number of enterprises by size category, turnover for 2008-2010, livestock costs (2008), livestock volume and total sales volume for 2008-2010) were disaggregated at the segment level. The turnover and sales volume by specie was not reported by DCF segment for 2011.
Cyprus	Cyprus provided all economic variables at the national level. However, due to a low number of firms only turnover and sales volume by specie have been provided by segments. Some information is provided by group of species instead of by specie (3 alpha code).
Denmark	No major deviations from the data call.
Estonia	Some information was provided in the previous data calls, but not in 2013. Most of the aquaculture sector is represented by fresh water aquaculture.
Finland	No major deviations from the data call. The only minor deviation is missing Net investment by segment for 2008.
France	Most of the economic variables for 2008-2009 (subsidies, other income, all costs items, debt, capital value and raw material) were missing. The full set of economic variables for France is available only for 2010-2011; however the national totals were not estimated, as not all aquaculture segments are fully covered by data collected. The missing segments represented 6-7% of overall turnover.
Germany	Germany provided full set of data required under DCF. The data covers only marine aquaculture segments. Due to confidentiality reasons, no data have been provided for oyster aquaculture, so the national totals correspond only to mussel production in marine waters.
Greece	Most of DCF economic variables (other income, all costs parameters, capital value raw material and employment (by gender and in FTE)) are missing. Only variables, covered by other data collections are provided for 2008-2011.
Ireland	No major deviations from the data call.
Italy	Following Italian NP, Italy submitted all requested information for 2008-2010 in due time of the data call, 2011 data set has been submitted in August. Following JRC data quality checks corrections been done before the STECF EWG 13-10 meeting. The only minor deviation from the data call is missing debt parameter for 2008.
Latvia	Not applicable.
Lithuania	Not applicable.
Malta	No major deviations from the data call. The only variable missing is live stock volume for 2008-2009 at national total level.
Netherlands	The Netherlands has a two year data collection lag, i.e. data for 2011 had not been collected by the end of the STECF EWG 13-10 meeting. No data has been provided for 2011. For the rest of the time frame, the following parameters were not submitted: <ul style="list-style-type: none"> • Number of enterprises by size category and segment for 2008-2010 • Number of employees by gender; • FTE total and by gender (not obligatory) Imputed value of unpaid labour and volume of raw material have been either not provided or provided as zero values. According to the Dutch expert the

Country	Comments
	imputed value of unpaid labour was not estimated.
Poland	Poland provided all economic indicators for 2009-2011 at the national totals and segment level. For 2008 the only variable provided is production by specie.. Turnover and sales by specie covered all aquaculture production; while economic variables were collected and reported only for marine aquaculture.
Portugal	<p>The following parameters were not submitted for 2008:</p> <ul style="list-style-type: none"> • Wages and salaries • Imputed value of unpaid labour • Repair and maintenance • Capital costs • Extraordinary costs • Capital value • Employment (except total employees)
Romania	Romania didn't provide data for 2008. Number of enterprises by size category, employment indicators and total sales volume by segment are missing for 2011.
Slovenia	No major deviations from the data call.
Spain	Data has been submitted for all economic parameters for years 2008-2011. Turnover by species was provided for 2008-2011 but sales volume as well as livestock volume was missing for 2008-2010.
Sweden	No major deviations from the data call. FTE by gender by segment, which is optional for aquaculture data collection, was missing. The data set also covered aquaculture activities in fresh water.
United Kingdom	<p>UK didn't respect the deadline of the data call.</p> <p>During 2013 data call for aquaculture data UK provided data for 2011, the other part of the data set been imported from 2012 data call data base. Compared to 2012 data call the coverage of UK data (reference year 2011) improved, however most of indicators were still missing on the segment level.</p> <p>For DCF data, the following parameters were missing:</p> <ul style="list-style-type: none"> • Turnover 2008-2010 segment level; • Subsidies and other income 2008-2011 segment level; • Wages and salaries and other operating costs 2008-2010 segment level; • Imputed value of unpaid labour 2009-2010, no data on the segment level for 2008-2011; • Energy costs, raw material costs and repair and maintenance 2008-2010; • Depreciation, financial costs net, Extraordinary costs net, net investments, debt, raw material volume 2008-2010, 2011 data provided only on national total level; • Total value of assets no data on segment level; • Total sales volume 2008-2010; • Employment - no data on segment level; • Number of enterprises by size category – no data on segment level

4 COUNTRY BY COUNTRY EVALUATION

4.1 Belgium

4.1.1 Delivery of data

Belgium requested derogation for 2012 and 2013 data collection for aquaculture.

4.1.2 Coverage

Not applicable

4.1.3 Quality

Not applicable

4.2 Bulgaria

4.2.1 Delivery of data

Bulgaria submitted all datasets within the deadline. After the initial JRC data checks, Bulgaria re-uploaded data correcting for technical. The data been corrected and validated in due time prior to the STECF EWG 13-10 meeting (see Table 4.1.)

Table 4.1: Summary of uploads for Bulgaria

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-11	2013-07-12	3	0
Economic_2009	2013-06-11	2013-07-12	3	0
Economic_2010	2013-06-11	2013-07-12	3	0
Economic_2011	2013-06-11	2013-07-12	3	0
Production_2008	2013-06-11	2013-07-12	2	0
Production_2009	2013-06-11	2013-07-12	2	0
Production_2010	2013-06-11	2013-07-12	2	0
Production_2011	2013-06-11	2013-07-12	2	0

4.2.2 Coverage

Bulgaria provided all the requested variables for the total national production (Table 4.2). There is no 'other income' or 'direct subsidies' in the aquaculture sector of this MS.

Only a few variables (number of enterprises by size category, turnover for 2008-2010, livestock costs (2008), livestock volume and total sales volume for 2008-2010) were disaggregated at the segment level. The turnover and sales volume by specie been partially reported by DCF segment.

4.2.3 Quality

The main reason for the discrepancy between the DCF, FAO and Eurostat data is that the DCF data is reported as information only for indicators of those farmers, who submitted statistical questionnaires. Achieved sample rate for economic data for 2011 was 29 %, in 2010 was 70 %, in 2009 was 41 % and in 2008 was 50 %. An approximation of the performance of those who have not filled in statistical form was not carried out. Achieved sample rate for volume and value of fish species is 100 %.

Until 2011, questionnaires for economic statistics were anonymous and had no possibilities to compare the revenues and costs with those of the annual financial statements provided by companies.

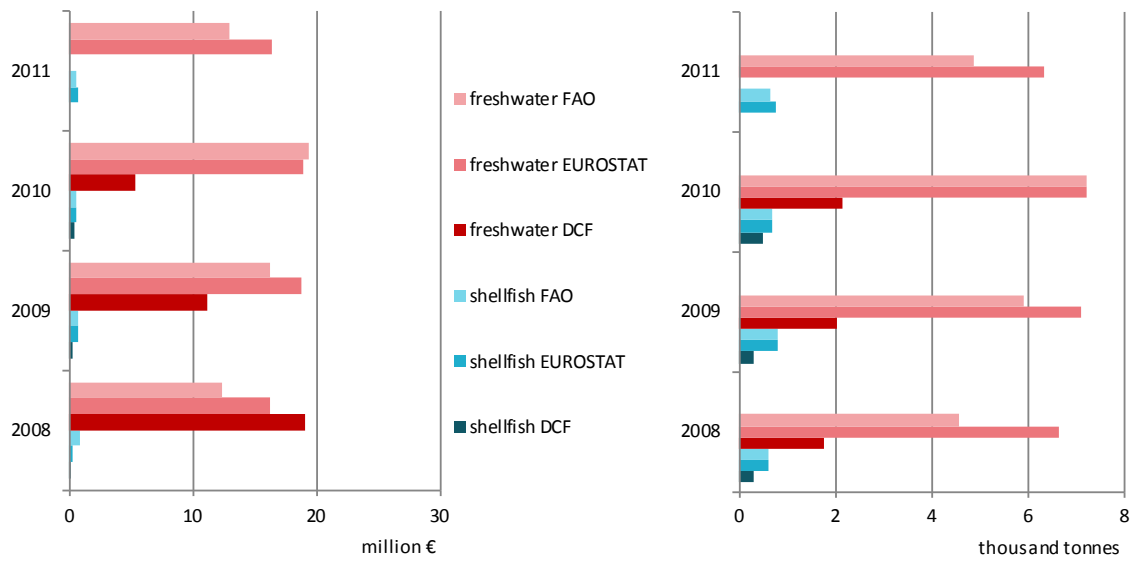


Figure 4.1 Comparison of Bulgarian data by segment with other data sources: 2008-2011.

Table 4.2: Coverage of the data, provided by Bulgaria by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	yes	yes	yes	yes	yes	yes	yes	no
Subsidies	0	no	0	no	0	no	0	no
Other income	0	no	0	no	0	no	0	no
Operating Costs								
Wages and salaries	yes	no	yes	no	yes	no	yes	no
Imputed value of unpaid labour	yes	no	yes	no	yes	no	yes	no
Energy costs	yes	no	yes	no	yes	no	yes	no
Raw material costs: Feed costs	yes	no	yes	no	yes	no	yes	no
Raw material costs: Livestock costs	yes	yes	yes	no	yes	no	yes	no
Repair and maintenance	yes	no	yes	no	yes	no	yes	no
Other operational costs	yes	no	yes	no	yes	no	yes	no
Capital Costs								
Depreciation of capital	yes	no	yes	no	yes	no	yes	no
Financial costs, net	yes	no	yes	no	yes	no	yes	no
Extraordinary Costs								
Extraordinary costs, net	yes	no	yes	no	yes	no	yes	no
Capital Value								
Total value of assets	yes	no	yes	no	yes	no	yes	no
Net Investments	yes	no	yes	no	yes	no	yes	no
Debt	yes	no	yes	no	yes	no	yes	no
Production								
Raw material volume: Feed	yes	no	yes	no	yes	no	yes	no
Raw material volume: Livestock	yes	yes	yes	yes	yes	yes	yes	no
Total sales volume	yes	yes	yes	yes	yes	yes	yes	no
Employment								
Total employees	yes	no	yes	no	yes	no	yes	no
Female employees	yes	no	yes	no	yes	no	yes	no
Male employees	yes	no	yes	no	yes	no	yes	no
FTE	yes	no	yes	no	yes	no	yes	no
Female FTE	yes	no	yes	no	yes	no	yes	no
Male FTE	yes	no	yes	no	yes	no	yes	no
Structure								
Number of enterprises <=5 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises >10 employees	yes	0	yes	0	yes	0	yes	0
Number of enterprises 6-10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	no
Turnover production	yes	yes	yes	yes	yes	yes	yes	no

4.3 Cyprus

4.3.1 Delivery of data

Cyprus provided all the requested variables on the deadline. Following the JRC data collection team's quality checks and communication with national authorities, there were several data re-submissions. The last update took place on 25 of September 2013 (Table 4.3).

Table 4.3: Summary of uploads for Cyprus

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-07	2013-09-25	7	6
Economic_2009	2013-06-07	2013-09-25	7	1
Economic_2010	2013-06-07	2013-09-25	7	1
Economic_2011	2013-06-07	2013-09-25	4	3
Production_2008	2013-06-10	2013-09-25	12	4
Production_2009	2013-06-10	2013-09-25	9	3
Production_2010	2013-07-23	2013-09-25	6	1
Production_2011	2013-06-10	2013-09-25	7	1

4.3.2 Coverage

Cyprus provided all economic variables at the national level. However, due to a low number of firms only turnover and sales volume by specie have been provided by segments.

4.3.3 Quality

In some occasions before 2009 there were some differences between the data submitted to different institutions. This is due to the fact that the new national data base for aquaculture started to operate in 2009 which clearly shows that the cohesion of data sent from 2009 and onward to the different institutions has been greatly improved. Furthermore some parameters are submitted in different units. For example for FAO and EUROSTAT the amount of fry is submitted in number of individuals while for the DCF they are submitted in weight.

Another problem that is encountered is the fact of double counting some quantities of fish. Specifically in cases then some aquaculture companies supplied fish for other aquaculture companies in order to satisfy the needs of their clients. This quantity is not double counted in the production but is double counted in the sales because both companies issue invoices for the fish so as a result the same fish being counted twice in the turnover of the companies. This is the main reason for mismatches in the turnover compared with the value of production.

Furthermore efforts will be made in order to align the data sent to the different institutions for the previous years.



Figure 4.2 Comparison of Cyprian data by segment with other data sources: 2008-2011.

Table 4.4: Coverage of the data, provided by Cyprus by variable

	2008		2009		2010		2011	
	Nat. tot.	/ by seg	Nat. tot.	/ by seg	Nat. tot.	/ by seg	Nat. tot.	/ by seg
Income								
Turnover	yes	no	yes	no	yes	no	yes	yes
Subsidies	yes	no	yes	no	yes	no	yes	no
Other income	yes	no	yes	no	yes	no	yes	no
Operating Costs								
Wages and salaries	yes	no	yes	no	yes	no	yes	no
Imputed value of unpaid labour	0	no	0	no	yes	no	0	no
Energy costs	yes	no	yes	no	yes	no	yes	no
Raw material costs: Feed costs	yes	no	yes	no	yes	no	yes	no
Raw material costs: Livestock costs	yes	no	yes	no	yes	no	yes	no
Repair and maintenance	yes	no	yes	no	yes	no	yes	no
Other operational costs	yes	no	yes	no	yes	no	yes	no
Capital Costs								
Depreciation of capital	yes	no	yes	no	yes	no	yes	no
Financial costs, net	yes	no	yes	no	yes	no	yes	no
Extraordinary Costs								
Extraordinary costs, net	yes	no	yes	no	yes	no	yes	no
Capital Value								
Total value of assets	yes	no	yes	no	yes	no	yes	no
Net Investments	yes	no	yes	no	yes	no	yes	no
Debt	yes	no	yes	no	yes	no	yes	no
Production								
Raw material volume: Feed	yes	no	yes	no	yes	no	yes	no
Raw material volume: Livestock	yes	no	yes	no	yes	no	yes	no
Total sales volume	yes	no	yes	no	yes	no	yes	no
Employment								
Total employees	yes	no	yes	no	yes	no	yes	no
Female employees	yes	no	yes	no	yes	no	yes	no
Male employees	yes	no	yes	no	yes	no	yes	no
FTE	yes	no	yes	no	yes	no	yes	no
Female FTE	yes	no	yes	no	yes	no	yes	no
Male FTE	yes	no	yes	no	yes	no	yes	no
Structure								
Number of enterprises <=5 employees	yes	no	yes	no	yes	no	yes	no
Number of enterprises >10 employees	yes	no	yes	no	yes	no	yes	no
Number of enterprises 6-10 employees	yes	no	yes	no	yes	no	yes	no
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	yes
Turnover production	yes	yes	yes	yes	yes	yes	yes	yes

4.4 Denmark

4.4.1 Delivery of data

All datasets requested were uploaded to the database before the deadline. Re-submissions occurred following the data quality checks made by JRC. The last data upload took place on the 18 of July 2013 (Table 4.5).

Table 4.5: Summary of uploads for Denmark

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-13	2013-07-18	15	0
Economic_2009	2013-06-13	2013-07-18	15	4
Economic_2010	2013-06-13	2013-07-18	14	0
Economic_2011	2013-06-13	2013-07-18	4	4
Production_2008	2013-06-13	2013-07-18	3	4
Production_2009	2013-06-13	2013-07-18	3	0
Production_2010	2013-06-13	2013-07-18	3	4
Production_2011	2013-06-13	2013-07-18	3	0

4.4.2 Coverage

Data provided by Denmark covered all parameters national totals and segment level. The difference between the national and segments totals was explained by unavailability of economic indicators for small segments falling under confidentiality rules. Denmark also provided all variables for fresh water aquaculture. The full list of data provided by variable by year is presented in Table 4.6. There are no direct subsidies in the Danish aquaculture sector.

4.4.3 Quality

Data quality

The account statistic for 2011 is based on a sample of 120 aquaculture farms, which covers 54 % of the total population of 223 farms. The sample covers 78 % of the total income of the population. Furthermore, data on sales volume and value, purchase of livestock raw material of fish are available for all farms.

The Danish Directorate of Fisheries has registered the total population of farms and enterprises engaged in aquaculture production in Denmark. It is mandatory for all aquaculture producers in Denmark to report the production in volume and value each year at the farm level. Furthermore, the species produced and the technique used in the production is reported.

The data for The Danish Account Statistics for Aquaculture is collected by Statistics Denmark. The collection is based on the total population of farms provided by The Danish Directorate of Fisheries. The data is collected at farm level, and can be aggregated to the enterprise level. The data is collected at farm level to get the most homogeneous segments in terms of species and technique. The Danish Account Statistics for Aquaculture collects economic data for costs and earnings and balance sheets. Data is collected on a voluntary basis from the owner's chartered accountant. The accountant's task is to report the accounts of his aquaculture clients to Statistics Denmark in a special form where the account information is harmonized for statistical use. Statistics Denmark validates the data from each account in a specially designed data system for

quality control. The Danish Commerce and Companies Agency (DCCA) also collect account data for enterprises, but not for single holders. For enterprises which are not reported by the chartered accountant, the accounts from DCCA are used.

The extrapolation of the sample to the total population is done in two steps. In the first step all results from the collected accounts are entered into a database containing information on all existing aquaculture producers in Denmark. From the collected accounts an average is calculated for all indicators in each segment. In the second step, an account for the remaining population is estimated based on the average calculated in the first step and the information collected by the Danish Directorate of Fisheries. The underlying assumptions for this calculation are that the production function for each farm is identical within each segment. When the production function is identical, the costs and earnings can be distributed from the sales volume and value in each account.

Confidentiality

The 4 segments that are surveyed in Denmark are presented in the STECF report. To avoid problems with confidentiality, segments should in general include more than 10 enterprises. In Denmark, both the production of the sea cages farms and the production of eel and other species in land based recirculation systems are quite significant in terms of value, and even though these two segments include less than 10 companies, they are surveyed. In order to present detailed data collected from these two segments, nearly all enterprises have agreed to participate in the survey.

Input of experts about the segmentation on enterprise level, the homogeneity of the segments in terms of techniques and species

All segments provided by Statistics Denmark have a high degree of homogeneity both concerning the species and technique. The separation of species into segments is 100 %, but if an enterprise produces more than one species, then it is allocated to the segment of the species that contributes the most to the turnover.

Some enterprises own more than one farm using different techniques. In Denmark these activities are split up, because the farm is used as data collection unit. When farms are aggregated into enterprises again, the enterprise is allocated to the segment, where its turnover is highest. There are very few examples of enterprises using more than one technique.

Under the existing regulation, the farmer's main focus is to optimize production based on the feed quota, whilst he has no incentive to reduce the pollution discharged from the farm, because there is no feedback between this, and production and profit. A regulatory change to individual pollution rights on nitrogen can ensure that the most efficient farmers will be the ones who produce. This can potentially increase production and profit, without increasing pollution. Furthermore, it would provide the farmers with an incentive to reduce pollution in order to increase production and profitability, which would lead to further development and the adoption of new environmentally friendly production methods and technologies. It is important to identify the possible gains and losses of regulatory changes, as in this paper, because if a regulation is not optimal, it can lead to welfare losses for the society and individual producers.

Differences in DCF data compared with other official data sources Eurostat and FAO

The Danish data for DCF is, in most cases, in line with both value and production registered in FAO and EUROSTAT. However the Danish data for the freshwater sector provided for the DCF also contains value and volume for the Danish hatcheries and nurseries and production of smolts for

the sea cage farms. The volume and value therefore exceeds the volume and value registered in FAO and EUROSTAT, which only contains the value and volume for fish for consumption. Furthermore, the value registered for the marine production is also a bit higher due to the income registered for DCF is turnover where the calculated value for the fish in FAO and EUROSTAT is first sale prices of the fish sold. Marine data from EUROSTAT on value 2010 is incorrect.

Furthermore, there are some differences in the volume and value collected by the Danish Directorate of Fisheries, which reports to EUROSTAT and FAO, and Statistics Denmark which reports to DCF. In general, both volume and value are higher in Statistics Denmark Aquaculture Account Statistics. The reason is that the value and volume in the Account Statistics are measured in enterprise sales, while the numbers from the Danish Directorate of Fisheries are measured as farm production and revenue as production value in farm gate prices. Secondly, the data collected by Statistics Denmark are account data and the account year does not necessarily coincide with the calendar year.

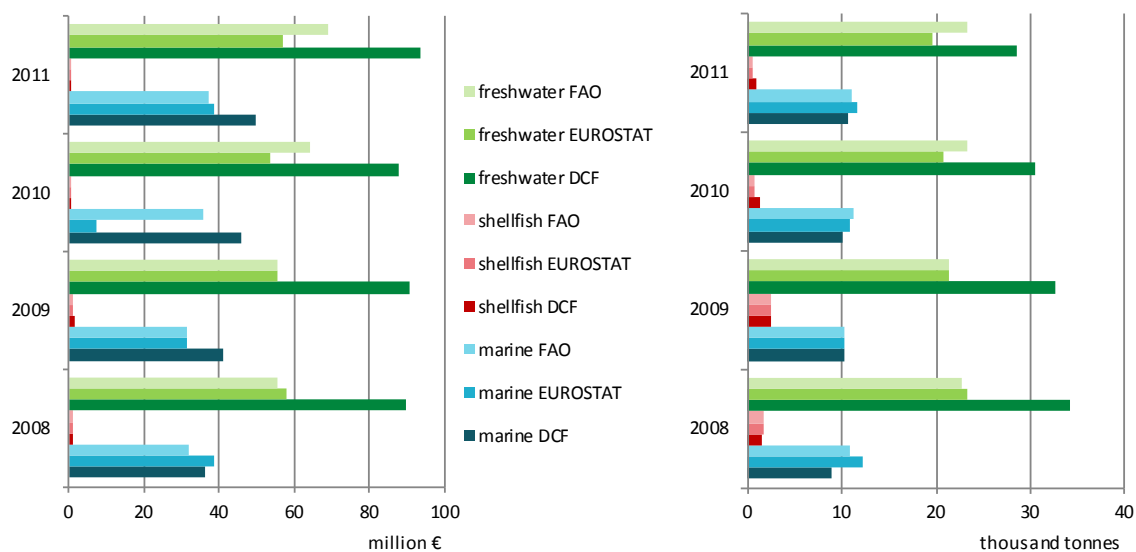


Figure 4.3 Comparison of Danish data by segment with other data sources: 2008-2011.

Table 4.6: Coverage of the data, provided by Denmark by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	0 0	0 0	0 0	0 0
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	yes yes	yes yes	yes yes	yes yes
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.5 Estonia

4.5.1 Delivery of data

No data provided.

4.5.2 Coverage

Not applicable

4.5.3 Quality

Not applicable

4.6 Finland

4.6.1 Delivery of data

All Finnish data sheets were uploaded before the data call deadline. Following the JRC data checks, information been updated before the STECF EWG 13-10 meeting. The last data upload took place on the 28 of August 2013 (Table 4.7).

Table 4.7: Summary of uploads for Finland

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-13	2013-08-28	10	0
Economic_2009	2013-06-13	2013-08-28	6	0
Economic_2010	2013-06-13	2013-08-28	6	0
Economic_2011	2013-06-13	2013-08-28	6	0
Production_2008	2013-06-13	2013-08-28	4	0
Production_2009	2013-06-13	2013-08-28	4	0
Production_2010	2013-06-13	2013-08-28	4	0
Production_2011	2013-06-13	2013-08-28	4	0

4.6.2 Coverage

All variables required by DCF were provided at the national and segment levels, including fresh water and salt water species, for 2008–2011. The only variable not disaggregated at segment level was Net investment for 2008. Table 4.8 presents the full list of data provided by variable and year.

4.6.3 Quality

Economic EU data collection of aquaculture sector in Finland combines information from different data sources. Main sources are a production survey of Finnish Game and Fisheries Institute, Structural Business Statistics of Statistic Finland (SF) and account survey conducted by Finnish Game and Fisheries Institute. Financial statements were available for all firms in Business Register having aquaculture as the main activity.

Primary sources of financial statements data in Statistics Finland are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheets and profit and loss account data. Statistics Finland checks for the validity of the data. Any missing data was estimated within stratum. Account data was surveyed by Finnish Game and Fisheries Institute by stratified survey to detect the detailed cost structure of fish farms. Cost and earnings estimates were done by design-based and model assisted regression and ratio estimation. The cost variables were estimated with ratio estimation from financial statements. A production survey was collected exhaustively from the producers. Any missing information was estimated by stratum.

The Finnish Game and Fisheries Institute provide the data on aquaculture for FAO, EUROSTAT and the DCF and the differences in the Figure 4.4 are due to different estimation and classification practises of these organisations and different data needs. FAO and EUROSTAT data include all aquaculture production in Finland, including also production of companies that are not main activity producers whereas DCF data includes only those companies that have aquaculture as their main business activity. In addition EUROSTAT and FAO data include only food fish production and no juvenile or fry production. Both fish produced for human consumption and fry are included in

the DCF data. The DCF data here should be regarded as total aquaculture production of Finland (including both marine and inland production) due to classification by fish species rather than division to marine and inland. In Figure 4.4 DCF data of production value is based on the turnover of aquaculture companies instead of the sales value of cultured fish and fry. The turnover can include other business activities and is not limited to the pure sales of aquaculture products produced by the company.

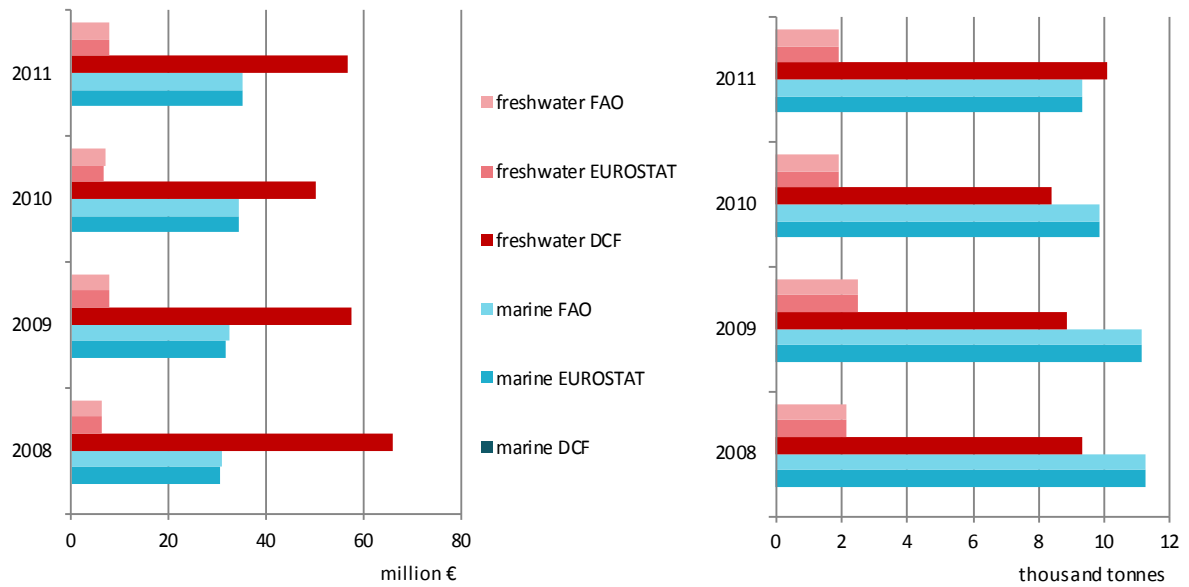


Figure 4.4 Comparison of Finnish data by segment with other data sources: 2008-2011.

Table 4.8: Coverage of the data, provided by Finland by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	yes	yes	yes	yes	yes	yes	yes	yes
Subsidies	0	0	0	0	0	0	0	0
Other income	yes	yes	yes	yes	yes	yes	yes	yes
Operating Costs								
Wages and salaries	yes	yes	yes	yes	yes	yes	yes	yes
Imputed value of unpaid labour	yes	yes	yes	yes	yes	yes	yes	yes
Energy costs	yes	yes	yes	yes	yes	yes	yes	yes
Raw material costs: Feed costs	yes	yes	yes	yes	yes	yes	yes	yes
Raw material costs: Livestock costs	yes	yes	yes	yes	yes	yes	yes	yes
Repair and maintenance	yes	yes	yes	yes	yes	yes	yes	yes
Other operational costs	yes	yes	yes	yes	yes	yes	yes	yes
Capital Costs								
Depreciation of capital	yes	yes	yes	yes	yes	yes	yes	yes
Financial costs, net	yes	yes	yes	yes	yes	yes	yes	yes
Extraordinary Costs								
Extraordinary costs, net	yes	yes	yes	yes	yes	yes	yes	yes
Capital Value								
Total value of assets	yes	yes	yes	yes	yes	yes	yes	yes
Net Investments	yes	no	yes	yes	yes	yes	yes	yes
Debt	yes	yes	yes	yes	yes	yes	yes	yes
Production								
Raw material volume: Feed	yes	yes	yes	yes	yes	yes	yes	yes
Raw material volume: Livestock	yes	yes	yes	yes	yes	yes	yes	yes
Total sales volume	yes	yes	yes	yes	yes	yes	yes	yes
Employment								
Total employees	yes	yes	yes	yes	yes	yes	yes	yes
Female employees	yes	yes	yes	yes	yes	yes	yes	yes
Male employees	yes	yes	yes	yes	yes	yes	yes	yes
FTE	yes	yes	yes	yes	yes	yes	yes	yes
Female FTE	yes	yes	yes	yes	yes	yes	yes	yes
Male FTE	yes	yes	yes	yes	yes	yes	yes	yes
Structure								
Number of enterprises <=5 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises >10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises 6-10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	yes
Turnover production	yes	yes	yes	yes	yes	yes	yes	yes

4.7 France

4.7.1 Delivery of data

France uploaded all the requested datasets in due time. However, the data needed to be changed after JRC data quality checks. The last data upload of production by specie data has been done during the STECF EWG 13-10 meeting while the economic variables have been updated on 12 of September 2013 (Table 4.9).

Table 4.9: Summary of uploads for France

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-14	2013-09-12	3	0
Economic_2009	2013-06-14	2013-09-12	3	0
Economic_2010	2013-06-14	2013-09-12	3	0
Economic_2011	2013-06-14	2013-09-12	3	0
Production_2008	2013-06-14	2013-09-04	2	0
Production_2009	2013-06-14	2013-09-04	2	0
Production_2010	2013-06-14	2013-09-04	2	0
Production_2011	2013-06-14	2013-09-04	2	0

4.7.2 Coverage

Turnover, Employment, Structure and Production data was provided by species and at the national total and segment level. However, most of the economic variables for 2008-2009 were missing. The full set of economic variables for France is available only for 2010-2011 (Table 4.10 gives a full list of data provided by variable by year), however the national totals were not estimated, as not all aquaculture segments are fully covered by data collected. The missing segments represented 6-7% of overall turnover.

4.7.3 Quality

The comparison between 2008-2009 and 2010-2011 is not possible due to the addition of 4 new segments which are added since 2010 in the global statistic: "other marine fish on growing" (segment 6.2) is a mix of few but very different fish farms; "other shellfish rafts" (segment 10.1), "other shellfish long line"(segment 10.2), and "other shellfish bottom" (segment 10.3), merge firms which produce jointly oyster and mussel.

Decision to consider shellfish farms in "oyster" or "mussel" segments is based on the turnover ratio of one of these species to the overall turnover; otherwise the firm is included in "other shellfish". In 2011, this minimum ratio was fixed to 60% and data for 2010 have been updated to respect this segmentation.

Economic parameters (turnover, subsidies, other income, total income, wages and salaries, imputed value of unpaid labour, energy costs, raw material costs: livestock costs, raw material costs: feed costs, repair and maintenance, other operational costs, depreciation of capital, financial costs net, extraordinary costs net, total value of assets, net investments, debt, raw material volume: livestock, raw material volume: feed) are not available for all segments, but the main ones. These economic parameters are available for 9 segments corresponding to 93% of the total turnover. Therefore, even if total data is presented for the whole French aquaculture sector,

economic indicators have been calculated only using data for these main indicators where all economic data was available.

In 2010, DPMA with LEMNA, an economy laboratory from Nantes University, have set up a working group with 2 subgroups: shellfish farming, fish farming. Each subgroup has clarified how production data should be used to determine the membership of each enterprise to a particular DCF segment as no precise recommendation was found in the DCF regulation, especially on species level for shellfish. To improve the accuracy of sampling, the subgroup defined the stratification to be applied within each segment. The subgroups had also to characterize more precisely the content of each economic indicator.

For shellfish farming, the subgroup involves two enterprise accounts management centres that transmit economic data, on an anonymous basis, from a sample of the accounting records of enterprises that they follow. To determine the membership of an enterprise to a segment and stratum, to give full detailed economic data, these centres collect additional data to the standard accounting records.

The planned sample rate is from 15 to 20%. Apart from production and employment, economic data couldn't be transmitted for some segments: mussels and other shellfish on raft or long line. Enterprises in these segments are located on Mediterranean coast where the enterprise accounts management centres have just started to collect the additional data needed for DCF. Samples were in too small numbers and didn't represent properly the population.

For year 2011, the socioeconomic data of 402 enterprises in the shellfish farms segments was collected (274 in 2010) representing 13.7% of the population and 399 samples were used to cover 5 segments, giving a good precision.

The socioeconomic data of 8 enterprises in the marine fish segments was collected, covering the sea bass and sea bream segments. The achieved sampling rate was high (80%) for hatcheries and nurseries, resulting in a good precision; it was low for the cage segment (25%). The latter segment represent a limited population of 16 enterprises with a high variation from small farms to very important ones, giving a poor precision of economic data.

The socioeconomic data of 51 enterprises in the trout segments was collected for year 2011, representing 16% of the population. As these segments show a high variation from small farms to very important ones, this sampling rate give a medium precision for economic data.

Comparison of sales between different sources

In application of regulation EC 762/2008 of the European Parliament and of the Council, France is reporting every year the production in volume and unit price to Eurostat with a copy to FAO statistics unit. The production concerns mainly the adult animals which are sold for human consumption in general, for river restocking or recreational fishing additionally in the case of fresh water farming. These numbers don't take in account the commercial activity between farmers for livestock exchange at intermediate growth stages.

Economic data transmitted in the DCF program are reporting in one hand the whole sales (in volume and turnover) from the enterprises, including animals (adults or juveniles) sold from one farm to another farm which will carry on subsequent rearing up. In another hand, economic data include livestock bought (in volume and cost) by enterprises from other farmers.

The ratio livestock cost on sales turnover is 30% in shellfish farming (mainly oyster segments) and 9% in fresh water farming (mainly trout segments).

This explains the main difference in 2010 and 2011 between Eurostat production data and DCF turnover figures.

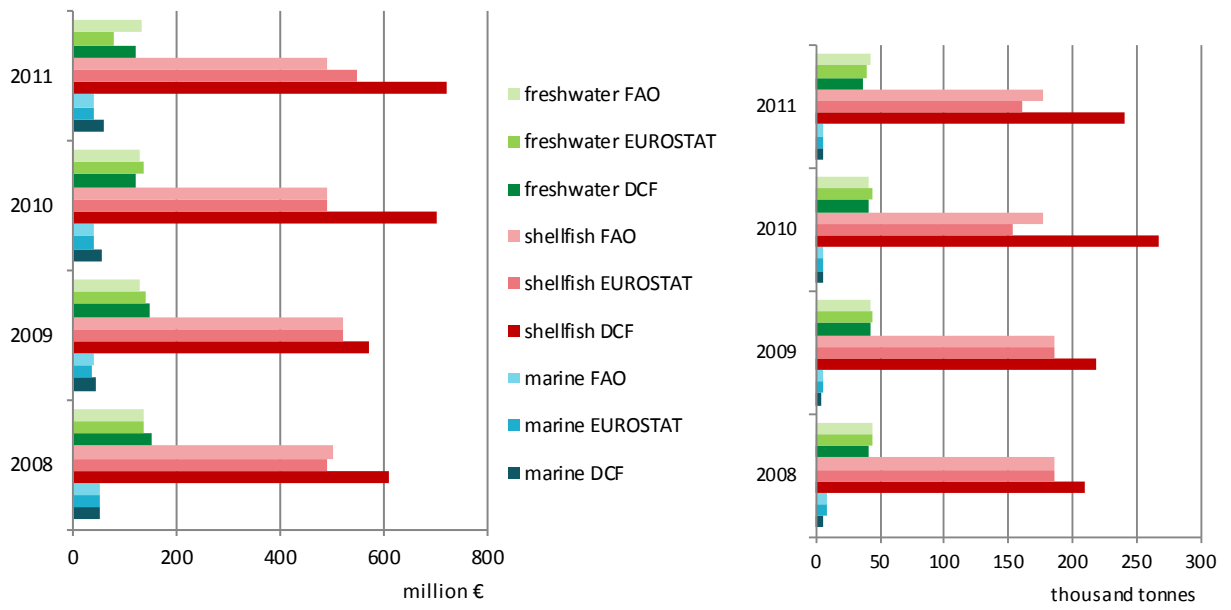


Figure 4.5 Comparison of French data by segment with other data sources: 2008-2011.

Table 4.10: Coverage of the data, provided by France by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	no no	no no	no yes	no yes
Other income	no no	no no	no yes	no yes
Operating Costs				
Wages and salaries	no no	no no	no yes	no yes
Imputed value of unpaid labour	no no	no no	no yes	no yes
Energy costs	no no	no no	no yes	no yes
Raw material costs: Feed costs	no no	no no	no yes	no yes
Raw material costs: Livestock costs	no no	no no	no yes	no yes
Repair and maintenance	no no	no no	no yes	no yes
Other operational costs	no no	no no	no yes	no yes
Capital Costs				
Depreciation of capital	no no	no no	no yes	no yes
Financial costs, net	no no	no no	no yes	no yes
Extraordinary Costs				
Extraordinary costs, net	no no	no no	no yes	no yes
Capital Value				
Total value of assets	no no	no no	no yes	no yes
Net Investments	no no	no no	no yes	no yes
Debt	no no	no no	no yes	no yes
Production				
Raw material volume: Feed	no no	no no	no yes	no yes
Raw material volume: Livestock	no no	no no	no yes	no yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.8 Germany

4.8.1 Delivery of data

All requested data sets were uploaded before the data call deadline. The last upload been done at the 20 of June 2013 (Table 4.11).

Table 4.11: Summary of uploads for Germany

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-13	2013-06-20	2	0
Economic_2009	2013-06-13	2013-06-20	2	0
Economic_2010	2013-06-13	2013-06-20	2	0
Economic_2011	2013-06-13	2013-06-20	2	0
Production_2008	2013-06-13	2013-06-20	2	0
Production_2009	2013-06-13	2013-06-20	2	0
Production_2010	2013-06-13	2013-06-20	2	0
Production_2011	2013-06-13	2013-06-20	2	0

4.8.2 Coverage

Germany provided the full set of data required under DCF. Provided data covers only marine aquaculture segments. Due to confidentiality, no data have been provided for oyster aquaculture, so the national totals correspond only to mussel production in marine waters. Table 4.12 provides the full list of the DCF data submitted by variable and year.

4.8.3 Quality

Differences from DCF data to other sources concerning shellfish are not really explainable, as the volume and value is officially reported. Maybe some small producers from the freshwater sector are included in FAO and Eurostat data. This belongs to values as well. Concerning different values between Eurostat and FAO data the calculation from Euro values to USD and back may causes some of the differences. Differences in freshwater production volume and sales are discussed in detail in STECF EWG 13-10 report.

Germany didn't provide data for fresh water aquaculture this mainly explains the difference between DCF data and other data sources on the national total level.

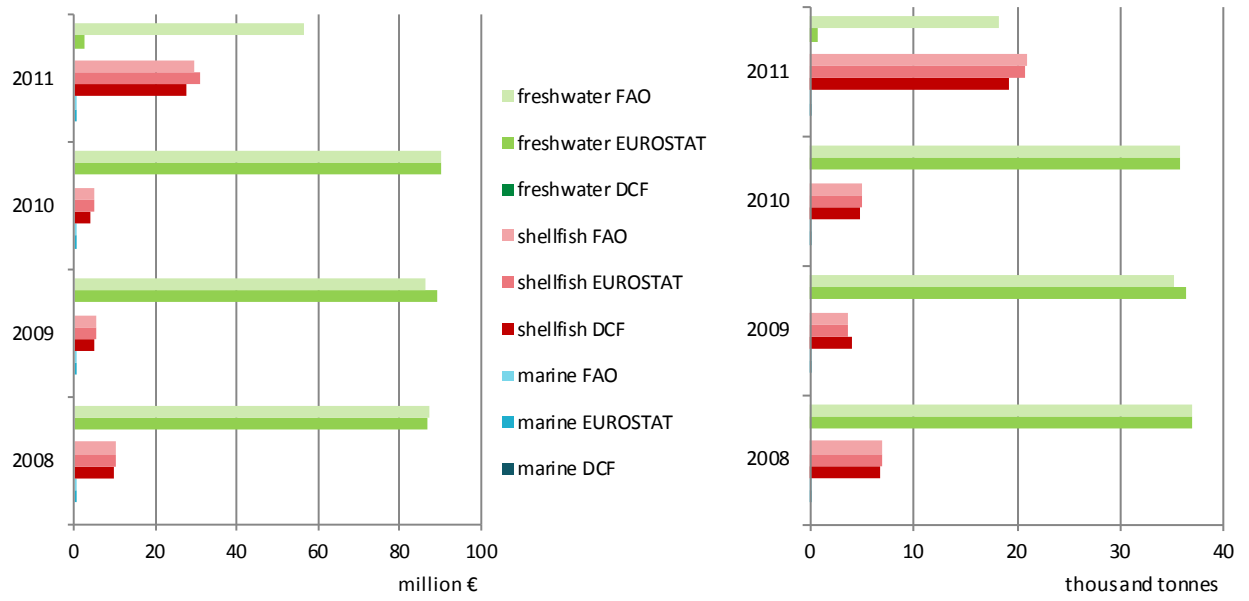


Figure 4.6 Comparison of German data by segment with other data sources: 2008-2011.

Table 4.12: Coverage of the data, provided by Germany by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	yes yes	yes yes	0 0	0 0
Other income	yes yes	yes yes	0 0	0 0
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	0 0	0 0	0 0
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	0 0	0 0	0 0	0 0
Raw material costs: Livestock costs	0 0	yes yes	yes yes	0 0
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	0 0	0 0	0 0	0 0
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	0 0	0 0	0 0	0 0
Raw material volume: Livestock	0 0	0 0	yes yes	0 0
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	0 0	0 0	0 0	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	0 0	0 0	0 0	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	0 0	0 0	0 0	0 0
Number of enterprises 6-10 employees	0 0	0 0	0 yes	0 yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.9 Greece

4.9.1 Delivery of data

During the data call Greece submitted the partial data set in due time. JRC also been informed that the National Data collection programme was not implemented since 2008, however data, collected through the other surveys been uploaded to the database. The data been updated during the meeting of STECF EWG 13-10 as the measurement of provided production data for hatcheries and nurseries has been not in line with the requirements of the data call.

Table 4.13: Summary of uploads for Greece

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-11	2013-09-04	3	0
Economic_2009	2013-06-11	2013-09-04	3	0
Economic_2010	2013-06-11	2013-09-04	3	0
Economic_2011	2013-06-11	2013-09-04	3	1
Production_2008	2013-06-11	2013-09-04	4	0
Production_2009	2013-06-11	2013-09-04	3	1
Production_2010	2013-06-11	2013-09-04	3	0
Production_2011	2013-06-11	2013-09-04	3	0

4.9.2 Coverage

All variables, defining the structure of the sector and production by specie as well as turnover been provided at the national total and segment level. The rest economic variables (costs, capital value and raw material) are missing. The full list of provided indicators at national total and segment level is presented in the Table 4.14.

4.9.3 Quality

No specific survey for DCF data collection was conducted in Greece for the period of 2008 to 2011, hence the vast majority of the economic variables are not reported.

Official Greek data was often criticised for under-reporting aquaculture production and value for seabream and seabass. A new licensing scheme for Greek finfish aquaculture which came into force in 2009 and the increasing concentration of the sector has significantly improved the quality data since 2010.

Divergences between Greek DCF, FAO and EUROSTAT data (Figure 4.7) should mainly be attributed to the fact that production quantities and value for hatcheries and nurseries reported under DCF are likely to reflect the total production of juveniles rather than sales. Other sources of divergences are:

- unreported data due to confidentiality issues,
- missing data,
- methods used for the approximation of missing data,
- aggregation issues,
- revision issues.

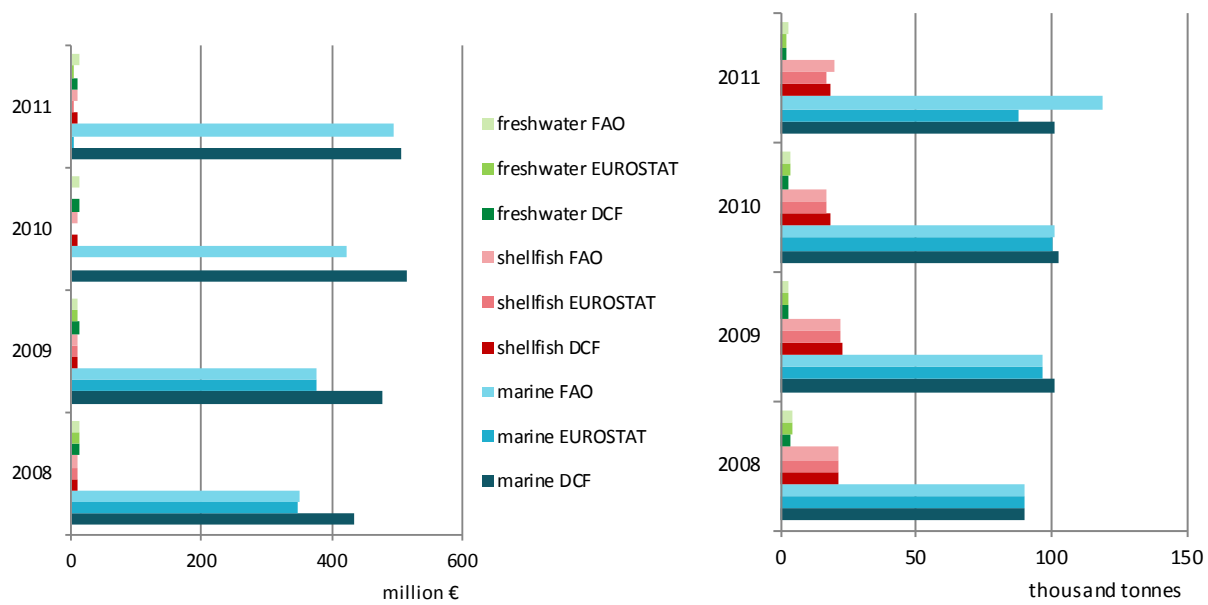


Figure 4.7 Comparison of Greek data by segment with other data sources: 2008-2011.

Table 4.14: Coverage of the data, provided by Greece by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	yes	yes	yes	yes	yes	yes	yes	yes
Subsidies	yes	no	yes	no	0	no	0	no
Other income	no	no	no	no	no	no	no	no
Operating Costs								
Wages and salaries	no	no	no	no	no	no	no	no
Imputed value of unpaid labour	no	no	no	no	no	no	no	no
Energy costs	no	no	no	no	no	no	no	no
Raw material costs: Feed costs	no	no	no	no	no	no	no	no
Raw material costs: Livestock costs	no	no	no	no	no	no	no	no
Repair and maintenance	no	no	no	no	no	no	no	no
Other operational costs	no	no	no	no	no	no	no	no
Capital Costs								
Depreciation of capital	no	no	no	no	no	no	no	no
Financial costs, net	no	no	no	no	no	no	no	no
Extraordinary Costs								
Extraordinary costs, net	no	no	no	no	no	no	no	no
Capital Value								
Total value of assets	no	no	no	no	no	no	no	no
Net Investments	no	no	no	no	no	no	no	no
Debt	no	no	no	no	no	no	no	no
Production								
Raw material volume: Feed	no	no	no	no	no	no	no	no
Raw material volume: Livestock	no	no	no	no	no	no	no	no
Total sales volume	yes	yes	yes	yes	yes	yes	yes	yes
Employment								
Total employees	yes	no	yes	no	yes	no	yes	no
Female employees	no	no	no	no	no	no	no	no
Male employees	no	no	no	no	no	no	no	no
FTE	no	no	no	no	no	no	no	no
Female FTE	no	no	no	no	no	no	no	no
Male FTE	no	no	no	no	no	no	no	no
Structure								
Number of enterprises <=5 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises >10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises 6-10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	yes
Turnover production	yes	yes	yes	yes	yes	yes	yes	yes

4.10 Ireland

4.10.1 Delivery of data

Ireland submitted all the requested datasets in beginning of the data call. Following JRC quality checks and further analysis, produced for the STECF EWG 13-10 part of the data sets been resubmitted before and during the meeting. The last resubmission date for the production data is 5th of July, while the economic template has been resubmitted on the 3rd of September 2013 (Table 4.15).

Table 4.15: Summary of uploads for Ireland

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-05-14	2013-09-03	7	4
Economic_2009	2013-05-14	2013-09-03	5	2
Economic_2010	2013-05-14	2013-09-03	4	1
Economic_2011	2013-05-14	2013-09-03	3	1
Production_2008	2013-05-14	2013-06-05	2	4
Production_2009	2013-05-14	2013-06-05	2	1
Production_2010	2013-05-14	2013-06-05	2	1
Production_2011	2013-05-14	2013-06-05	2	4

4.10.2 Coverage

The data covers all parameters required under DCF at national total and segment level. The full list of provided indicators at national total and segment level is presented in the Table 4.16.

4.10.3 Quality

Variables surveyed by census; production and employment data, are based or derived from an 80% return rate or more by entity number of the total population of aquaculture practitioners for the period 2008 to 2011. As the proportion of entities not returning tend to be small producers, the proportion of national tonnage and turnover required to be estimated is therefore smaller again. The 80 % return rate from producers has been consistent as has the method of estimating the production of non returnees; either using estimates from the local aquaculture officer or the most recent data of the company held and estimating current production with the general trend.

Operating costs variables have been more difficult to get consistent and reliable data for as these can only be obtained from the producers themselves or from their accountant. The majority of companies are small with just one to two full time staff, including the directors and therefore accountant hire is kept to a minimum. Such Companies are only obliged by law to submit abridged accounts to the Company Registration Office, from whose website and others, abridged accounts can be accessed. Variables concerned with assets, liabilities and depreciation that previously were not available for the first data call, are becoming so and are being fed into the templates. The data for these variables is improving. Currently the percentage return rate for the frame population (commercial entities) of the sample survey (financial variables) for 2011 varies from 17.86% (income variables) to 11.07% (operating costs variables, 'energy costs' and 'Repair & maintenance' costs). For 2008 the return rate for sample survey ranges from 10-11% while 2009 sample survey variables range from 11% to 15% of the frame population. The sample survey targeted 20% of the frame population for the four year period. Segment data as far as possible is homogenous and representative. Segment amalgamation has occurred among the smallest subsectors, due to the

tiny populations involved and the need to honour confidentiality. The diversity between these amalgamated subsectors prevents homogeneity within the new segment.

Other data sources used are the company registration office, the Central Statistics Office and BIM in house data acquired from regional staff or in the course of BIMs work program.

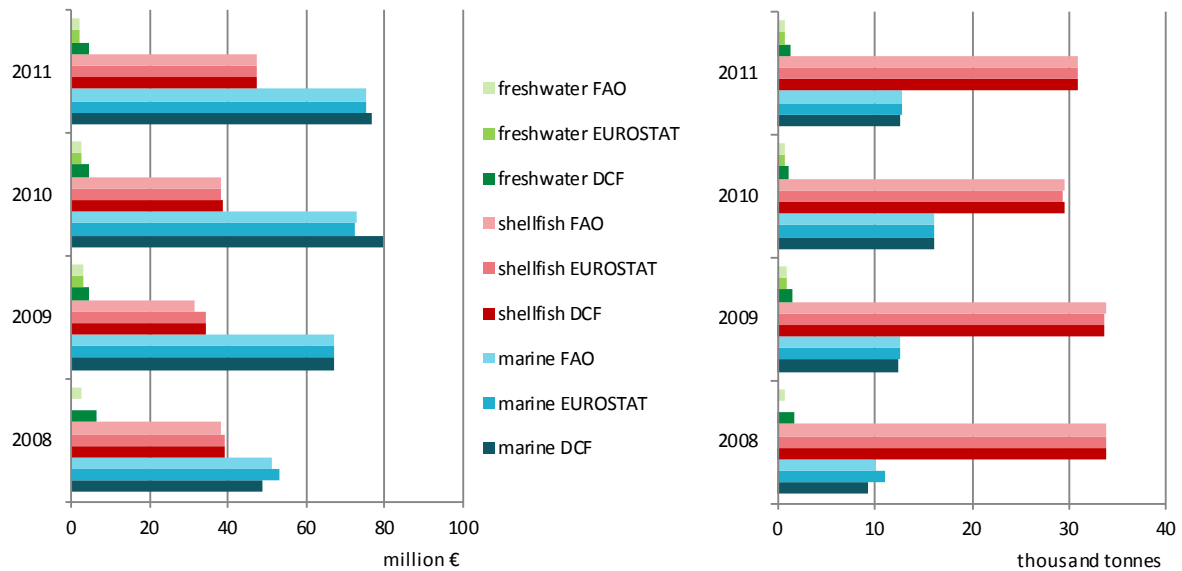


Figure 4.8 Comparison of Irish data by segment with other data sources: 2008-2011.

The production and employment data gathered for the DCF is also used to supply Eurostat and FAO data requirements. The data is therefore closely similar between all three sets of shared variables. The latter two bodies however receive this data earlier than the DCF. FAO Data is gathered 10 months ahead of DCF data, Eurostat data is gathered 7 months ahead. DCF data is from purely commercial entities. FAO production data is for consumption tonnage only.

Table 4.16: Coverage of the data, provided by Ireland by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	0 0	yes yes	0 0	yes yes
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	0 0	0 0	yes yes	0 0
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.11 Italy

4.11.1 Delivery of data

Following Italian NP, Italy submitted all requested information for 2008-2010 in due time of the data call, 2011 data set has been submitted in August. Following JRC data quality checks corrections been done before the STECF EWG 13-10 meeting. The last upload of the data has been done on 27 of August 2013 (Table 4.17).

Table 4.17: Summary of uploads for Italy

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-05-29	2013-08-27	3	0
Economic_2009	2013-05-29	2013-08-27	3	0
Economic_2010	2013-05-29	2013-08-27	3	0
Economic_2011	2013-08-06	2013-08-27	2	0
Production_2008	2013-05-29	2013-08-27	8	1
Production_2009	2013-05-29	2013-08-27	8	0
Production_2010	2013-05-29	2013-08-27	4	1
Production_2011	2013-08-06	2013-08-27	2	0

4.11.2 Coverage

Italian data covered all DCF variables and been provided on the national total and segment levels. The only variable missing is debt for 2008. The full list of provided indicators at national total and segment level is presented in the Table 4.18.

4.11.3 Quality

The methodology of the system "Probability Sample Survey", was used to draw the sample from the universe of aquaculture companies, for technical and production segment, according to a random selection.

- The segments are 9 according to the following criteria: technology / species
- Data samples in accordance with Appendix X must be expanded;

Structural data in Volume (tonnes) and Value (Euro) per segment (and here it must necessarily occur with the consistency of the data collected and sent to Eurostat according to Reg.762/2008).

From the analyses and verifications carried out on the data contained into the report, the consistency between Eurostat data and data DCF is not respected.

Related to estimation, the optimum sample number per stratum is defined according to Bethel's procedure (1989). Then, for each collected variable, to obtain the estimates of the totals per stratum, the Horvitz-Thompson formula is used, derived for the particular case of the simple random sampling without replacement. According to this particular estimator, the variance and the CV are calculated to evaluate the precision level.

As regards the imputation of non-responses, there is a process of localization of errors. The control procedure of the survey can be considered as interactive graphic micro-editing of the univariate

type. The term interaction refers to the fact that, in the procedure of localization of errors, there are not only automatic phases but also phases which require human intervention to investigate the situation and to evaluate the effective presence of the error (therefore the human intervention regards the localization phase and not that of imputation). The control is mainly of the univariate type because the variables are controlled individually and only in rare cases are suspected relationships existing among them controlled, using suitable synthesis indexes. During the various phases wide use is made of graphic tools to visibly evaluate situations marked as errors. Finally the word micro-editing is used because the data is gathered in suitable domains of study within which the sampling units can be considered very homogenous. For each of these sets of data, suitable control functions are first calculated, and then, for each of them, certain rules of incompatibility are verified. In the case of activation of conditions of error, that is in the case where the observed value does not belong to the region of acceptance, those control functions are then observed individually for all the sampling units forming the single domain. Thus the sample unit, or units, responsible for the activation of conditions of error is localized for the entire domain of study and then the imputation of the erroneous data follows.

The MS has not provided guidance on the methodology to ensure the quality of the expanded data. Furthermore, there was abnormal number of employed (males and especially females) compared to previous years as well as a very clear correspondence between occupied and conversion into Full Time Equivalent (FTE). For example, see for example the segments Seg.5.2 and Seg.7.2.

In Seg.5.2 (Other freshwater fish on growing) to all employees (males plus females) while 1,024 are 1,108 FTE.

In Seg.7.2 (Mussel Long line) are given to all employees and 322 FTE are 9.

Equally important for some items of operating costs there is consistency with the data reported in previous years, the main evidence for the cost of the staff/employee and their affection of other operating costs, but also the costs for energy and maintenance and repairs. Some faults which cause a carelessness data quality concern, moreover, some prices per kilogram reported. The price that most highlights anomaly is reported that is obtained by the clams (greater than 4 Euro per kg).

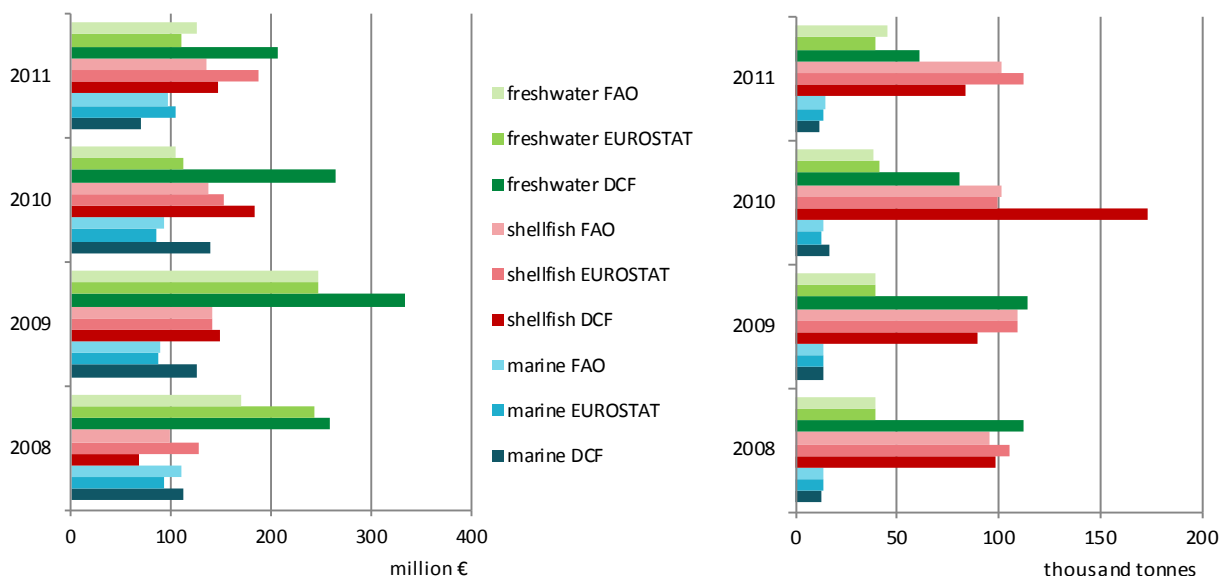


Figure 4.9 Comparison of Italian data by segment with other data sources: 2008-2011.

Table 4.18: Coverage of the data, provided by Italia by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	yes yes	yes yes	yes yes	yes yes
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	yes yes	yes yes	yes yes	yes yes
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	no no	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.12 Latvia

4.12.1 Delivery of data

All aquaculture production in Latvia is generated by freshwater segments. As the collection of freshwater aquaculture data is not compulsory under the DCF, Latvia provided no data.

4.12.2 Coverage

Not applicable.

4.12.3 Quality

Not applicable.

4.13 Lithuania

4.13.1 Delivery of data

All aquaculture production in Lithuania is generated by freshwater segments. As the collection of freshwater aquaculture data is not compulsory under the DCF, Lithuania did not foresee the collection of this type of data in the NP.

4.13.2 Coverage

Not applicable.

4.13.3 Quality

Not applicable.

4.14 Malta

4.14.1 Delivery of data

All datasets were uploaded in time before the deadline of the data call. There were no subsequent changes for production data, however economic templates been re-uploaded. The last upload has been observed on 6 of August 2013 (Table 4.19).

Table 4.19: Summary of uploads for Malta

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-12	2013-08-06	4	0
Economic_2009	2013-06-12	2013-08-06	4	0
Economic_2010	2013-06-12	2013-08-06	4	0
Economic_2011	2013-06-12	2013-08-06	4	0
Production_2008	2013-06-12	2013-06-13	4	0
Production_2009	2013-06-12	2013-06-13	4	0
Production_2010	2013-06-12	2013-06-13	4	0
Production_2011	2013-06-12	2013-06-13	2	0

4.14.2 Coverage

The data sets covered all the parameters required and has been provided at national totals and segment level. The only variable missing is live stock volume for 2008-2009 at national total level. Table 4.21 provides a full list of data submitted by variable and year.

4.14.3 Quality

Data for the data call was obtained exclusively from DCF data.

Differences in value and weight are evident between data reported by FAO, Eurostat and data collected through the DCF. Reasons may be mostly attributed to the fact that the segmentations used are different, as are raising procedures and calculations for estimations. Since calculations, data collection procedures, assumptions and raising procedures are not homogenous, different final values are reported. Data for the DCF is collected through survey questionnaires and reliability of data is questionable in this matter.

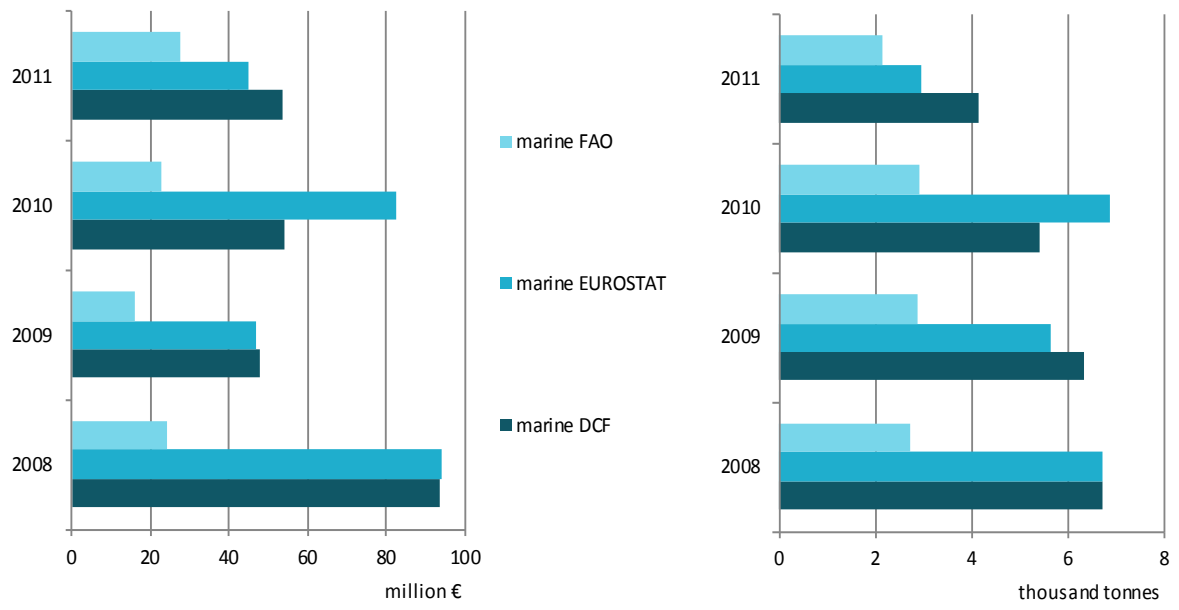


Figure 4.10 Comparison of Maltese data by segment with other data sources: 2008-2011.

Table 4.20: Coverage of the data, provided by Malta by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	yes	yes	yes	yes	yes	yes	yes	yes
Subsidies	yes	yes	yes	yes	0	0	0	0
Other income	0	0	yes	yes	yes	yes	yes	yes
Operating Costs								
Wages and salaries	yes	yes	yes	yes	yes	yes	yes	yes
Imputed value of unpaid labour	0	0	0	0	0	0	yes	yes
Energy costs	yes	yes	yes	yes	yes	yes	yes	yes
Raw material costs: Feed costs	yes	yes	yes	yes	yes	yes	yes	yes
Raw material costs: Livestock costs	yes	yes	yes	yes	yes	yes	yes	yes
Repair and maintenance	yes	yes	yes	yes	yes	yes	yes	yes
Other operational costs	yes	yes	yes	yes	yes	yes	yes	yes
Capital Costs								
Depreciation of capital	yes	yes	yes	yes	yes	yes	yes	yes
Financial costs, net	yes	yes	yes	yes	yes	yes	yes	yes
Extraordinary Costs								
Extraordinary costs, net	yes	yes	yes	yes	yes	yes	yes	yes
Capital Value								
Total value of assets	yes	yes	yes	yes	yes	yes	yes	yes
Net Investments	yes	yes	yes	yes	yes	yes	yes	yes
Debt	yes	yes	yes	yes	yes	yes	yes	yes
Production								
Raw material volume: Feed	yes	yes	yes	yes	yes	yes	yes	yes
Raw material volume: Livestock	no	yes	no	yes	yes	yes	yes	yes
Total sales volume	yes	yes	yes	yes	yes	yes	yes	yes
Employment								
Total employees	yes	yes	yes	yes	yes	yes	yes	yes
Female employees	yes	yes	yes	yes	yes	yes	yes	yes
Male employees	yes	yes	yes	yes	yes	yes	yes	yes
FTE	yes	yes	yes	yes	yes	yes	yes	yes
Female FTE	yes	yes	yes	yes	yes	yes	yes	yes
Male FTE	yes	yes	yes	yes	yes	yes	yes	yes
Structure								
Number of enterprises <=5 employees	0	0	0	0	0	0	0	0
Number of enterprises >10 employees	yes	yes	yes	yes	yes	yes	yes	yes
Number of enterprises 6-10 employees	yes	yes	yes	yes	0	0	0	0
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	yes
Turnover production	yes	yes	yes	yes	yes	yes	yes	yes

4.15 Netherlands

4.15.1 Delivery of data

The Netherlands submitted the data in due time. However, due to errors and following the JRC data checks, both templates been resubmitted before and during the STECF EWG 13-10 meeting. The last updates have been made on 6 of September 2013 (Table 4.21).

Table 4.21: Summary of uploads for the Netherlands

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-12	2013-09-06	18	1
Economic_2009	2013-06-12	2013-09-06	18	1
Economic_2010	2013-06-12	2013-09-06	12	1
Economic_2011	2013-06-12	2013-09-06	12	1
Production_2008	2013-06-12	2013-09-05	15	2
Production_2009	2013-06-12	2013-09-05	14	1
Production_2010	2013-06-12	2013-09-05	11	1
Production_2011	2013-06-12	2013-09-05	11	1

4.15.2 Coverage

The Netherlands has a two year data collection lag, i.e. data for 2011 had not been collected by the end of the STECF EWG 13-10 meeting. The 2011 data templates have been uploaded without any data.

For DCF data, the following parameters were not submitted:

- Number of enterprises by size and segment for 2008-2011
- Number of employees by gender;
- FTE total and by gender (not obligatory)

Imputed value of unpaid labour and volume of raw material have been either not provided or provided as zero values. See Table 4.22 for the overall coverage of the data, provided by the Netherlands at the national total and segment levels.

4.15.3 Quality

Dutch aquaculture data for 2011 have not been submitted under the DCF because these data are not going to be ready until the end of 2013. Thus, 2011 DCF data were not available for the data call. Therefore, the last year with data available is 2010. Also data on freshwater sales quantities have not been reported.

DCF data is collected through panels and are extrapolated to the entire sector. The EUROSTAT/Statistics Netherlands data are used to get an insight into total production levels of mussels (volume & value) and oysters (value).

The analysis below leads to the following two observations:

1. Shellfish production data are higher in 2008 and 2009 than FAO and EUROSTAT data, but lower in 2010

2. Data on freshwater fish are consistently lower under DCF than under FAO and EUROSTAT data collection

Regarding the first point, for 2008 and 2009, the DCF data include mussel production, shellfish production and additional revenues for the entrepreneurs, apart from mussels production. The latter category is not included in the FAO and EUROSTAT data. Discrepancy in 2010 data can be explained by the fact that DCF data does not contain information on the total production of oysters.

Regarding the second point, the analysis shows that 2008 and 2009 DCF data are considerably lower than EUROSTAT and FAO data. These latter two are based on the data collection by the Statistics Netherlands. A closer look at the Statistics Netherlands data shows that data is only collected for European eel. It is a known fact that some of the larger eel aquaculture companies do not cooperate in the panel that delivers DCF data. This would explain the observed difference.

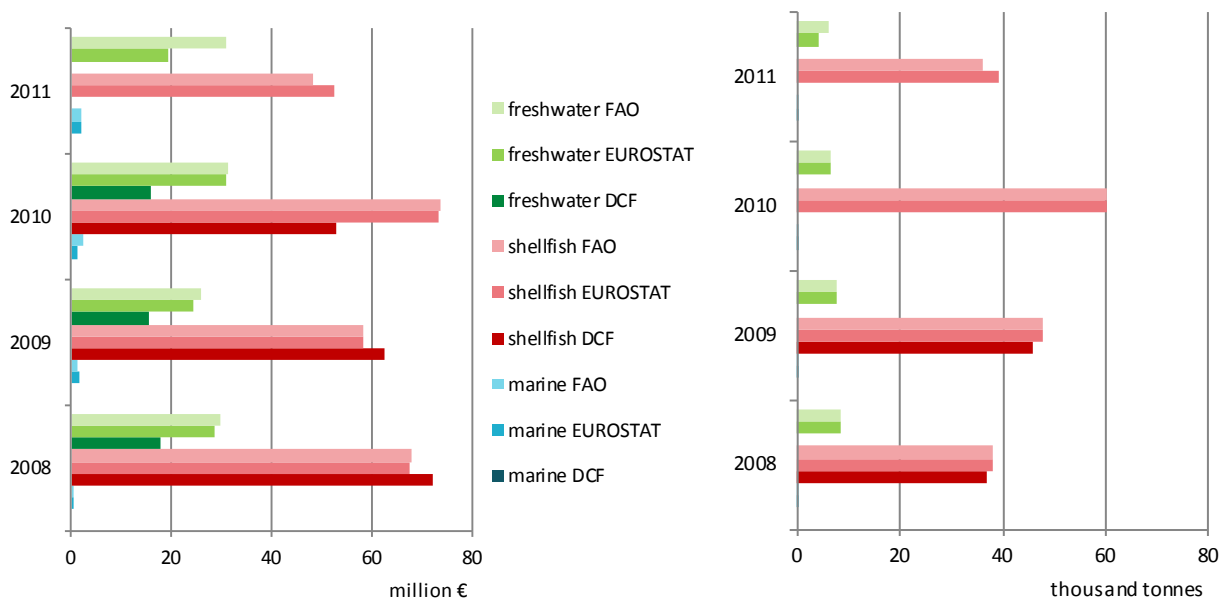


Figure 4.11 Comparison of Dutch data by segment with other data sources: 2008-2011.

Table 4.22: Coverage of the data, provided by the Netherlands by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	yes	yes	yes	yes	yes	yes	no	no
Subsidies	0	no	0	0	0	0	no	no
Other income	yes	yes	yes	yes	yes	yes	no	no
Operating Costs								
Wages and salaries	yes	yes	yes	yes	yes	yes	no	no
Imputed value of unpaid labour	no	no	no	0	0	0	no	no
Energy costs	yes	yes	yes	yes	yes	yes	no	no
Raw material costs: Feed costs	yes	yes	yes	yes	yes	yes	no	no
Raw material costs: Livestock costs	yes	yes	yes	yes	yes	yes	no	no
Repair and maintenance	yes	yes	yes	yes	yes	yes	no	no
Other operational costs	yes	yes	yes	yes	yes	yes	no	no
Capital Costs								
Depreciation of capital	yes	yes	yes	yes	yes	yes	no	no
Financial costs, net	yes	yes	yes	yes	yes	yes	no	no
Extraordinary Costs								
Extraordinary costs, net	yes	yes	yes	yes	yes	yes	no	no
Capital Value								
Total value of assets	yes	yes	yes	yes	yes	yes	no	no
Net Investments	yes	yes	yes	yes	yes	yes	no	no
Debt	yes	yes	yes	yes	yes	yes	no	no
Production								
Raw material volume: Feed	no	no	no	no	no	no	no	no
Raw material volume: Livestock	no	no	no	no	no	0	no	no
Total sales volume	yes	yes	yes	yes	yes	yes	no	no
Employment								
Total employees	no	yes	yes	yes	no	yes	no	no
Female employees	no	no	no	no	no	no	no	no
Male employees	no	no	no	no	no	no	no	no
FTE	no	no	no	no	no	no	no	no
Female FTE	no	no	no	no	no	no	no	no
Male FTE	no	no	no	no	no	no	no	no
Structure								
Number of enterprises <=5 employees	yes	no	yes	no	yes	no	no	no
Number of enterprises >10 employees	no	no	no	no	no	no	no	no
Number of enterprises 6-10 employees	no	no	no	no	no	no	no	no
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	no	no
Turnover production	yes	yes	yes	yes	yes	yes	no	no

4.16 Poland

4.16.1 Delivery of data

All required datasets had been submitted in due time before the deadline. However after JRC data quality checks the data sets have been resubmitted. The last updates have been made on 13 of August 2013 (Table 4.23).

Table 4.23: Summary of uploads for Poland

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-11	2013-08-13	3	0
Economic_2009	2013-06-11	2013-08-13	2	0
Economic_2010	2013-06-11	2013-08-13	2	0
Economic_2011	2013-06-11	2013-08-13	2	0
Production_2008	2013-06-11	2013-08-13	3	0
Production_2009	2013-06-11	2013-08-13	3	0
Production_2010	2013-06-11	2013-08-13	3	0
Production_2011	2013-06-11	2013-08-13	3	0

4.16.2 Coverage

Poland provided all economic indicators for 2009-2011 at the national totals and segment level. Turnover and sales covered all aquaculture production; while economic variables were collected and reported only for marine aquaculture.

4.16.3 Quality

Poland is not obliged to collect freshwater aquaculture economic data in accordance with the provisions of Chapter IV, Part A, point 2.2 Commission decision of 6 November 2008 (2008/949/EC).

DCF data includes only fish farms that breed and rear Atlantic salmon juveniles and cooperate with the Panel for Restocking appointed by the Minister of Agriculture and Rural Development (MARD) to restocking Polish marine areas and the maintenance and conservation of diadromous fishes in the inland waters. In 2011, there were four such farms. A questionnaire was used to collecting all data. In 2011 all completed questionnaires returned.

The economic performance was based on DCF data.

FAO and Eurostat data refers to total volume and value of aquaculture production for human consumption.

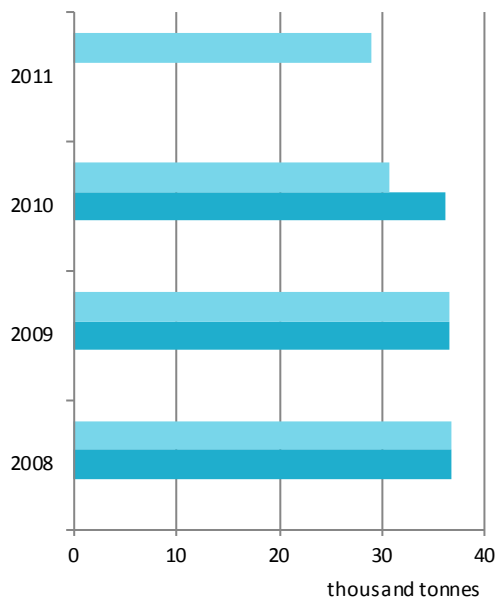
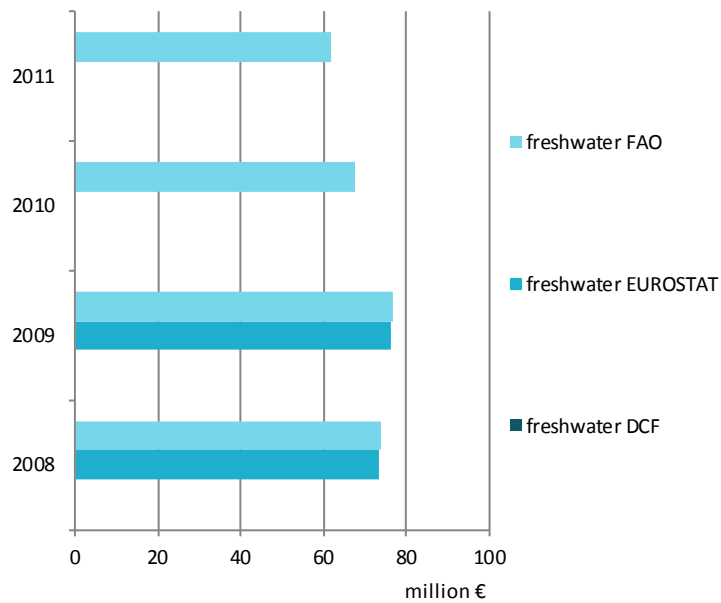


Figure 4.12 Comparison of Polish data by segment with other data sources: 2008-2011.

In the production template, Poland reported overall production by specie data, including fresh water species. Those productions on national total by specie almost match with FAO and EUROSTAT. The exemption is 2010-2011 data for EUROSTAT, which is missing. But as the Figure 4.12 is based on the Aqua_economic.xls template and the data provided is covering only salmon hatcheries and nurseries, producing stocking material for state salmon stocking program implementation, the DCF production is not comparable with FAO and EUROSTAT data which covers only production for human consumption.

Table 4.24: Coverage of the data, provided by Poland by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	no no	yes yes	yes yes	yes yes
Subsidies	no no	yes yes	yes yes	yes yes
Other income	no no	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	no no	yes yes	yes yes	yes yes
Imputed value of unpaid labour	no no	yes yes	yes yes	yes yes
Energy costs	no no	yes yes	yes yes	yes yes
Raw material costs: Feed costs	no no	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	no no	yes yes	yes yes	yes yes
Repair and maintenance	no no	yes yes	yes yes	yes yes
Other operational costs	no no	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	no no	yes yes	yes yes	yes yes
Financial costs, net	no no	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	no no	0 0	yes yes	0 0
Capital Value				
Total value of assets	no no	yes yes	yes yes	yes yes
Net Investments	no no	yes yes	yes yes	yes yes
Debt	no no	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	no no	yes yes	yes yes	yes yes
Raw material volume: Livestock	no no	yes yes	yes yes	yes yes
Total sales volume	no no	yes yes	yes yes	yes yes
Employment				
Total employees	no no	yes yes	yes yes	yes yes
Female employees	no no	yes yes	yes yes	yes yes
Male employees	no no	yes yes	yes yes	yes yes
FTE	no no	yes yes	yes yes	yes yes
Female FTE	no no	yes yes	yes yes	yes yes
Male FTE	no no	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	no no	yes yes	yes yes	yes yes
Number of enterprises >10 employees	no no	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	no no	0 0	0 0	0 0
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.17 Portugal

4.17.1 Delivery of data

All datasets been uploaded in due time. Following quality checking procedures by the JRC some data have been adjusted and datasets re-submitted before STECF EWG 13-10 meeting. The latest re-submission took place on the 14 of August 2013 (Table 4.26).

Table 4.25: Summary of uploads for Portugal

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-05-29	2013-08-14	4	0
Economic_2009	2013-05-29	2013-08-14	4	0
Economic_2010	2013-05-29	2013-08-14	4	0
Economic_2011	2013-05-29	2013-08-14	3	0
Production_2008	2013-05-29	2013-08-09	2	0
Production_2009	2013-05-29	2013-08-09	2	0
Production_2010	2013-05-29	2013-08-09	2	0
Production_2011	2013-05-29	2013-08-09	2	0

4.17.2 Coverage

The production data covered all years and was provided by segments. Economic data was provided for all parameters for 2009-2011. There were missing employment and economic parameters for 2008. All data was mostly provided by segments.

For DCF data, the following parameters were not submitted:

- Wages and salaries 2008
- Imputed value of unpaid labour 2008
- Repair and maintenance 2008
- Capital costs 2008
- Extraordinary costs 2008
- Capital value 2008
- Employment 2008 (except total employees)

4.17.3 Quality

Data is collected for all the aquaculture in a censitarian operation carried out annually and which collects data for both EUROSTAT and DCF. While production data is mandatory accordingly to national regulation, economic data is provided voluntarily. Answer rates vary accordingly to the type of unit, with on bottom units having an answer rate of about 47 %. Other units have an answer rate above 90 %.

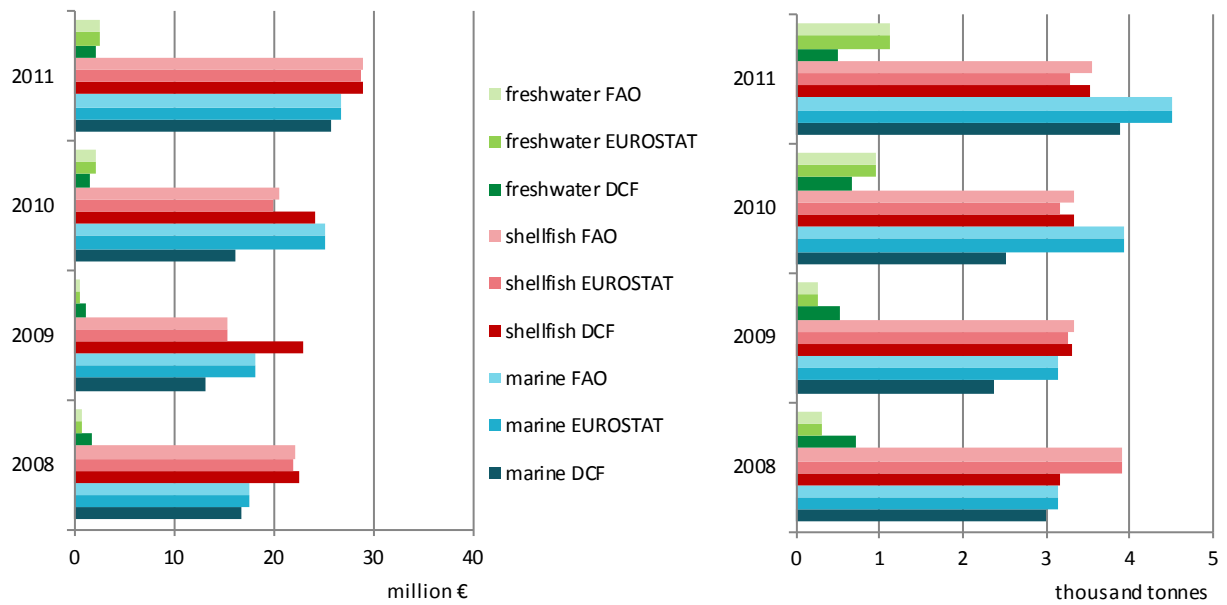


Figure 4.13 Comparison of Portuguese data by segment with other data sources: 2008-2011.

Portuguese data collection uses the same base data to provide information to Eurostat, FAO and DCF. Differences on data consist on the disaggregation of the data calls and the time of year where the data is provided. When data changes (new data or resubmission of data by some enterprises), new sets are compiled and resubmitted to Eurostat, accordingly to data revision policies. Regarding this, no differences between sources should appear.

Table 4.26: Coverage of the data, provided by Portugal by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	0 0	0 0	0 0	0 0
Other income	0 0	0 0	0 0	yes yes
Operating Costs				
Wages and salaries	no no	yes yes	yes yes	yes yes
Imputed value of unpaid labour	no no	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	no no	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	no no	yes yes	yes yes	yes yes
Financial costs, net	no no	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	no no	yes yes	yes yes	0 0
Capital Value				
Total value of assets	no no	yes yes	yes yes	yes yes
Net Investments	no no	yes yes	yes yes	yes yes
Debt	no no	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	no no	yes yes	yes yes	yes yes
Male employees	no no	yes yes	yes yes	yes yes
FTE	no no	yes yes	yes yes	yes yes
Female FTE	no no	yes yes	yes yes	yes yes
Male FTE	no no	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.18 Romania

4.18.1 Delivery of data

All datasets were uploaded in due time before the deadline of the data call. However after JRC data quality checks the data sets been re-uploaded (Table 4.28).

Table 4.27: Summary of uploads for Romania

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-10	2013-07-19	3	0
Economic_2009	2013-06-10	2013-07-19	3	0
Economic_2010	2013-06-10	2013-07-19	3	0
Economic_2011	2013-06-10	2013-07-19	3	0
Production_2008	2013-06-10	2013-07-19	3	0
Production_2009	2013-06-10	2013-07-19	3	0
Production_2010	2013-06-10	2013-07-19	3	0
Production_2011	2013-06-10	2013-07-19	3	0

4.18.2 Coverage

Data, submitted by Romania covered 2009-2010 years, all variables were submitted at the national and segments levels.

See Table 4.29 for the full list of data provided by variable by year.

4.18.3 Quality

Despite the existing Aquaculture Units Register it could be identified a less rate of responds at the questionnaire used for data collection. It is necessary that MS to undertake technical, maybe additional legal measures in order to improve data coverage and data quality of the whole process. No other data sources have been used for the data call part of Eurostat and FAO data.

There are few explanations for which divergences between DCF and FAO & Eurostat data still appears: first is caused by the incomplete/unsatisfactory coverage rate pending on low level of responses from the producers/providers of statistics figures, as mentioned above; second: the differences on the formats requested by those end users due to the lack of harmonisation on formats of data calls. As example should be mentioned that in FAO format they are including differed information on raw material origin, juveniles production-as production, Eurostat started to pay more attention on that in the last two years – still existing a different definition for nurseries and hatcheries production for sale – the national understanding is the following: in different status of “young fishes growth” (first summer material, second summer material, or third one) is still as final product, Eurostat is looking only for juveniles and not for this kind of production) and FAO is doing the same, as in volume and value. A harmonization of indicators used in DCF- future DC MAP, in the EU regulations should be done and similar harmonization should follow with EC, as whole, and FAO.

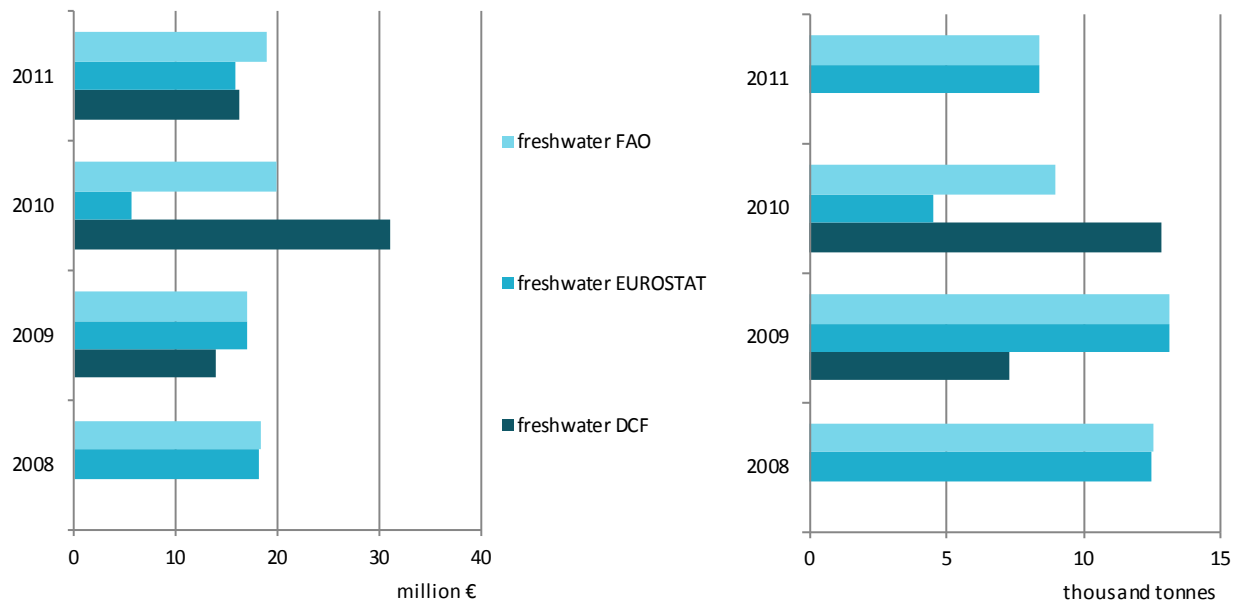


Figure 4.14 Comparison of Romanian data by segment with other data sources: 2008-2011.

Table 4.28: Coverage of the data, provided by Romania by variable

	2008		2009		2010		2011	
	Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg		Nat. tot. / by seg	
Income								
Turnover	no	no	yes	yes	yes	yes	yes	yes
Subsidies	no	no	0	no	0	0	yes	yes
Other income	no	no	yes	yes	0	0	yes	yes
Operating Costs								
Wages and salaries	no	no	yes	yes	yes	yes	yes	yes
Imputed value of unpaid labour	no	no	yes	yes	yes	yes	yes	yes
Energy costs	no	no	yes	yes	yes	yes	yes	yes
Raw material costs: Feed costs	no	no	yes	yes	yes	yes	yes	yes
Raw material costs: Livestock costs	no	no	yes	yes	yes	yes	yes	yes
Repair and maintenance	no	no	yes	yes	yes	yes	yes	yes
Other operational costs	no	no	yes	yes	yes	yes	yes	yes
Capital Costs								
Depreciation of capital	no	no	yes	yes	yes	yes	yes	yes
Financial costs, net	no	no	yes	yes	yes	yes	yes	yes
Extraordinary Costs								
Extraordinary costs, net	no	no	yes	yes	yes	yes	yes	yes
Capital Value								
Total value of assets	no	no	yes	yes	yes	yes	yes	yes
Net Investments	no	no	yes	yes	yes	yes	yes	yes
Debt	no	no	yes	yes	yes	yes	yes	yes
Production								
Raw material volume: Feed	no	no	yes	yes	yes	yes	yes	yes
Raw material volume: Livestock	no	no	yes	yes	yes	yes	yes	yes
Total sales volume	no	no	yes	yes	yes	yes	yes	no
Employment								
Total employees	no	no	yes	yes	yes	yes	yes	no
Female employees	no	no	yes	yes	yes	yes	yes	no
Male employees	no	no	yes	yes	yes	yes	yes	no
FTE	no	no	yes	yes	yes	yes	yes	no
Female FTE	no	no	yes	yes	yes	yes	yes	no
Male FTE	no	no	yes	yes	yes	yes	yes	no
Structure								
Number of enterprises <=5 employees	no	no	yes	yes	yes	yes	yes	no
Number of enterprises >10 employees	no	no	yes	yes	yes	yes	yes	no
Number of enterprises 6-10 employees	no	no	yes	yes	yes	yes	yes	no
Production by species								
Sales production	no	no	yes	yes	yes	yes	yes	yes
Turnover production	no	no	yes	yes	yes	yes	yes	yes

4.19 Slovenia

4.19.1 Delivery of data

All datasets were submitted before the deadline, however part of the data was resubmitted after data checks performed by the JRC. All data been checked and ready by the STECF EWG 13-10 meeting (Table 4.30).

Table 4.29: Summary of uploads for Slovenia

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-05-27	2013-06-05	3	1
Economic_2009	2013-05-27	2013-06-05	3	1
Economic_2010	2013-05-27	2013-06-05	3	0
Economic_2011	2013-05-27	2013-06-05	2	1
Production_2008	2013-05-27	2013-07-19	3	1
Production_2009	2013-05-27	2013-07-19	3	1
Production_2010	2013-05-27	2013-07-19	3	1
Production_2011	2013-05-27	2013-07-19	2	1

4.19.2 Coverage

The data sets provided covered all parameters and were submitted by segment.

Data covered only marine fish species production of Slovenia.

4.19.3 Quality

According to “The central register of aquaculture and commercial ponds” held in MAFF, in 2011, there were 10 operators in Slovenia dealing with shellfish farming and one subject that was engaged in breeding of fish. The data for the operators mentioned were collected from multiple sources (AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services), questionnaire, MAFF (The Ministry of Agriculture, Forestry and Food of the Republic of Slovenia)), allowing for cross checking. The accounting data, which are collected by the AJPES public agency, are already checked and verified. The data were collected for all 11 subjects.

In July 2012 the questionnaires for 2011 were sent to all 11 operators and all of them also returned the questionnaire. Therefore, there is full coverage.

Economic data on the aquaculture sector have been collected from accounting records – AJPES and through questionnaires. The national program for collection of economic data for the aquaculture sector combines information from three main resources:

1. Questionnaire information returned from the aquaculture sector on a voluntary basis,
2. Data base: ‘The central register of aquaculture and commercial ponds’ from MAFF,
3. The annual accounts of business enterprises.

The data collected from all sources have been combined in such a way that a complete set of accounting items is compared for each business enterprise.

In cases where a questionnaire, as the only source, was used, the response rate was 100 %. In cases where the data from annual accounts of business enterprises was used the response rate was also 100 %. Economic reports for all investigated companies been available.

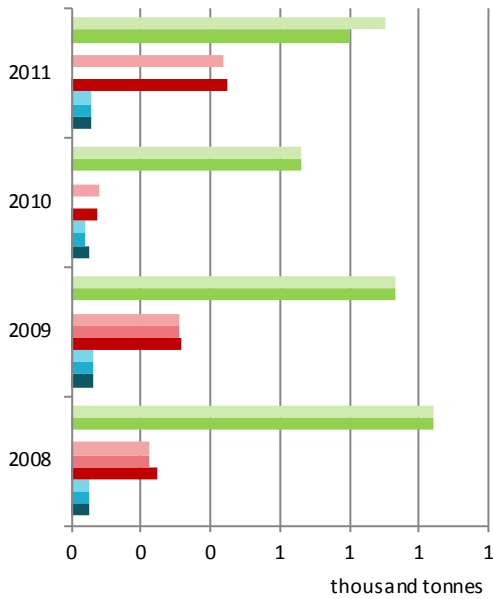
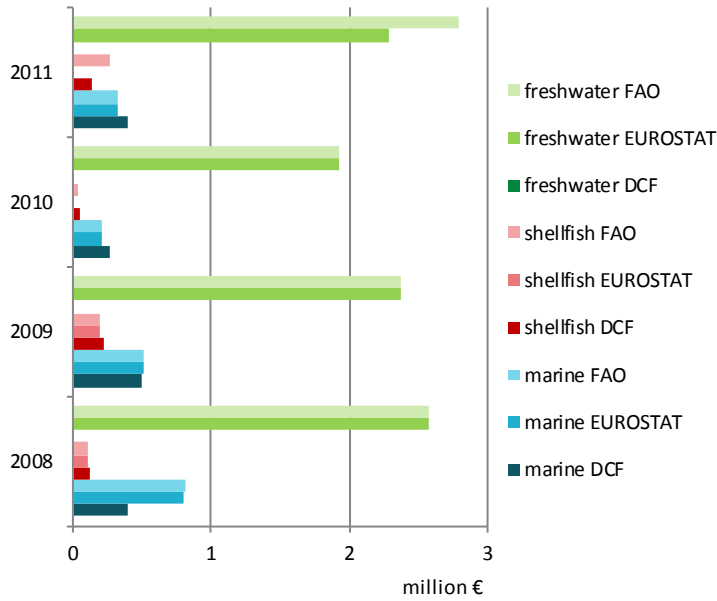


Figure 4.15 Comparison of Slovenian data by segment with other data sources: 2008-2011.

Due to confidentiality issues (low number of marine fish farms), only one segment have been analysed in the STECF EWG 13-10 report (Mussel rafts segment (segment 7.1)). In case of Slovenian data, there are differences between Eurostat and DCF data. The difference appears because Eurostat data also contains data from freshwater aquaculture and also because of better coverage of DCF data.

Table 4.30: Coverage of the data, provided by Slovenia by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	0 0	0 0	yes yes	yes yes
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	0 0	0 0	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	yes yes	yes yes	yes yes	yes yes
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	0 0	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	0 0	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.20 Spain

4.20.1 Delivery of data

All requested datasets under the DCF were submitted in due time before the deadline of the data call. No resubmission occurred after the JRC data quality checks (Table 4.32).

Table 4.31: Summary of uploads for Spain

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-11	2013-06-17	2	0
Economic_2009	2013-06-11	2013-06-17	2	0
Economic_2010	2013-06-11	2013-06-17	2	1
Economic_2011	2013-06-11	2013-06-17	2	0
Production_2008	2013-06-11	2013-06-11	2	0
Production_2009	2013-06-11	2013-06-11	2	0
Production_2010	2013-06-11	2013-06-11	2	0
Production_2011	2013-06-11	2013-06-11	1	1

4.20.2 Coverage

Data was submitted for all economic parameters for years 2008-2011. Production value was provided by species for 2008-2011 but sales volume information was missing for 2008-2010 (Table 4.33). All data have been provided by segments.

4.20.3 Quality

The data provided for the data call are the official domestic figures provided by the Spanish authority and covered under the program of the National Economic Survey of Aquaculture. The reliability of these data is quite high since they directly come from the productive sector, and any inconsistency with reality has to be searched for in the quality of the information provided. Anyway, even any possible reserve in the data provided can be assumed, the trends observed match with the conclusions that can be risen from other sources like wholesale and retail data, FAO or EUROSTAT.

As it can be seen in the Figure 4.16, the differences across sources only occur in the value figures, and production data seem to be the same in all sources. These differences can only be understood if the units used to compute the total value differ. Additional information on the way this is computed by every agency will help to assess the problem.

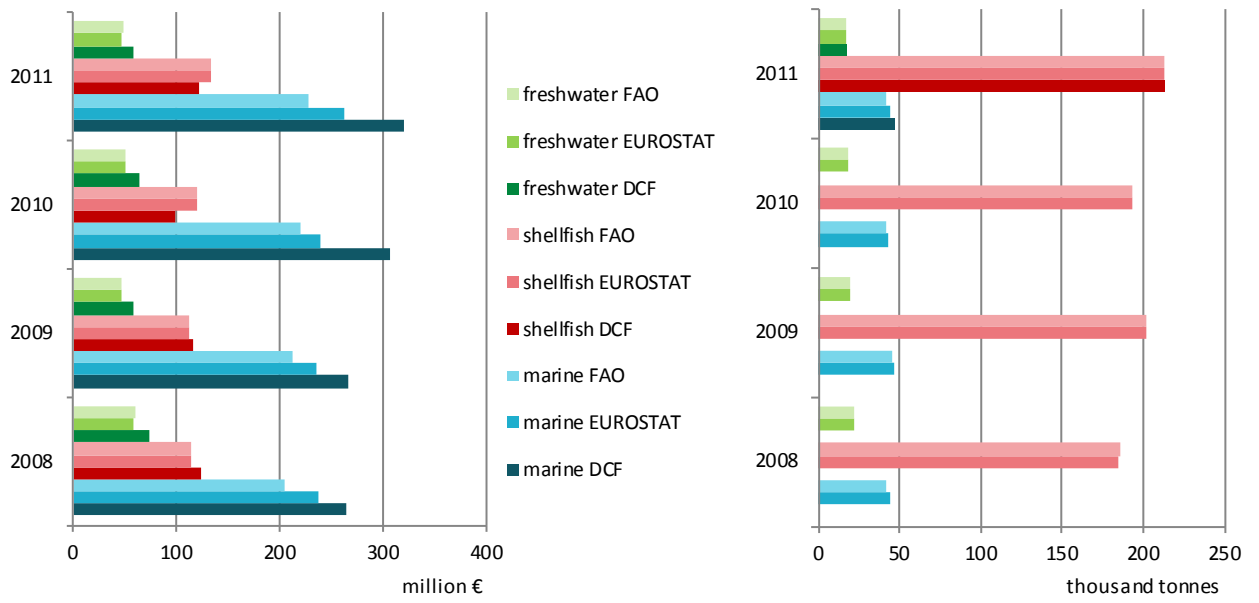


Figure 4.16 Comparison of Spanish data by segment with other data sources: 2008-2011.

Table 4.32: Coverage of the data, provided by Spain by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	yes yes	yes yes	yes yes	yes yes
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	yes yes	yes yes	yes yes	yes yes
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	no no	no no	no no	yes yes
Total sales volume	no no	no no	no no	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes yes	yes yes	yes yes	yes yes
Male FTE	yes yes	yes yes	yes yes	yes yes
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	no yes	no no	no no	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.21 Sweden

4.21.1 Delivery of data

All the datasets were uploaded to the system before the deadline. Following quality checks by JRC and the Swedish expert, some datasets have been changed and resubmitted. The last upload was on 12 of July 2013 Table 4.34.

Table 4.33: Summary of uploads for Sweden

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-06-13	2013-07-12	4	3
Economic_2009	2013-06-13	2013-07-12	4	1
Economic_2010	2013-06-13	2013-07-12	4	3
Economic_2011	2013-06-13	2013-07-12	3	1
Production_2008	2013-06-13	2013-07-12	3	1
Production_2009	2013-06-13	2013-07-12	3	3
Production_2010	2013-06-13	2013-07-12	3	1
Production_2011	2013-06-13	2013-07-12	3	3

4.21.2 Coverage

All required parameters were provided on national and segment level, except FTE by gender, which is optional for aquaculture data collection. Only some production data was not provided by segments due to confidentiality issues.

Sweden provided all parameters required by DCF for all years (2008-2011). The data set also covered aquaculture activities in fresh water (Table 4.35).

4.21.3 Quality

Since 2011, the Swedish Board of Agriculture is responsible for compiling and reporting statistics on the aquaculture sector for the reported period together with the Swedish Agency for Marine Water Management. The Swedish Board of Agriculture in cooperation with Statistics Sweden conducted two questionnaires and a tax declaration survey for each year. Data is collected from both income tax declarations, administrative records and two questionnaires (Q1 and Q2), sent to all aquaculture farmers (Q1) and all aquaculture firms that have aquaculture as their main activity (Q2). In order to identify the segments, where companies were using more than one farming technique or growing more than one species, all production, incomes and costs were transferred to the main technique and main species based on turnover.

The questionnaire (Q1) is sent out to all aquaculture farm units and farm units are clustered into enterprises. For each enterprise, the value of sales from Q1 is compared to income as reported in the income tax declarations. Enterprises that have aquaculture as their main activity (more than 50 % income from tax declarations/sales value from Q1) are considered to have their primary activity in aquaculture. These enterprises represents the population for questionnaire Q2 (the cost allocation key survey), derived from income tax declarations combined with Q2, for all aquaculture activity in Sweden. By comparing the value of sales from Q1, which covers all aquaculture activity in Sweden, with income in tax declarations for the enterprises with aquaculture as their primary activity we obtain a figure, used to scale-up relevant variables. Using this method, variables can be

assumed representative of all aquaculture activity in Sweden and comprise the same allocation between variables as for enterprises with aquaculture as their primary activity.

The primary objective of the second questionnaire (Q2) is to create a cost allocation key for costs that are not specified in income tax declarations. For the years 2008-2010, the sample for the second questionnaire (Q2) was a non-probability sample based on a priori information that came from questionnaire Q1 and income tax declarations, as described above. As a result, it could not be planned before the income tax declarations and the results of the first questionnaire (Q1, covering every farming unit) were compiled. Based on the results of the census data, Statistics Sweden selected a representative number of enterprises from each segment (clustered sample) for the second questionnaire (Q2). In order to ensure representativeness in terms of corporate size, structure and farming technique, Statistics Sweden decided on the appropriate sampling method and sample size for Q2. The survey (Q2) was undertaken in 2008 and the cost allocation key was reused for 2009 and 2010. The population represents all active aquaculture enterprises in 2008 that have aquaculture as their primary activity and the sample for the questionnaire (Q2) represents 46 of these enterprises. The survey had a response rate of 65 per cent.

To ensure high quality of data and to make it more practical for the respondents Q2 will be undertaken on a yearly basis from 2011 and merged with Q1 (from 2012). The improvements in the methodology imply that the Q2 survey undertaken in 2011 is a Census directed to all aquaculture firms, with aquaculture as their main activity, which also explains the high variation in cost allocations compared to prior years. Even though this change in the methodology produces a different cost structure and perhaps also difficulties incomparability, a change in the methodology is necessary to ensure high quality of the 2011 and future data collection.

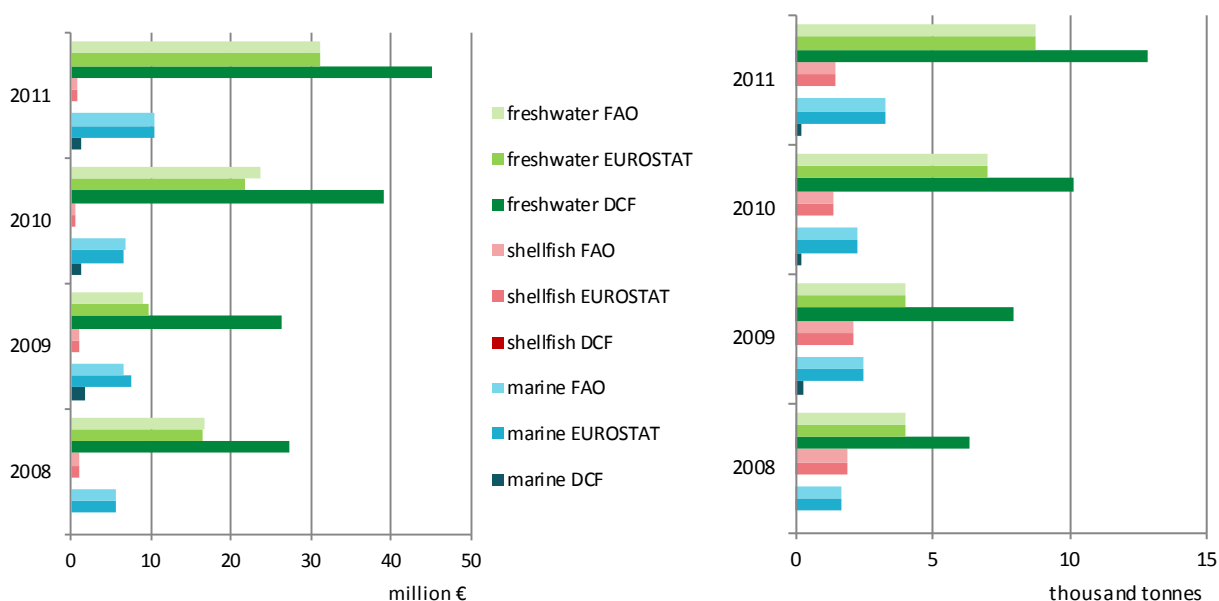


Figure 4.17 Comparison of Swedish data by segment with other data sources: 2008-2011.

Since data on aquaculture production is reported from the Swedish official statistics to Eurostat, there should be minor deviations in the production volumes as reported by Eurostat. Furthermore, since FAO, EUROSTAT data and DCF report data on production based on first sales the definition should not be an issue. However, as shown in the Figure 4.17, Swedish DCF is not identical to Eurostat and FAO data. These disparities are likely a result of differences in the reference

population. Disparities may also arise due to updates in the data mainly due to changes in the number of active enterprises.

Table 4.34: Coverage of the data, provided by Sweden by variable

	2008	2009	2010	2011
	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg	Nat. tot. / by seg
Income				
Turnover	yes yes	yes yes	yes yes	yes yes
Subsidies	0 0	yes yes	yes yes	yes yes
Other income	yes yes	yes yes	yes yes	yes yes
Operating Costs				
Wages and salaries	yes yes	yes yes	yes yes	yes yes
Imputed value of unpaid labour	yes yes	yes yes	yes yes	yes yes
Energy costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Feed costs	yes yes	yes yes	yes yes	yes yes
Raw material costs: Livestock costs	yes yes	yes yes	yes yes	yes yes
Repair and maintenance	yes yes	yes yes	yes yes	yes yes
Other operational costs	yes yes	yes yes	yes yes	yes yes
Capital Costs				
Depreciation of capital	yes yes	yes yes	yes yes	yes yes
Financial costs, net	yes yes	yes yes	yes yes	yes yes
Extraordinary Costs				
Extraordinary costs, net	yes yes	yes yes	yes yes	yes yes
Capital Value				
Total value of assets	yes yes	yes yes	yes yes	yes yes
Net Investments	yes yes	yes yes	yes yes	yes yes
Debt	yes yes	yes yes	yes yes	yes yes
Production				
Raw material volume: Feed	yes yes	yes yes	yes yes	yes yes
Raw material volume: Livestock	yes yes	yes yes	yes yes	yes yes
Total sales volume	yes yes	yes yes	yes yes	yes yes
Employment				
Total employees	yes yes	yes yes	yes yes	yes yes
Female employees	yes yes	yes yes	yes yes	yes yes
Male employees	yes yes	yes yes	yes yes	yes yes
FTE	yes yes	yes yes	yes yes	yes yes
Female FTE	yes no	yes no	yes no	yes no
Male FTE	yes no	yes no	yes no	yes no
Structure				
Number of enterprises <=5 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises >10 employees	yes yes	yes yes	yes yes	yes yes
Number of enterprises 6-10 employees	yes yes	yes yes	yes yes	yes yes
Production by species				
Sales production	yes yes	yes yes	yes yes	yes yes
Turnover production	yes yes	yes yes	yes yes	yes yes

4.22 United Kingdom

4.22.1 Delivery of data

UK first upload started to uploaded some data on 8 of July, which is 3 weeks after the meeting. The templates for 2008-2010 were empty, so the data for 2008-2010 been imported from the data set of 2012 data call. Due to some problems with quality, the data sets been re-uploaded several times. Last upload took place on 18 of October 2013 (more than 1 month after the STECF EWG 13-10 meeting), however later data had to be changed manually in the data base (Table 4.36).

Table 4.35: Summary of uploads for United Kingdom

template name	first_date	last_date	n. success	n. error
Economic_2008	2013-07-08	2013-10-18	6	1
Economic_2009	2013-07-08	2013-10-18	6	8
Economic_2010	2013-07-08	2013-10-18	6	1
Economic_2011	2013-08-30	2013-10-17	3	8
Production_2008	2013-07-08	2013-10-18	5	8
Production_2009	2013-07-08	2013-10-18	5	1
Production_2010	2013-07-08	2013-10-18	5	8
Production_2011	2013-07-08	2013-07-08	2	1

4.22.2 Coverage

During 2013 data call for aquaculture data UK provided data for 2011, the other part of the data set been imported from 2012 data call data base. Compared to 2012 data call the coverage of UK data (reference year 2011) improved, however most of indicators were still missing on segment level (see Table 4.37).

For DCF data, the following parameters were missing:

- Turnover 2008-2010 segment level;
- Subsidies and other income 2008-2011 segment level;
- Wages and salaries and other operating costs 2008-2010 segment level;
- Imputed value of unpaid labour 2009-2010, no data on the segment level;
- Energy costs, raw material costs and repair and maintenance 2008-2010;
- Depreciation, financial costs net, Extraordinary costs net, net investments, debt, raw material volume 2008-2010, 2011 data provided only on national total level;
- Total value of assets no data on segment level;
- Total sales volume 2008-2010;
- Employment - no data on segment level;
- Number of enterprises by size category – no data on segment level

4.22.3 Quality

The obvious reasons for DCF, FAO and Eurostat data not to agree is that they are collected at different times of the year in formats that are similar but all showing peculiarities of detail.

Data for calendar year X is requested by FAO by the end of August in year X+1, but by Eurostat by the end of December X+1. DCF data is requested for year X in May of year X+2. Within the UK, data

is collected by different methods in the four national regions. Data for England and Wales is collected during inspection visits that are not completed until near the year's end; hence totals are not available before December. Data for Scotland is collected by postal surveys and is published as a report in September. Data for Northern Ireland is also collected by postal surveys and is available earlier in the year.

FAO may therefore have picked up Northern Ireland data and put it in tables as representing the UK. This will not be revised until the next data collection round.

Eurostat returns are based on summed production totals, so should represent the most accurate estimates of production quantities. Coverage is virtually 100 % and there is no evidence of non-compliance or bias by respondents. Trade associations and other users of the data seem of the opinion that collecting and publishing this data is a general good that outweighs the burden on industry. Within the UK, more use is made of regional subtotals than of the member state totals.

DCF data has been compiled from a combination of the Eurostat data and UK Office for National Statistics Annual Business Survey (ABS) data. The ABS uses an approximately 4 % sample of companies registered for VAT, which is likely to exclude many single-person and part-time enterprises. Nevertheless, it will follow standard accounting practices. However, this does not provide all the DCF indicators and in 2013 a direct survey of aquaculture businesses was attempted. For reasons not known at the time of STECF experts meeting, this approach led to raised estimates that were well out of line with existing turnover estimates, and it was unfortunate this data was uploaded to JRC. The data were subsequently corrected and re-uploaded.

Some costs by segment were imputed by applying to turnover the proportions reported in a JRC study that used data from previous reports, consequently there was little sense to show the cost structure by segment.

It may also be relevant that production figures are collected for calendar years but financial data for companies may be for any twelve month period - companies have their individual reporting dates. It has also become increasingly apparent that the economic structure of the industry is far more opaque than the physical structure, and some care needs to be applied in equating farm production with accounting variables in multi-functional enterprises or legal holding companies.

It is also apparent that having many agencies involved in disparate data collections leads to inefficiencies, inconsistencies and inaccuracy. If anything, this must increase the burden on the industry and reduce the value of the outputs. This is being addressed within the UK by efforts to coordinate methods and timing across the regions, and use definitions and segmentations consistent with all needs. Consistency between the data receiving bodies and lack of duplication of effort are also desirable and we understand that this is to be discussed between FAO and Eurostat soon.

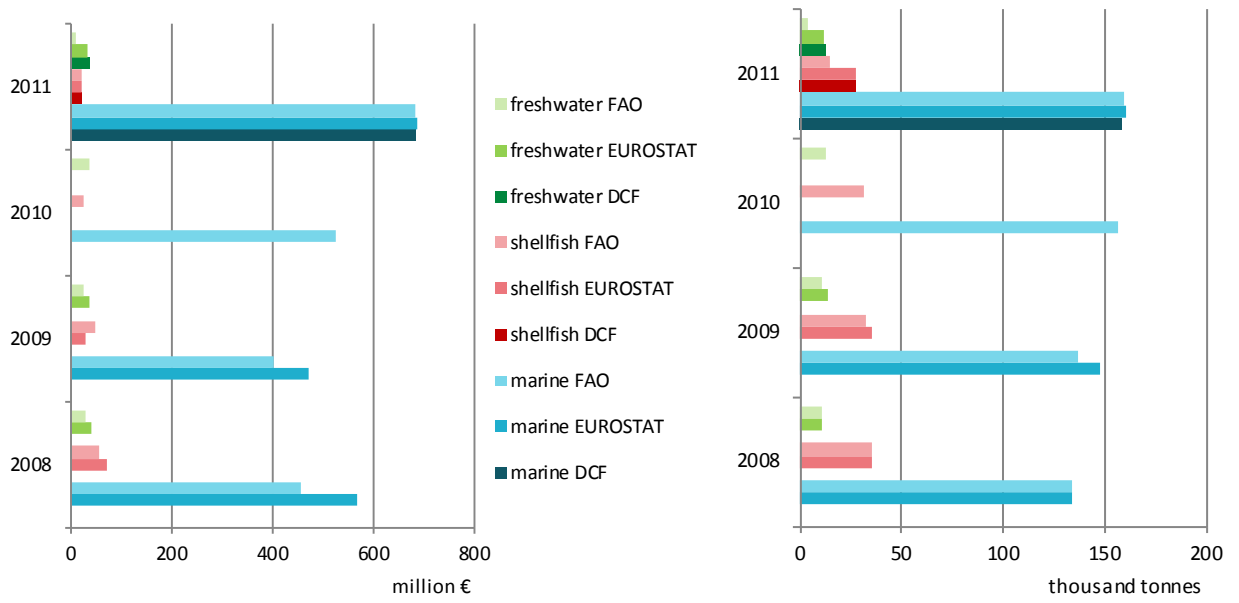


Figure 4.18 Comparison of United Kingdom's data by segment with other data sources: 2008-2011.

Table 4.36: Coverage of the data, provided by United Kingdom by variable

	2008		2009		2010		2011	
	Nat. tot.	/ by seg	Nat. tot.	/ by seg	Nat. tot.	/ by seg	Nat. tot.	/ by seg
Income								
Turnover	yes	no	yes	no	yes	no	yes	yes
Subsidies	0	no	0	no	0	no	yes	no
Other income	0	no	0	no	0	no	0	no
Operating Costs								
Wages and salaries	yes	no	yes	no	yes	no	yes	yes
Imputed value of unpaid labour	0	no	no	no	no	no	yes	no
Energy costs	no	no	no	no	no	no	yes	yes
Raw material costs: Feed costs	no	no	no	no	no	no	yes	yes
Raw material costs: Livestock costs	no	no	no	no	no	no	yes	yes
Repair and maintenance	no	no	no	no	no	no	yes	yes
Other operational costs	yes	no	yes	no	yes	no	yes	yes
Capital Costs								
Depreciation of capital	no	no	no	no	no	no	yes	no
Financial costs, net	no	no	no	no	no	no	yes	no
Extraordinary Costs								
Extraordinary costs, net	no	no	no	no	no	no	yes	no
Capital Value								
Total value of assets	yes	no	yes	no	yes	no	yes	no
Net Investments	no	no	no	no	no	no	yes	no
Debt	no	no	no	no	no	no	yes	no
Production								
Raw material volume: Feed	no	no	no	no	no	no	yes	no
Raw material volume: Livestock	no	no	no	no	no	no	yes	no
Total sales volume	no	no	no	no	no	no	yes	yes
Employment								
Total employees	yes	no	yes	no	yes	no	yes	yes
Female employees	0	no	0	no	0	no	yes	no
Male employees	yes	no	yes	no	yes	no	yes	no
FTE	yes	no	yes	no	yes	no	yes	no
Female FTE	0	no	0	no	0	no	no	no
Male FTE	yes	no	yes	no	yes	no	no	no
Structure								
Number of enterprises <=5 employees	yes	no	yes	no	yes	no	yes	no
Number of enterprises >10 employees	yes	no	yes	no	yes	no	yes	no
Number of enterprises 6-10 employees	yes	no	yes	no	yes	no	yes	no
Production by species								
Sales production	yes	yes	yes	yes	yes	yes	yes	yes
Turnover production	yes	yes	yes	yes	yes	yes	yes	yes

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Abstract

This Data Collection Framework (DCF) coverage report was prepared by the Joint Research Centre (JRC) as part of an Administrative Arrangement with DG MARE. The purpose of the document is to provide an overview of the timeliness and completeness of the Member States data submissions to JRC in response to the call for economic data on aquaculture sector concerning 2008-2011 issued by DG MARE under the DCF (Council Regulation No 199/2008). Additionally, the report provides some indication of data quality, summarising major quality issues detected by JRC and the Expert Working Group convened under the Scientific, Technical and Economic Committee for Fisheries (STECF).

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