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Economic impact of eel trade ban – general trends.

Study in support to the STECF

Arina Motova

This study was conducted in support to the STECF for its 47th plenary meeting held from 10 to 14 November 2014 in Brussels

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1. BACKGROUND AND INTRODUCTION

The European eel (*Anguilla Anguilla*L.) was included in Appendix II to the Convention on International Trade in Endangered Species (CITES) and Annex B to Council Regulation (EC) No 338/97 in March 2009. This was largely due to the threat posed to the conservation of the species by the export of glass eels from the EU to Asia for farming purposes. The main commodities which were exported before the ban were glass eels. In December 2010, the EU "Scientific Review Group" considered that, due to the critical conservation status of the stock, no export from or import into the EU of eels and derived products should be authorised. This "trade ban" has been in place for nearly four years now and the Commission seeks to get an assessment of the consequences of this measure on the economics and trade in European eels in the EU.

Consequently, DG ENV requested DG MARE to request the Scientific, Technical and Economic Committee for Fisheries (STECF) to provide for an analysis.

Terms of Reference given to the STECF for its November 2014 plenary meeting were:

Based on data available from ICES report on the implementation of the Eel Management Plans, the 2014 DCF Aquaculture economics data call, most recent Eurostat aquaculture and trade data as well as other data sources.-STECF is requested to provide for an analysis of general patterns with regards to the economic impact of the European eel export and import ban in place in the EU since December 2010. STECF is in particular requested to compare the situation before and after the trade ban decided in December 2010, in terms of volume and value of eels traded, farmed and sold in the EU. (STECF is not asked to explain the differences because a) data for the 'after trade ban period" are only available for 2 years, and b) for further analysis to explain differences more detailed information would be needed.)

In support to the STECF the JRC conducted the present study.

This study was done by:

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2. EELS FISHING IN THE EU COUNTRIES

The European eel (Anguilla anguilla) is caught in the EU waters as glass eel and adult eels. The glass eel is mostly caught by France, Spain, UK, Portugal and Italy1. At the same time adult eels are caught in the rivers, lakes and coastal areas (e.g. lagoons) or on the way to breeding areas. The DCF data, provided during the 2014 year economic data call, suggests that 15 EU MS are fishing eels (ELE) in the EU waters (see Figure 1). It is important to highlight that most of the adult eels are caught in the inland waters, which are not covered by the DCF data collection and figure below represents only catches in the coastal and marine areas2 and include both size categories – glass eels and adult eels. The data suggest that total eel landings have decreased after 2010 whereas the total value of landings dropped in 2011, but increased again in 2012.

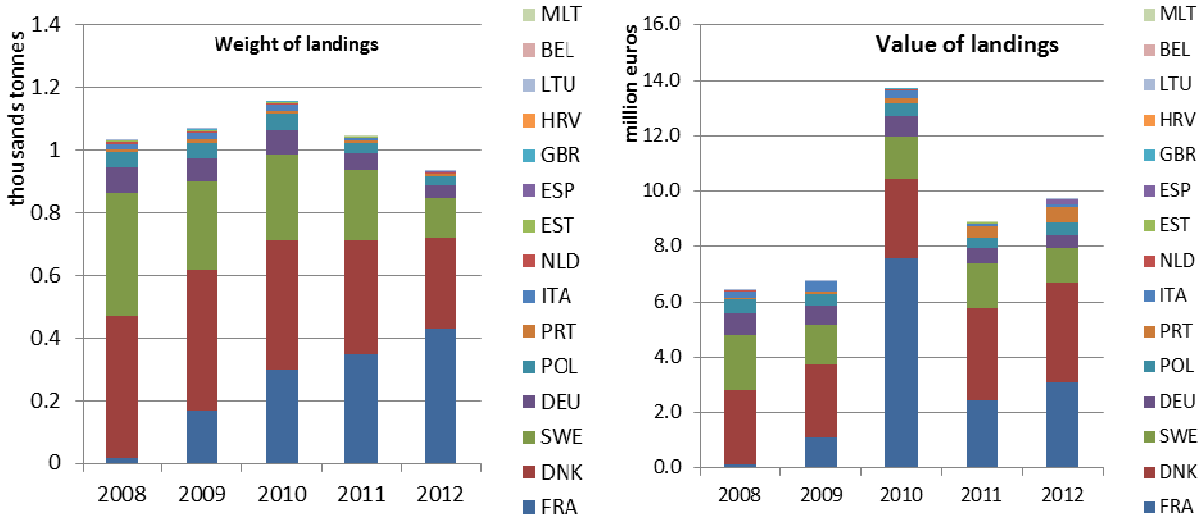

Figure 1. Landings of eel by country in 2008-2012

Source: DCF data call on fleet economics, 2014

3. INTERNAL AND EXTERNAL EU TRADE

Trade statistics is available through the EUROSTAT COMEXT data base. The full data set, covering 2001-2013 and 8 months of 2014 has been exported from the data base by JRC. The data set allows extracting trade of eel by processing category (Table 1). The Table 1 shows the evolution of CN codes in 2001-2014. The major change has been introduced in 2012 by adding the size categories in trade statistics for live eels and separating prepared and preserved eels in CN codification. Further trade analysis is separated into 2 stages:

[1] Insights into the European eel market chain, 2014

[2] There are also problems with Spanish transversal data submission by specie; therefore Spanish and French data provided might be not fully representative.

1. Trade oflifeeels, whichsupposedtorepresentthetradeofglasseelsforaquacultureandstockingofthenaturalwaters (in caseitisforeseen in theeelmanagementplans);
2. Trade offreshandfurtherprocessedeel (CN 0302, 0303, 0305 and 1604), whichsupposedtorepresentthetradeofeelproducts (caughtoraquacultured) for human consumption.

Table 1. CN codes used and their grouping, 2008-2012

CN code	Explanation	Processing category	2001	2002-2011	2012	2013	2014
03019200	Eels (Anguilla spp.); live	live	1	… 1			
03019210	Eels (Anguilla spp.); live ; of a length of < 12 cm				1	1	1
03019230	Eels (Anguilla spp.); live ; of a length of => 12 cm but < 20 cm				1	1	1
03019290	Eels (Anguilla spp.); live ; of a length of => 20 cm				1	1	1
03026600	Fresh or chilled eels Anguilla spp.	fresh	1	… 1			
03027400					1	1	1
03032600	Frozen eels Anguilla spp.	frozen			1	1	1
03037600			1	… 1			
03054410	Smoked eels Anguilla spp.; incl. fillets (excl. offal)	dried-salted-smoked			1	1	1
03054950			1	… 1			
16041700	Prepared or preserved eels; whole or in pieces (excl. minced)	prepared-preserved			1	1	1

Nineteen EU countries sold live eels over the last decades. This information includes re-selling of glass eels from one country to another, e.g. in case eel been sold from Spain to Germany and afterwards continued its journey to e.g. Poland for stocking the eel sales would be double counted as sales from Spain and sales from Germany. A comparison between sales and buyer statistics reveals that potentially 50% of the total sales could be double counted in this way and that for several countries the percentage of re-sales could be as large as 100%. Therefore the total sales values should be regarded with caution.

The export of live eel to third countries in terms of weight has not been significant in 2001-2014 (<2% of weight of live eel traded), however the share in terms of value reached almost 27% in 2005 and was fluctuating over the years till 2011, when export to the third countries been banned (see Figure 2).

The total value of live eel, exported to 3rd countries from EU countries in 2001-2014 was 201 million euros, or 496 tonnes. France was the major exporter to the third countries. This country exported 84% of live eels in terms of value and 59% in terms of weight in 2001-2014. The other countries: Spain and UK represented accordingly 7% and 8% in terms of value and 17% and 11% in terms of weight.

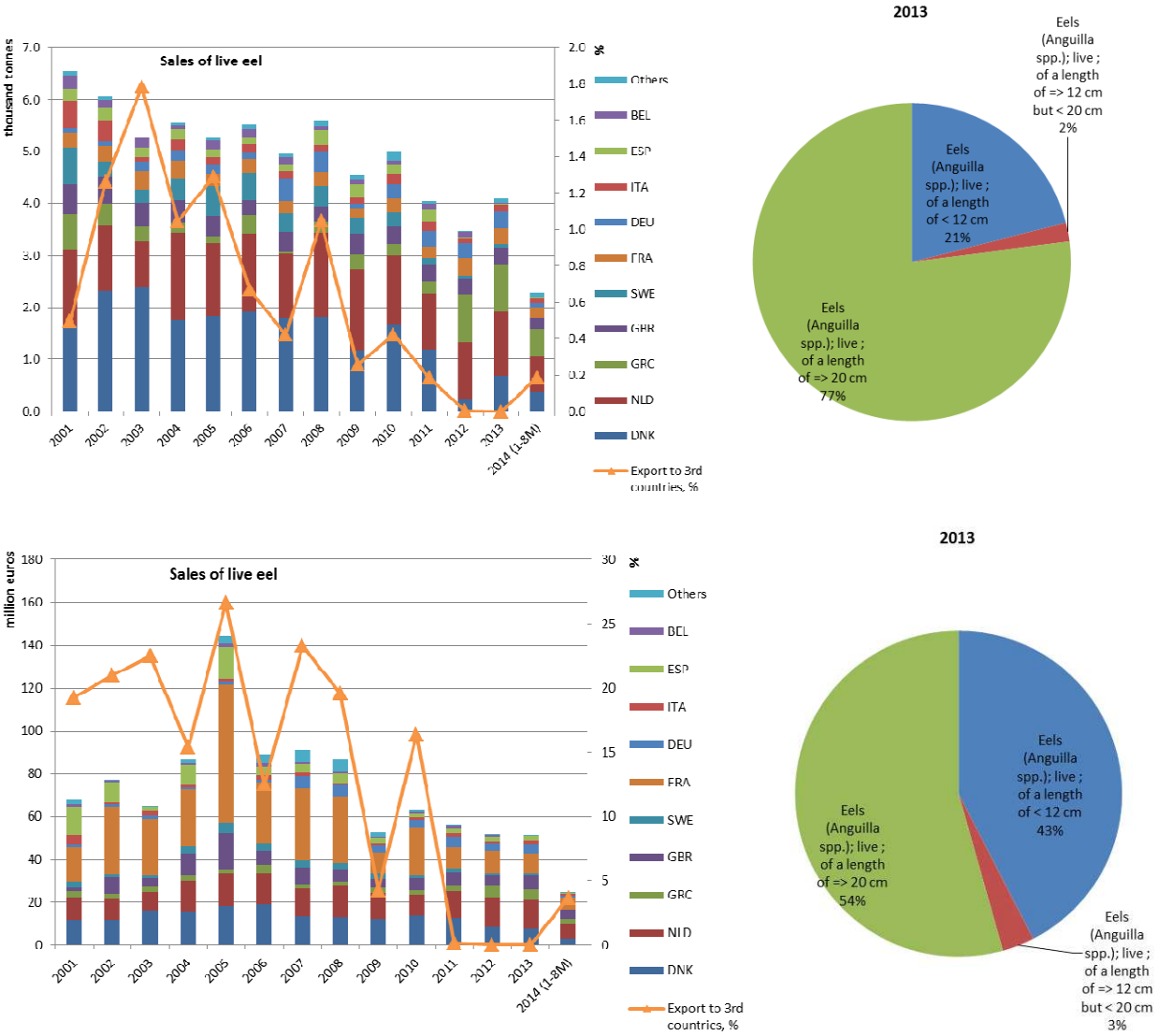

Figure 2.Trade (Sales) of the live eel by country and the % of exports to 3rd countries in 2001-2014 and the size composition of traded eels in 2013

Source: CEMEXT database, 2014 data is preliminary for 1-8 months

As the separation by size category is available only since 2012 when new categories were introduced in the CN codes (Table 1) the data by size category could only be analysed for the years 2012-2014. As we could see from the example in the Figure 2 the eels of the smallest size category

(<12 cm) are most valuable, representing 21% of export flow in terms of weight and 43% in terms of value.

The average trade price of the live eel <12 cm was 27.2 euros/kg (2012), 2.4 times higher than the price for live eels =>20 cm, which was equal to 11.2 euros/kg in 2012. The average trade price of eels of the length size 12-20 cm has been 24.2 euros/kg. The average trade prices by all categories decreased in 2012-2014. The highest decrease was obtained on the market of eel =>20 cm length, where the price dropped down by 32% in 2014 compared to 2012 while the price for glass eel < 12 cm decreased only by 9% during the same period.

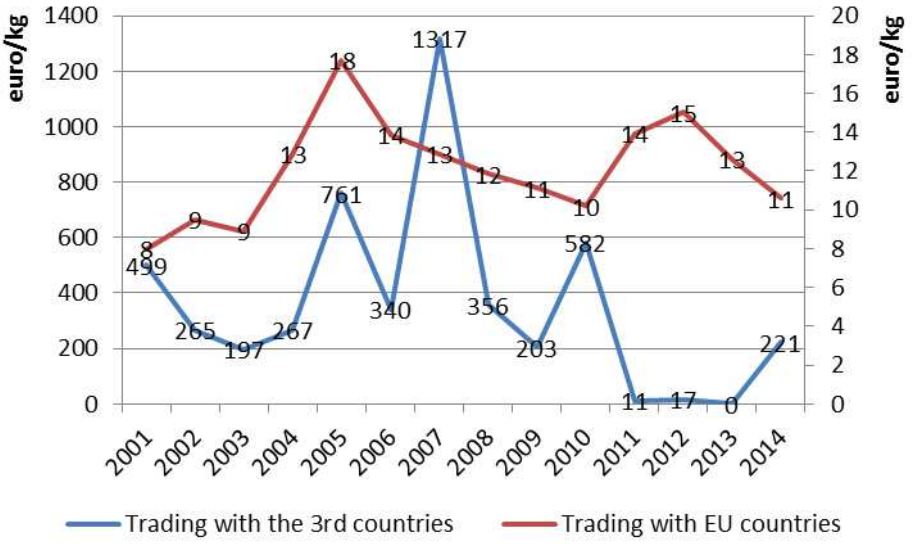

Figure 3. Average price of the traded live eel by destination in 2001-2014

Source: calculations based on CEMEXT data, 2014 data is preliminary for 1-8 months

After the trade ban in 2010 the average price of internal EU trade of live eel increased in 2011-2012. This could have been due to a shift in size categories (towards the more expensive smaller eels), but the absence of data per size category prevents hard conclusions on this. From 2012 onwards the prices for the EU internal trade decreased again.

In 2014, the export of live eel has been renewed (see Figure 3). During the first 8 months of the current year there were 3.1 tonnes of live eels of a length <12 cm exported to Hong Kong by France, 0.8 tonnes of live eels => 20 cm exported by the Netherlands to Azerbaijan and 0.6 tonnes of live eels of a length <12 cm provided by Spain to Andorra. The overall value of this export was 0.95 million euros.

The Figure 4 shows the export evolution of the fresh or processed eels by product and destination (EU and 3rd countries). The figure shows the evolution of the trade of fresh and processed eel products.

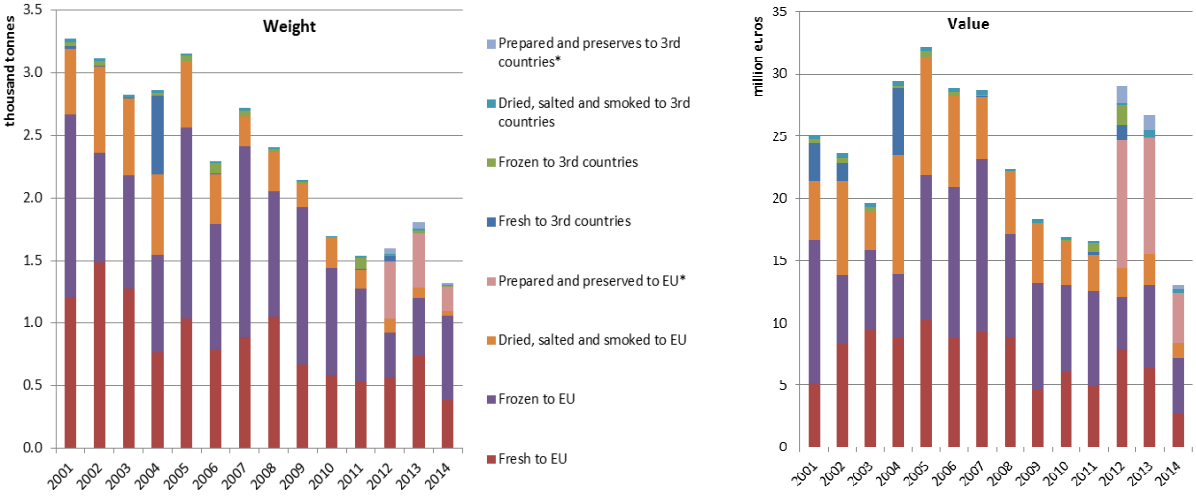

Figure 4. Trade of fresh and processed eels in EU and with 3rd countries in 2001-2014

Source: CEMEXT database, 2014 data is preliminary for 1-8 months

*the trade of prepared and preserved eels is additional trade flow appeared in 2012 when CN code for eels been separated in the trade of prepared and preserved fish (CN code 1604).

4. AQUACULTURE PRODUCTION

Glass eels are used for 3 major purposes:

1. Human consumption
2. Stockingofnaturalwaters (lakesandrivers)
3. Aquaculture

EUROSTAT collects data for both: production of fish and fish eggs for human consumption and production of hatcheries and nurseries at juvenile stage in life cycle[3]. There were 5 countries, reported European eels production in the juvenile or eggs stage in 2008-2012.

Table 2. Hatcheries and nurseries production of European eels, million units in 2008-2012

EUROSTAT data set	dest	Stage	Country	2008	2009	2010	2011	2012
fishaq_4b	TOT_USE	Juveniles	Denmark	:	:	:	:	7
fishaq_4a	TOT_USE	Eggs	Denmark	:	:	0	:	:
fishaq_4b	TOT_USE	Juveniles	Estonia	:	1	:	1	: c
fishaq_4a	TOT_USE	Eggs	Estonia	:	1	:	:	:
fishaq_4a	TOT_USE	Eggs	Germany	:	:	:	:	: c
fishaq_4b	TOT_USE	Juveniles	Lithuania	:	:	:	0	0
fishaq_4b	TOT_USE	Juveniles	Spain	0	0	0	0	0

Source: EUROSTAT data on aquaculture

C – confidential data

[3] http://epp.eurostat.ec.europa.eu/portal/page/portal/fisheries/data/database

The EUROSTAT data on European eel production for human consumption is represented in the Figure 5. This data should be judged very carefully as there are countries missing (see footnotes), but the major European eel producers in aquaculture sector could be identified.

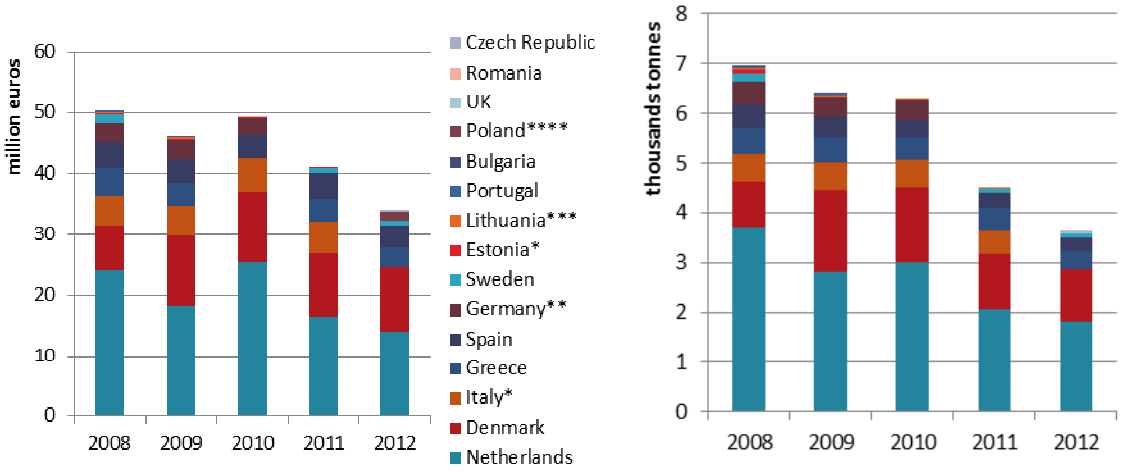

Figure 5. Eel production in the EU aquaculture, 2008-2012

* Data for 2012 is missing;
** 2011-2012 data on eel production considered to be confidential
***2010-2012 data on eel production considered to be confidential
****2008-2011 data on eel production is missing
Source: EUROSTAT data on aquaculture

The Figure 6 shows the average price of eel in the aquaculture sector. As in case of intra EU trade (between EU countries) the figure suggests increase of price of production in 2010-2012.

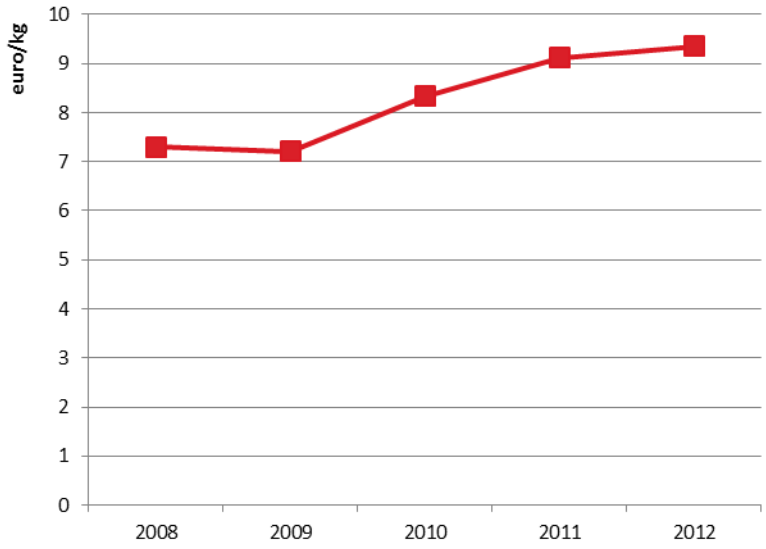

Figure 6. Average eel price in the EU aquaculture, 2008-2012

Source: EUROSTAT data on aquaculture

There are 10 aquaculture segments identified in the DCF data provided during 2014 data call for aquaculture for 2012, producing European eels:

Aquaculture segments with eels production:

Share of eels in the total production of the segments	
Denmark seg.05_3	100% weight and 100% value
Poland seg.04_2	<0.02% weight and value
Portugal seg.03_2	<0.03% weight and value
Romania seg.05_2	0.12% weight and 0.21% value
Romania seg.05_3	0.02% weight and 0.03% value
Spain seg.03_2	0.2% weight and 0.2% value
Spain seg.05_2	97% weight and 100% value
Spain seg.05_3	95% weight and 41% value
Spain seg.06_2	0.01% weight and 0.02% value
United Kingdom seg.05_3	0.21% weight and 0.24% value

However as we could see in most of the cases the share of eel in the overall production by segment is very limited.

Denmark and Spain are between the main 5 producers of eel in the aquaculture, these countries produced around 23% and 8% of eel during 2008-2012 (based on the data available from EUROSTAT) accordingly. There are 3 aquaculture segments in which the turnover from eel production is >94%, therefore these segments might be used to analyse the eel aquaculture (see Figure 7). The weight of eel production for these countries is similar to the production, reported by Denmark and Spain to EUROSTAT[4], therefore these segments represent around 20-31%[5] of EU eel production

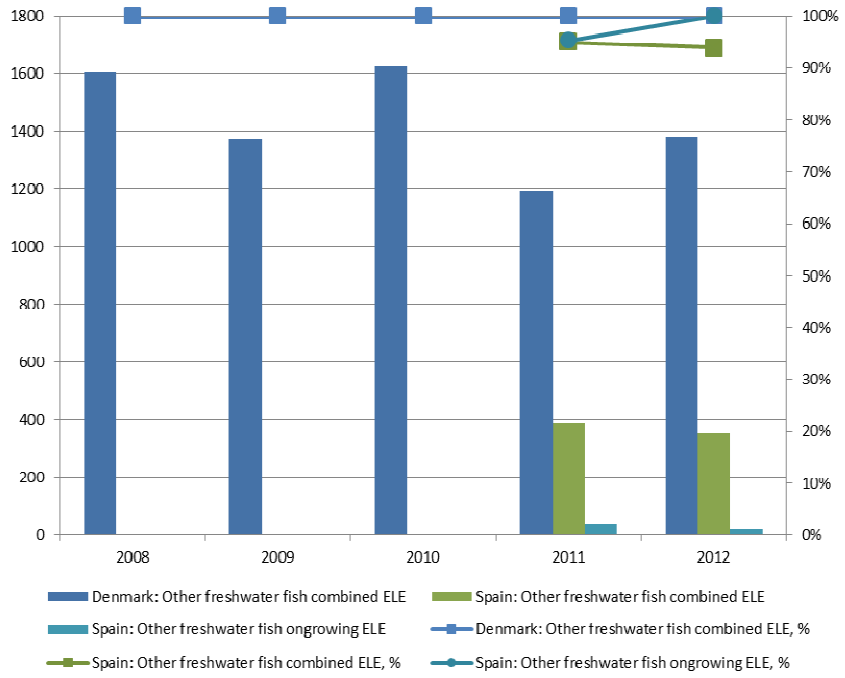

Figure 7. Eel producing segments, identified in the EU aquaculture, 2008-2012

[4] Note: Not completely equal, but it might be explained by the difference in definition of production and sales in EUROSTAT and DCF

[5] Note: 31%, but there is data missing for different countries different years as it showed in figure 4

The economic performance of these segments is presented in the

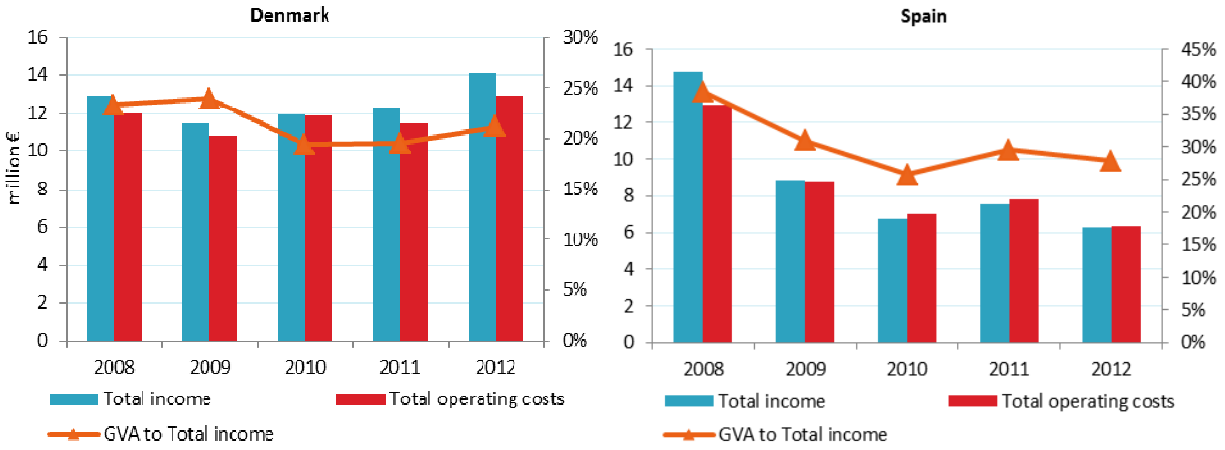

Figure 8. Economic performance of the aquaculture segments, related to eel production

Source: DCF data on aquaculture

Table 3 and Figure 8. To simplify the analysis two Spanish segments are merged on the Figure 8, while major economic indicators by segment are presented in the Table 3. From these data no clear trends can be seen for the economic performance of the eel aquaculture sector from 2010 onwards.

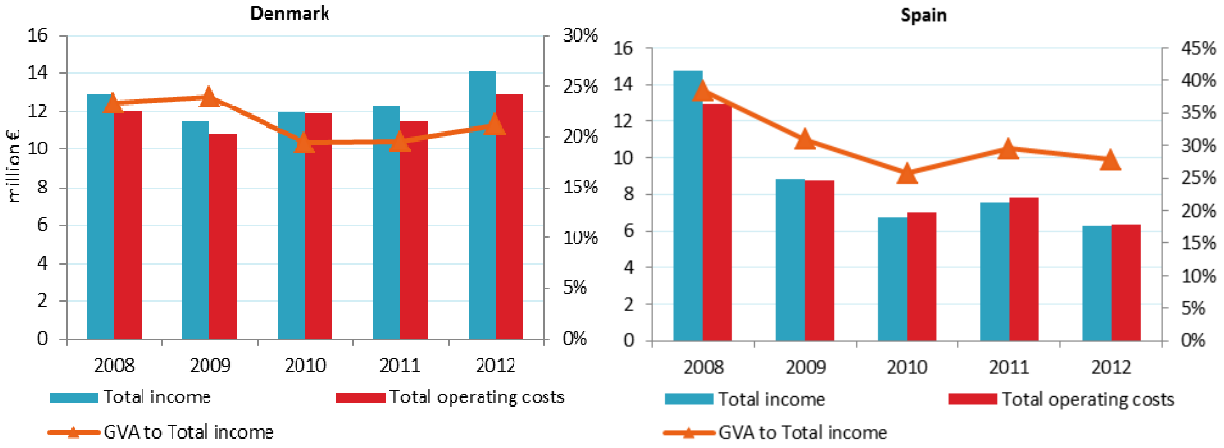

Figure 8. Economic performance of the aquaculture segments, related to eel production

Source: DCF data on aquaculture

Table 3. Economic performance indicators and sales of eel producing segments, 2008-2012

Variable	2008	2009	2010	2011	2012	% of total income	Change 2012/11	Development 2012/(2008-11)
Denmark: Other freshwater fish combined								
Total income	*12.9*	*11.5*	*12.0*	*12.4*	*14.1*	*100%*	*14%*	*16%*
Gross Value Added	*3.0*	*2.8*	*2.3*	*2.4*	*3.0*	*21%*	*24%*	*14%*
Operating cash flow	*0.9*	*0.7*	*0.1*	*0.9*	*1.2*	*8%*	*35%*	*86%*
Earning before interest and tax	*0.4*	*0.1*	*-0.6*	*0.5*	*0.8*	*6%*	*67%*	*752%*
Net profit	*-0.1*	*-0.3*	*-1.3*	*0.2*	*0.6*	*4%*	*211%*	*275%*
Total sales volume (thousand tonı	*1.6*	*1.4*	*1.6*	*1.2*	*1.4*		*16%*	*-5%*
Spain: Other freshwater fish combined								
Total income	*14.5*	*4.8*	*2.7*	*6.8*	*6.2*	*100%*	*-9%*	*-14%*
Gross Value Added	*5.6*	*1.2*	*1.1*	*2.2*	*1.7*	*27%*	*-24%*	*-33%*
Operating cash flow	*1.8*	*-1.0*	*-0.6*	*0.4*	*-0.1*	*-2%*	*-126%*	*-173%*
Earning before interest and tax	*-0.2*	*-1.7*		*-0.4*	*-0.5*	*-8%*	*-36%*	*37%*
Net profit	*0.8*	*-1.3*		*0.2*	*-0.2*	*-3%*	*-209%*	*-98%*
Total sales volume (thousand tonı				*0.4*	*0.4*		*-8%*	*-8%*
Spain: Other freshwater fish on growing								
Total income	*0.2*	*4.0*	*4.0*	*0.8*	*0.1*	*100%*	*-88%*	*-96%*
Gross Value Added	*0.1*	*1.5*	*0.6*	*0.0*	*0.1*	*65%*	*143%*	*-90%*
Operating cash flow	*0.0*	*1.0*	*0.3*	*-0.7*	*0.0*	*42%*	*105%*	*-77%*
Earning before interest and tax		*0.7*	*-0.1*	*-1.0*	*0.0*	*42%*	*104%*	*133%*
Net profit		*0.9*	*0.1*	*-0.8*	*0.0*	*42%*	*105%*	*-50%*
Total sales volume (thousand tonı				*0.0*	*0.0*		*-52%*	*-52%*

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