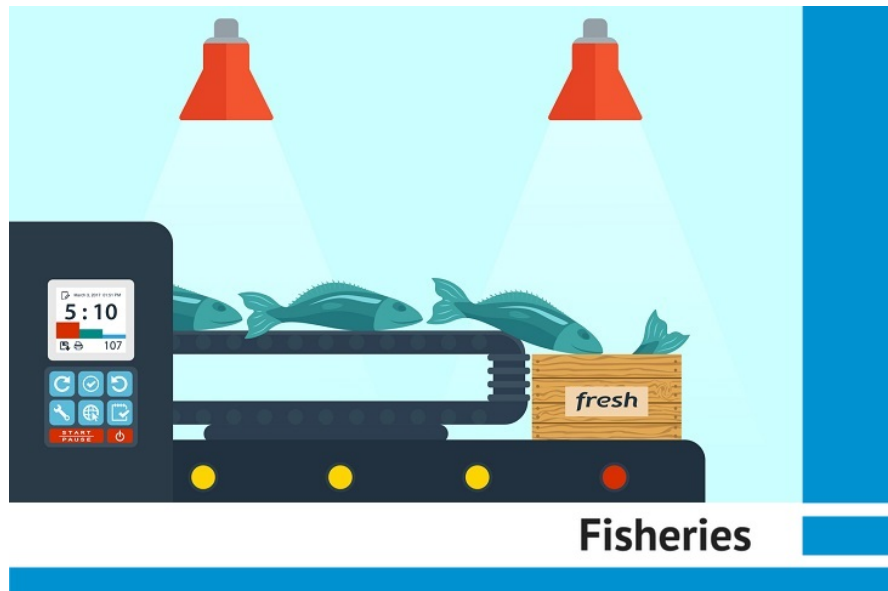


Research for PECH Committee - Seafood Industry Integration in the EU: all 22 Member States with a coastline with a coastline



Research for PECH Committee - Seafood Industry Integration in the EU: all 22 Member States with a coastline

Abstract

This study researched the drivers and mechanisms of both structural and non-structural horizontal and vertical integration in the seafood industry in all 22 Member States with a coastline. The objective of the study was to identify trends among the Member States.

The observed trends generally fall into three broad, inter-linked categories: regulatory environment, natural resources and firm performance.

This document was requested by the European Parliament's Committee on Fisheries.

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CFP	Common Fisheries Policy
ITQ	Individual Transferrable Quota
PO	Producer Organization
TAC	Total Allowable Catch

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EXECUTIVE SUMMARY

Background

The aim of this study is to provide the Members of the European Parliament's Fisheries Committee with a clear description of the corporate structure of the EU seafood industry (fishing, processing and the retail market). It provides a description of both the horizontal and vertical integration in the industry. The study, to the extent possible within the scope of the research, also explains the role of the third country operators and intermediaries.

Issues around vertical integration centre on what drives a firm to vertically integrate; why a firm will buy out one of its suppliers or customers or in some other way internalise the production of an intermediate good. In commercial fisheries there is one added dimension. The resource exploited - fish - is not always characterised by a private property rights structure. Rather, the fishing grounds are either common property or open access resources.

Some stakeholders are concerned by the increase in integration. The main concern is not based on economics but on equity and social justice. Fishing has been a family tradition in many communities. And while evidence suggests that integration can make fisheries more efficient, some find the potential gains in efficiency to be outweighed by social and other costs. These costs include the decline in independent fishermen and the disruption to coastal communities because of lost revenues and jobs.

This research is intended to document the evidence and provide an analysis of the current level of integration at the EU level.

Aim

The aim of this study is to provide a clear description of the corporate structure of the EU seafood industry. It further provides a description of the drivers and mechanisms of integration in the industry.

Methodology

The research combined both quantitative and qualitative research methodologies. For each of the EU Member States with a coastline, an analysis of the company structures of the main fish catching companies was carried out, and interviews were conducted with stakeholders. Additionally, empirical models were developed to estimate the impact of integration on employment, corporate income, vessel productivity and sector productivity.

Definition of integration

Integration could take a number of different forms. This could generally be classed as: structural and non-structural. Within these two categories integration could be vertical or horizontal.

Structural vertical integration is defined as the process of investing up or down the value chain. Structural horizontal integration could take two forms: the addition of new vessels or the acquisition of peers. A number of informal arrangements can be considered as non-structural forms of integration. These include: off-take agreements, quota swaps, or quota leasing.

Findings

Quantitative

The quantitative analysis resulted in the following findings. The number of employees is not affected by any measure of horizontal integration. However, wages and salaries of total crew decrease 5.5% on average when the average number of vessels per enterprise increase by one vessel. In terms of income, all three measures – income from landings, live weight of landings and value of landings – decrease with integration. Additionally, vessel productivity decreases with integration. These decreases may be explained by the fact that vessels which are acquired may become 'inactive'. This affects averages calculated with the number of vessels.

Sector productivity is not affected by integration. This indicates that even though some vessels may become inactive, the fishing effort of the active vessels does not decrease. This is evidence of improved firm efficiency.

Moreover, when the average vessel capacity per enterprise increases ten tonnes, the kilowatt (KW) days of effort (or kW fishing days) increase by 1%. Indicating that increased vessel capacity, leads to increased fishing effort.

Drivers & mechanisms of integration

The degrees, mechanisms and drivers of integration vary significantly among the EU Member States. These processes are affected by a broad range of different factors, many of which are inter-linked in diverse ways.

The observed trends generally fall into three broad, inter-linked categories: regulatory environment; natural resources, and; firm performance. Under regulatory environment, key factors driving or hindering integration are ease of access, regulatory clarity and stability, and fisheries management system. Factors related to natural resources found to influence integration, include fishing segment, access to fish stock, and historical factors. Two factors related to firm performance affect the processes of integration: income and profitability, and; the supportive role of POs.

Conclusion

The empirical analysis found that the number of employees is not affected by any measure of horizontal integration. However, wages and salaries of total crew decrease 5.5% on average when the average number of vessels by enterprise increase by one vessel. In terms of income, all three measures – income from landings, live weight of landings and value of landings – decrease with integration. Additionally, vessel productivity decreases with integration. On the other hand, sector productivity – as measured by days at sea, fishing days, or number of fishing trips – is not affected by integration. The decreases in average income, wages, and vessel productivity may be explained by the fact that vessels which are acquired may become 'inactive'. This affects averages calculated with the number of vessels. Sector productivity does not decrease as the active vessels may be utilized more intensively.

Regarding vertical and horizontal integration, a number of trends are observed. Non-structural integration is more common where structural integration may be hindered. For example, where the development of structural vertical integration is hindered by costs, ease of access or unstable supply of raw materials, offtake arrangements are more common. Similarly, non-structural horizontal integration through quota swaps, trading, leasing and

renting, takes place where legislation permits these activities, companies seek to optimize their fishing plans, and fulfil their obligations under the discard

Various factors drive or hinder structural integration. This research has found that the form of fisheries management system is not key in explaining the differences. Regulatory environment, natural resources and related firm performance are key.

Recommendations

Given that recommendations to improve the regulatory environment and access to natural resources could have impacts on legislation, and the fact that the empirical findings are based on general national level data, one key recommendation is that further econometric analysis is needed. This econometric analysis would be carried out on a company level dataset. Such a comprehensive EU-wide seafood industry detailed company level dataset does not yet exist. However, this study has already laid the groundwork for such a dataset. The suggested econometric analysis would feed into policy recommendations that mitigate the negative impacts of processes of integration and maximize their benefits. This current study has found that where structural integration has taken place companies were more able to develop financially sustainable fish plans, respond to changes in legislation, and strengthen the negotiating position towards buyers. Respondents stated that where integration has taken place, in some cases there was a negative impact on employment, however, in general the conditions in the sector improved.

A further recommendation from this study is for relevant organisations to develop comprehensive visions and coherent and reliable legislative frameworks for the fisheries sector.

Another recommendation relates to access to natural resources. In countries where there were sufficient natural resources, integration was more common. However, availability depends on several factors, not all of which are under the control of national authorities. In countries where access to natural resources was limited, particularly in the Mediterranean, aquaculture was developed. Policy frameworks incentivizing aquaculture development in resource scarce jurisdictions could generate both employment and income.

A final recommendation is to foster the development of markets for non-TAC and by-catch species. In light of the discard ban and of stock restrictions in some fisheries, this could prove an effective channel for fishing companies and processing companies to maximize their financial performance while minimizing waste and overfishing.

1. METHODOLOGY

The research combined both qualitative and quantitative research methodologies. The methodology used for the quantitative analysis is described in Chapter 2. This chapter outlines the methodology used for the qualitative analysis.

The research combined both quantitative and qualitative research methodologies. For each of the Member States with a coastline, an analysis of the company structures of the main fish catching companies was carried out in order to identify horizontal and vertical integration. Interviews were conducted with major fishing companies and producer organisations as well as with representatives of the small-scale fishing sector.

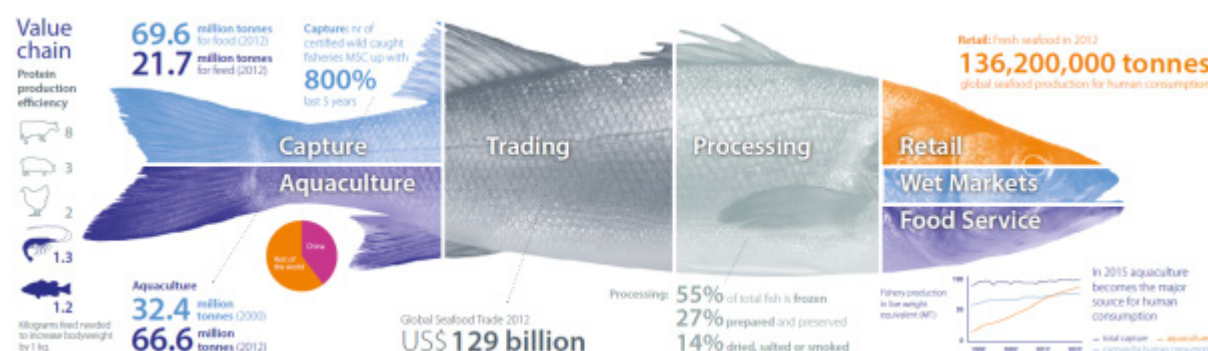
1.1. Definitions of integration

This section outlines the definitions of integration utilised in this report.

1.1.1. Structural vertical integration

Structural vertical integration is defined as the process of investing in businesses further up or down the value chain of a specific commodity. In the case of the fish industry, a fish catching company might consider vertical integration through the acquisition of fish processing plants, ports, cold chain logistics companies, fish retail/wholesale companies and other distribution outlets. Companies operating downstream in the value chain could similarly integrate through the acquisition of companies operating upstream. This study refers to this form of integration as structural vertical integration.

Figure 1: Fish product value chain



Source: Rabobank (2015), "Sustainable seafood is needed to nourish the world", online: <https://www.rabobank.com/en/about-rabobank/food-agribusiness/sectors/from-animals/sustainable-seafood/index.html>, viewed in April 2016.

1.1.2. Structural horizontal integration

Structural horizontal integration can take two forms. The first form of horizontal integration could also simply be called expansion. In the fishing industry, this is when a fishing company purchases more vessels.

The second form of horizontal integration is the acquisition of peers. In the fishing industry, this is often done to take advantage of quota arrangements. As such, horizontal integration through the acquisition of peers can occur in three different ways.

Firstly, a fishing company may acquire a peer that is member of the same producer organisation. Doing so allows the company to increase the size of its quota within the same

fishing area. In such instances, the company may even decide to decrease the size of its fleet in order to reduce costs if a smaller number of vessels are still able to fulfil the quota.

Secondly, a fishing company may acquire a peer or establish a subsidiary in another producer organisation within the same country. This allows the company to increase and/or diversify its quota.

Finally, a fishing company may acquire or invest in a peer or establish a subsidiary in another country. Similar to the second horizontal integration mechanism, this allows the company to increase and/or diversify its quota. This study refers to these forms of integration as structural horizontal integration.

1.1.3. Informal arrangements

There are a number of informal arrangements that can be considered as forms of integration to the extent that they are utilised in order to generate economic efficiencies by corporations. For example, fish catching companies may choose not to buy or sell their quota; rather they may borrow, rent or lease quota in order to either gain access to quotas or to generate capital to be used for other business activities. This is thus a form of non-structural horizontal integration.

Another example is that fish catching companies may negotiate off-take agreements with fish processing companies. An off-take agreement is an agreement between a supplier and a buyer in which the buyer acquires a certain value of a commodity supplied by the supplier. This guarantees demand for the fish that the supplier has harvested in a similar way that investments in fish processing companies does. Therefore, this can be considered a non-structural form of vertical integration.

2. QUANTITATIVE ANALYSIS

KEY FINDINGS

- **Number of employees not affected** by horizontal **integration**
- **Average wages** and salaries of total crew **decrease with integration**
- **Income** from landings, live weight of landings and value of landings **decrease with integration**
- **Vessel productivity decreases** with **integration**
- **Sector productivity** is **not** affected by **integration**
- Increase in **inactive vessels** in fleet **may explain decreases** in salaries, income and vessel productivity

The quantitative analysis of this research study aims to evaluate the effects of integration on various economic indicators (e.g. employment, income and productivity) in the European seafood industry. With this objective the quantitative analysis uses national level information from the Fleet Economic Performance data published by the Scientific, Technical and Economic Committee for Fisheries, and the historical vessels declarations of the Fishing Fleet Register.

The following sections describe the data, its limitations, the integration measures, the economic variables analysed and the empirical analysis.

2.1. Data

The quantitative analysis is based on information from the Fleet Economic Performance data published by the STECF, and the historical vessels declarations of the Fishing Fleet Register, at national level.

The Fleet Economic Performance data contains annual information for 23 European countries from 2008 to 2016. It contains a series of economic variables that are used to calculate integration and how these relate to employment, salaries and profitability. Table 1 shows the information included in the data analysis and summary statistics of this research.

The data contains a maximum of 208 observations corresponding to nine years (2008-2016) for 23 countries. The average number of employees in the European fishing industry from 2008 to 2016 is 6,652 with a high variability from a minimum of 107 in Slovenia in 2013 to a maximum of 39,281 in Spain in 2010, this European average corresponds to 4,470 full time equivalent employees, during the whole period. Other relevant variables include wages and salaries of crew, which are €20,946 on average per year per fte, income from landings, landings value, landings weight, productivity (fishing days, no. fishing trips, kW fishing days, days at sea) and vessel productivity variables were calculated by dividing income and landings by the number vessels. Variables on enterprises (enterprises with one vessel, enterprises with more than five vessels, and enterprises with two to five vessels) and number of vessels were used to calculate measures of integration as described in the following section.

Table 1: Fleet economic performance data, STECF – Summary statistics

Description	Obs.	Mean	Std. Dev.	Min	Max
Number of countries	207	12	7	1	23
Year	207	2012	3	2008	2016
Full-time equivalent (harmonised), Number	176	4,470	7,425	25	32,260
Total employed, Number	176	6,652	9,826	107	39,281
Wages and salaries of crew, Euro	176	85,900,000	137,000,000	206,775	599,000,000
In(Wages and salaries of crew)	176	16.6	2.1	12.2	20.2
Wages and salaries per FT employee	176	20,946	19,972	571	90,889
In(Wages and salaries per FT employee)	176	9.5	1.1	6.3	11.4
Income from landings, Euro	185	298,000,000	464,000,000	485,453	2,010,000,000
In(Income from landings)	185	18	2.1	13.1	21.4
Live weight of landings, Kg	191	215,000,000	243,000,000	152,310	933,000,000
In(Live weight of landings)	191	17.9	2.3	11.9	20.7
Value of landings, Euro	191	305,000,000	464,000,000	485,453	2,090,000,000
In(Value of landings)	191	18.1	2.1	13.1	21.5
Income from landings per vessel	185	137,794	217,529	934	1,211,083
In(Income from landings per vessel)	185	10.7	1.7	6.8	14
Live weight of landings per vessel	191	136,292	178,926	538	1,023,855
In(Live weight of landings per vessel)	191	10.7	1.9	6.3	13.8
Value of landings per vessel	191	144,477	221,182	1,132	1,206,682
In(Value of landings per vessel)	191	10.8	1.7	7	14
Days at sea, Days	188	228,496	399,073	2,640	1,921,836
Fishing days, Days	188	213,120	373,456	2,549	1,751,533
kW fishing days, Kwdays	188	30,000,000	43,800,000	495,864	176,000,000
In(kilowatt (KW) days of effort or kW fishing days)	188	16.2	1.5	13.1	19
Number of fishing trips, Number	188	185,208	354,072	2,572	1,783,620
Average number of vessels by enterprise	185	1.7	1.3	1	13.3
Average vessel capacity (Tonnes) by enterprise	185	76.6	146.1	3.4	776.7
Percentage of enterprises with more than one vessel	185	17%	14%	0%	64%

Description	Obs.	Mean	Std. Dev.	Min	Max
Educational attainment, % of Population aged 25-64 with more than Upper secondary education (levels 3-8)	207	74.5	15	27.8	94.6
Percentage of people at risk of poverty or social exclusion	205	25.5	7.8	14.9	49.3

Source: Scientific, Technical and Economic Committee for Fisheries (2015), *The 2015 Annual Economic Report on the EU Fishing Fleet*, Publications Office of the European Union, Luxembourg; Profundo Calculations.

A second dataset, the historical vessels declarations of the Fishing Fleet Register has been used to calculate the number of vessel sales, vessel entries and vessel exits from the fishing industry in the same countries and years as in the Fleet Economic Performance. This information is used as control variables that explain the relationship of vessel integration activities on the economic variables of interest, namely, employment, profitability and productivity.

The STECF itself occasionally uses data from FFR, as well as other sources, to complement its own database, in case of incomplete data submissions. The merging of these two datasets is a novel technique that provides more information to the econometric model and quantitative analysis. Table 2 shows the information included in the data analysis and summary statistics of this research from the FFR information.

Table 2: Fishing fleet register, FFR – Summary statistics

Description	Obs.	Mean	Std. Dev.	Min	Max
Number of countries	207	12	7	1	23
Year	207	2012	3	2008	2016
Number of Vessels – Entry	202	91.3	165.8	0	2,119.00
Number of Vessels – Exit	202	152.6	242.2	0	2,219.00
Number of Vessels - Sale	202	108.7	147.7	0	755

Source: Fishing Fleet Register; Profundo Calculations.

It is important to note that these national level datasets present a limitation in the lack of information at company level. In studies on mergers and acquisitions – forms of integration – the ideal dataset would allow to identify actual integration operations among companies and, therefore, compare companies that integrated with those who didn't integrate (Canyon et al, 2002; Kubo et al, 2012; Lehto et al, 2008). In this situation, the econometric model would compare the economic indicators of interest (employment, income and productivity) under cases of integration vs no-integration to isolate their effect; and by using fixed effects at the company level, the model would allow us to control for individual characteristics of each company.

2.2. Definitions of integration used in model

The analysis will focus on measures of integration or concentration in the industry based on the number of vessels and the number of companies. Three measures will be used: Average number of vessels by enterprise (ANV), Average vessel capacity (AVC) by enterprise at national level and the representation of enterprises with more than one vessel at national level.

The first two measures will work as a concentration index for the industry, based on vessel and capacity concentration, as explained below. They will be the result of dividing the total number of vessels, or its capacity, by the number of enterprises for each year in each country:

$$ANV_{ct} = \frac{\text{Number of vessels}_{ct}}{\text{Number of enterprises}_{ct}}$$

and

$$AVC_{ct} = \frac{\text{Vessel tonnage}_{ct}}{\text{Number of enterprises}_{ct}}$$

The third measure is the proportion of enterprises with more than one vessel as percentage of total enterprises at national level:

$$pEmore1ves_{ct} = \frac{\text{Number of enterprises with one vessel or more}_{ct}}{\text{Number of enterprises}_{ct}}$$

in which the subscript c indicates each country and t each year. These measures are informative in terms of integration, as shown, for example, in the case of Belgium 2008 – 2010 in Table 3.

Table 3: Integration indicators example

Belgium	Unit	2008	2009	2010
Vessel tonnage	Tonnes	19303	19458	16095
Total number of vessels	Number	102	102	91
Enterprises with one vessel	Number	92	85	77
Enterprises with 2 to 5 vessels	Number	5	7	6
Enterprises with more than 5 vessels	Number	0	0	0
Total number of enterprises in industry		97	92	83
Average number of vessels by enterprise (ANV_{ct})		1.052	1.109	1.096
Average vessel capacity (Tonnes) by enterprise (AVC_{ct})		199	211.5	193.9
Percentage of enterprises with more than one vessel (pEmore1ves_{ct})		5%	8%	7%

Source: Scientific, Technical and Economic Committee for Fisheries (2015), *The 2015 Annual Economic Report on the EU Fishing Fleet*, Publications Office of the European Union, Luxembourg; Profundo Calculations.

Between 2008 and 2009 the number of vessels in Belgium remained constant, however, the number of enterprises with one vessel decreased from 92 to 85 while the number of enterprises with more than two vessels increased from five to seven. This is a clear example of integration in the industry. By calculating the Average number of vessels by enterprise (ANV_{ct}) we see that this value increases from 1.05 to 1.11 vessels per company, on average. This indicator therefore will show the trend and dynamics of the integration in the industry. In the following year, 2010, we observe a decrease in the number of vessels and of total enterprises (with one or more vessels), but it is not clear how this general reduction changed sector integration. Therefore, by calculating a comparable indicator (ANV_{ct}) for 2010, 1.096, we can infer that the general decrease in the number of vessels and companies reduced the level of integration in the industry compared to 2009, but still being higher than in 2008.

Using the Average vessel capacity by enterprise (ANV_{ct}) indicator, we will also be able to measure integration but in another important dimension of the fishing industry which is its fish catching capacity and, therefore, its capacity of generating income and the impact on employment.

The final measure indicates that the higher the percentage of enterprises with more than one vessel there is a higher integration in terms of vessels in the industry.

2.3. Empirical analysis

In order to identify the impact of integration on employment, income and productivity in the European fishery industry, the research estimates Fixed Effects models at the country level. This methodology allows us to control for unobservable factors at the country level, which will minimize endogeneity problems.

The formal representation of the model is:

$$y_{ct} = \alpha + \beta \text{Integration}_{ct} + \theta \text{FFR}_{ct} + \gamma X_{ct} + \eta_c + \lambda_t + \varepsilon_{ct}$$

in which y_{ct} is a variable for employment, income or productivity, Integration_{ct} is any of the measures of integration: ANV_{ct} , AVC_{ct} or $pEmore1ves_{ct}$. FFR_{ct} are the vessel integration activities (sellssales, and exits) from the FFR dataset, X_{ct} are other control variables which vary in time by country and that could be informative for analysing the dynamics of employment, income or productivity. In this case, the variables selected were: educational attainment of each country and year, measured as the percentage of Population aged 25-64 with Upper secondary, post-secondary non-tertiary and tertiary education (levels 3-8), and the percentage of people at risk of poverty or social exclusion. These variables were downloaded from Eurostat and merged with the STECF and the FFR data. η_c indicate country fixed effects which will control for events that occur at the country level including unobservable characteristics of countries and λ_t are year fixed effects that will control for time effects at the macro-level and might identify major economic events each year.

The econometric estimation of the model provides values to the parameters α , β and θ , which will indicate if there is an impact of integration in the economic indicator of interest (employment, income or productivity), and, if such effect is found significant, these parameters will show the direction and magnitude of the effect.

2.4. Results

The empirical model described above was estimated to analyse the effect of integration on 14 measures of employment, income and productivity as listed in Table 4.

Table 4: In(kilowatt (KW) days of effort or kW fishing days)

Category	Abbreviation	Measure	Average
Employment	FTE	Full-time equivalent (harmonised), Number	4,470
	TE	Total employed, Number	6,652
	In(CW)	In(Wages and salaries of crew)	16.6
Income	In(CW_e)	In(Wages and salaries per FT employee)	9.5
	In(IL)	In(Income from landings)	18
	In(WL)	In(Live weight of landings)	17.9
Vessel productivity	In(VL)	In(Value of landings)	18.1
	In(IL_v)	In(Income from landings per vessel)	10.7
	In(WL_v)	In(Live weight of landings per vessel)	10.7
	In(VL_v)	In(Value of landings per vessel)	10.8

Category	Abbreviation	Measure	Average
Sector productivity	DS	Days at sea, Days	228,496
	FD	Fishing days, Days	213,120
	In(KWD)	In(kilowatt (KW) days of effort or kW fishing days)	16.2
	FT	Number of fishing trips, Number	185,208

Source: the authors.

For each of these variables a model was estimated for each integration variable. Table 5, Table 6, Table 7 and Table 8 summarise the estimations of all models, listing the parameters that resulted statistically significant, or that show a positive or negative effect of integration in each of the measures of the four categories listed in Table 4. The detailed results of all estimations (84 models in total) are detailed in Table 91 to Table 104 in the annex.

In general, the results indicate that number of employees, either in nominal terms or full time equivalent, are not affected by any measure of integration as all the estimations are not statistically significant (Table 5). However, wages and salaries of total crew decrease 5.5% on average, which represent a 5% decrease on the wage and salaries per fte, when the average number of vessels by enterprise increase by one vessel. Therefore, the more vessels a single enterprise has, the lower the salary paid to their crew. This may be explained by the fact that vessels which are acquired may become 'inactive'. The quota is then harvested by another vessel within the company group, or the fish effort is carried out by another vessel if one vessel becomes in active. Therefore, the average salaries decrease with the addition of a vessel.

In terms of income, all three measures, income from landings, live weight of landings and value of landings decrease with integration (Table 6). In particular, income from landings decrease 8.7% when the average number of vessels by enterprise increase by one vessel, or 5% when the percentage of enterprises with more than one vessel increase by 10%. Live weight of landings decreases 4% if the average vessel capacity (AVC) by enterprise increases ten tonnes, or 7.9% when the percentage of enterprises with more than one vessel (pEmore1ves) increase by 10%. The negative effect of both measures of integration, AVC and pEmore1ves, on the value of landings is slightly lower, 3% and 6.7%, respectively, which might be the result of higher local prices. Alternatively, this may also be explained by two other factors, one of which is external to the fishing company, the other is internal. The external factor is the changes in the Maximum Sustainable Yield and Total Allowable Catch. The internal factor relates to the number of active vessels, as mentioned above. Vessels which are acquired may become 'inactive', thus impacting these results as they decrease the average values. Per active vessel incomes are likely to increase, while the average incomes of the fleet as a whole decrease.

The productivity of vessels (Table 7) reflect similar changes when vessel integration increases by reducing the average income, weight and value of landings per vessel. This, again, may be explained by vessels becoming inactive. In terms of sector productivity (Table 8), the results indicate that integration does not have an effect in the number of days at sea, fishing days, or number of fishing trips. This would indicate that even though some vessels may become inactive, the fishing effort of the active vessels does not decrease. Moreover, when the average vessel capacity by enterprise increases ten tonnes, the kilowatt (KW) days of effort (or kW fishing days) increase by 1%. Given the European average of 30,000,000 kW fishing days (Table 1), this 1% effect would represent an average increase of 300,000 kW fishing days. This indicates that when companies increase vessel capacity, they also increase their fishing effort.

Table 5: Employment – parameters estimation

		FTE	FTE	FTE	TE	TE	TE	ln(CW)	ln(CW)	ln(CW)	ln(CW _e)	ln(CW _e)	ln(CW _e)
β	ANV							-0.057*			-0.051*		
β	AVC												
β	pEmore1ves												
θ_1	No of Vessels – Exit	1.558*	1.563*	1.564*	1.392*	1.399*	1.394*						
θ_2	No of Vessels – Sale							0.000*	0.000*	0.000*	0.001*	0.001*	0.001*
γ_1	Educational attainment							-0.020+	-0.025*	-0.024*	-0.029*	-0.033*	-0.031*
γ_2	% pop at risk of poverty	-79.5*	-79.7*	-79.9*	-83.4*	-83.6*	-84.1*	-0.015+	-0.019*	-0.019*			
λ_t	Year fixed effects	0	0	0	0	0	0	3	3	3	5	5	5
η_c	Country fixed effects	17	16	17	20	19	20	21	20	20	22	21	22
α	Constant	4428+	4323+	4451+	5308+	5122+	5395+	18.8*	19.1*	19.1*	13.3*	13.6*	13.5*
	N	164	164	164	164	164	164	164	164	164	164	164	164

* Statistically significant at 5%, + Statistically significant at 10%. Source: Profundo Calculations.

Table 6: Income – parameters estimation

		ln(IL)	ln(IL)	ln(IL)	ln(WL)	ln(WL)	ln(WL)	ln(VL)	ln(VL)	ln(VL)
β	ANV	-0.091*			-0.183*			-0.102*		
β	AVC				-0.004*			-0.003*		
β	pEmore1ves			-0.687*			-1.563*			-1.104*
θ_1	No of Vessels – Exit									
θ_2	No of Vessels – Sale							0.001*	0.001*	0.001*
γ_1	Educational attainment		-0.028+	-0.025+				-0.027*		
γ_2	% pop at risk of poverty	-0.037*	-0.044*	-0.043*	-0.033*	-0.029+	-0.023*	-0.032*	-0.028*	

		ln(IL)	ln(IL)	ln(IL)	ln(WL)	ln(WL)	ln(WL)	ln(VL)	ln(VL)	ln(VL)
λ_t	Year fixed effects	3	5	5	0	0	0	2	5	4
η_c	Country fixed effects	19	17	19	20	19	20	20	17	19
α	Constant	20.4*	21.0*	20.8*	18.3*	20.3*	18.9*	19.8*	21.2*	20.1*
	N	172	172	172	177	177	177	177	177	177

* Statistically significant at 5%, + Statistically significant at 10%. Source: Profundo Calculations.

Table 7: Vessel productivity – parameters estimation

		ln(IL _v)	ln(IL _v)	ln(IL _v)	ln(WL _v)	ln(WL _v)	ln(WL _v)	ln(VL _v)	ln(VL _v)	ln(VL _v)
β	ANV	- 0.179 *			- 0.273 *			- 0.192 *		
β	AVC					- 0.003 +			- 0.003 *	
β	pEmore lves			- 0.952 *			- 1.787 *			- 1.327 *
θ_1	No of Vessels – Exit	- 0.000 *	- 0.000 *	- 0.000 *				- 0.000 *		
θ_2	No of Vessels - Sale									
γ_1	Educati onal attainm ent		- 0.042 *	- 0.038 +					- 0.037 *	
γ_2	% pop at risk of poverty	- 0.053 *	- 0.066 *	- 0.065 *	- 0.037 *	- 0.058 *	- 0.053 *	- 0.042 *	- 0.056 *	- 0.053 *
λ_t	Year fixed effects	6	6	6	2	4	4	6	6	6
η_c	Country fixed effects	21	21	22	19	18	16	21	22	22
α	Constan t	16.6*	17.8*	17.5*	14.4*	16.9*	15.4*	15.9*	17.8*	16.6*
	N	172	172	172	177	177	177	177	177	177

* Statistically significant at 5%, + Statistically significant at 10%. Source: Profundo Calculations.

Table 8: Sector productivity – parameters estimation

		DS	DS	DS	FD	FD	FD	ln(K WD)	ln(K WD)	ln(K WD)	FT	FT	FT
β	ANV												
β	AVC								0.00 1+				
β	pEmor elves												
θ_1	No of Vessel s - Exit										- 20.0 +	- 19.9 +	- 20.1 +
θ_2	No of Vessel s - Sale												
γ_1	Educa tional attain ment	- 470 8*	- 469 0*	- 469 7*	- 362 6*	- 361 0*	- 352 0*	0.00 6	0.00 8	0.00 8	- 299 6+	- 298 1+	
γ_2	% pop at risk of povert y	- 267 5+	- 266 1+	- 267 2+	- 149 4	- 148 1	- 146 2	- 0.03 5*	- 0.03 3*	- 0.03 4*	- 254 5+	- 253 3+	- 253 0+
λ_t	Year fixed effects	0	0	0	0	0	0	3	3	3	1	1	1
η_c	Count ry fixed effects	20	18	20	20	19	20	18	19	19	18	17	18
α	Const ant	413 033 *	405 748 *	412 315 *	307 250 *	302 250 *	300 115 *	16.6 *	16.1 *	16.4 *	265 197 *	258 355 *	261 450 *
	N	174	174	174	174	174	174	175	175	175	175	175	175

* Statistically significant at 5%, + Statistically significant at 10%. Source: Profundo Calculations.

3. BELGIUM

KEY FINDINGS

- **99%** of fish **exports** to other **EU** countries
- Significant **value adding** in domestic fish **processing**
- **34%** of Belgian **fleet foreign-owned**, of which **83% Dutch**
- **Some horizontal integration**, particularly **foreign fishermen**
- **No vertical integration** as demersal species are main target

3.1. Composition of the Belgian seafood sector

Belgian fishing companies generated approximately € 82 million in landings income in 2015 (Table 9). Processing companies further generated approximately € 592 million in 2016.

Belgium had a relatively high trade deficit in the fisheries segment. While it exported produce worth € 996 million, imports reached a value of € 1.9 billion. Belgium therefore had a trade deficit in the fisheries segment of € 871 million.

Neighbouring countries France, the Netherlands and Germany received the largest proportions of Belgian fish exports at 34%, 30% and 11% respectively. The Netherlands and France were also Belgium's largest suppliers, providing respectively 27% and 10% of total fish imports in 2016. In total, 62% of Belgian fish imports originated in other EU member states. 99% of Belgium's fish exports went to other EU countries.

There were only 73 registered fishing vessels in Belgium as of 2017. These belonged to 77 enterprises. Only 2.6% of the enterprises in Belgium operated more than one vessel.

The fish catching segment employed 492 fte in 2015. The fish processing segment employed 592 fte in the same year.

Table 9: Belgian seafood sector key figures

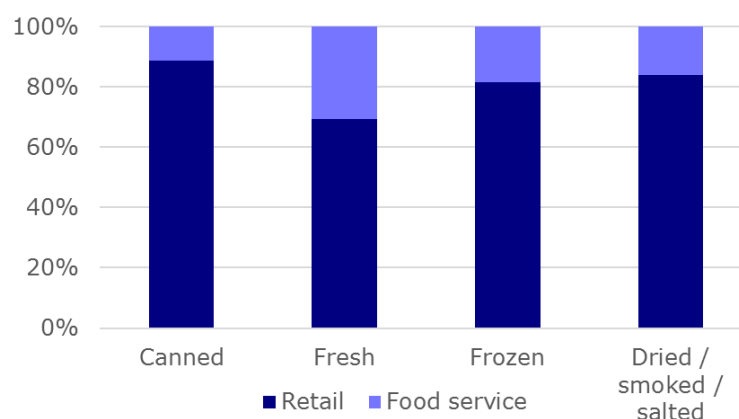
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2017)	73	
	Active vessels (2017)	67	92%
	Average vessel tonnage per vessel (2015, GT)	184	
	Average vessel tonnage per enterprise (2015, GT)	189	
<i>Enterprises</i>	Number of fishing enterprises (2017)	58	
	Enterprises with more than one vessel (2017, number, % enterprises)	7	12%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	82	0.02%
	Average landing income per fte employed (2015, €)	201,579	
	Average landing income per vessel (2015, €)	1,035,630	
	Average landing income per enterprise (2015, €)	1,062,529	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	406	0.01%
	Average employment per vessel (2015, fte)	5.1	
	Average employment per enterprise (2015, fte)	5.3	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	592	0.14%
	Employment in the fish processing sector (2015, fte, % workforce)	905	0.02%
	Average processing production per fte employed (2015, €)	654,254	
Trade	Trade balance (2016, € mln, % GDP)	-871	0.21%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	996	0.24%
	1. France (2016, € mln, % export)	340	34%
	2. Netherlands (2016, € mln, % export)	300	30%
	3. Germany (2016, € mln, % export)	110	11%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	1,866	0.44%
	1. Netherlands (2016, € mln, % import)	513	27%
	2. France (2016, € mln, % import)	180	10%
	3. Germany (2016, € mln, % import)	110	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Overall, the majority of fish products in Belgium are destined for the retail market. 89% of canned, and 82% of frozen fish and fish products are sold to retailers. About one third of fresh fish is sold to the food service industry (see Figure 2).

Figure 2: Belgium: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In Belgium, about three quarters of canned and 60% of frozen fish and fish products are branded. Of fresh fish only 15% is branded. 40% of frozen fish is sold under retailers' own labels while this is the case for one third of fresh fish (see Table 10).

Table 10: Belgium and Luxembourg: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	15%	72%	60%	47%
Unbranded	52%			
Own label	33%	28%	40%	53%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Important brands for frozen fish include Iglo (part of Nomad (UK)) with a market share of approximately 48% of the frozen segment, and Pescanova (Spain) with around 11% (FFT, 2018). Nomad's Iglo also holds a market share of around 5% in fresh fish (ibid.). Imperial Fish (part of Sopralex & Vosmarques (Belgium)) holds a share of around 33% of the canned fish segment (ibid.). In the dried/smoked/salted segment, Gabriel is a key brand with a market share of approximately 23% (ibid.).

3.2. Producer organisations

There is only one producer organisation active in Belgium – Rederscentrale (Producentenorganisatie van de Reders ter Zeevisserij), located in Oostende (European Commission, 2017).

The producer organisation has 67 members (Rederscentrale, 2018). In 2017, 73 vessels were registered, of which 67 (92%) were active (STECF, 2018). Three companies are not members of the PO.

Once a fisherman has an authorised vessel and a commercial fishing licence, they have access to the national fishing quotas, which are rationed to all fishermen on the principle of universal access. These quotas come in the form of catch limits for individual vessels. Access to fishing opportunities is centrally managed by the Flemish fisheries ministry, in co-management with the PO (Brouckaert, 2018).

Catch limits are not a form of legal ownership in the Belgian system. Individual vessels must comply with the catch limits set for their respective fleet segment and cannot swap or trade their catch limit. When a catch limit is exceeded, it is deducted from that vessel's quota for the next year, in addition to a 20% penalty. Where quotas are underutilised, quotas are carried over to the next quota period of the same year. Thus, quota utilisation is encouraged through central management rather than through individual transfers. The only way to acquire additional quotas is through purchasing another active vessel with its associated fishing licence (Brouckaert, 2018).

3.3. Company analysis

There are no pelagic freezer-trawlers present in the Belgian fishing fleet. In the demersal sector approximately 70 vessels are active, owned by 58 owners. Belgian cutters only catch limited amounts of pelagic fish, mostly as by-catch (de Groote, 2018). A large share of the Belgian pelagic fish quota is swapped with other countries – particularly the Netherlands and Germany – for demersal fish quota (Rederscentrale, 2017; de Groote, 2018).

There are two companies/families that own three vessels, the Belgian Desmit family and the Dutch fisherman Joos De Ridder. Of the seven owners that own two vessels, the Belgian family Depaepe owns the largest vessels. Desmit, De Ridder and Depaepe are discussed in the following sections.

The Belgian fleet consists of 67 active vessels. All vessels are engaged in the demersal fisheries. This includes 13 vessels targeting shrimp. It is unclear whether they also target other species. The fleet consists of the large fleet segment (48%; vessels with main power between 221 kW and 1200 kW) and the small fleet segment (52%; vessels with main power of 221 kW or lower).

Table 11: Companies/families with more than one vessel

Group (home port)	Vessel Name	Tonnage Gt
Desmit (Oostende)	Aran	42
	Broodwinner	100
	Renilde	68
De Ridder (Urk)	Cornelis Gerrit	102
	Grietje-Hendrika	109
	Hillie	126
Depaepe (Damme)	Calypso	284
	Zilvermeeuw	236
Schot (Tholen)	Job Senior	139
	Van Maerlant	84
Siereveld (Arnemuiden)	Mooie Meid	390
	Pieter	140
Luickx (Zeebrugge)	Flamingo	396
	Vaya Con Dios	351
Nentjes (Urk)	Dubbele Senior	128
	Hennie	192
Rederij De Viertorre (Oostende)	Den Hoop	389
	Fiston	33
Ackx (Knokke-Heist)	Thalassa	68
	Zuiderzee	251

Source: "EU Fleet Register (2018, May), 'Search: Belgium; active fleet; all', viewed on 09 May 2018.; Rederscentrale (n.d.), Ledenlijst, online: <http://www.rederscentrale.be/index.php?page=organisatie&categorie=13&lang=ned>, viewed on 09 May 2018.; Scientific, Technical and Economic Committee for Fisheries (2017, December), The 2017 Annual Economic Report on the EU Fishing Fleet (STECF 17-12), p.220.; FOD Vervoer en Mobiliteit (2017, December), Officiële lijst van de Belgische vissersvaartuigen, online: <http://opleid.info/officiele-lijst-van-de-belgische-vissersvaartuigen.html?page=2>, viewed on 15 May 2018.; Scheepvaartwest (n.d.), 'Search: Fishing boats; Ext. Marking AND vessel name', online: <http://www.scheepvaartwest.be/CMS/index.php/fishing-boats/>, viewed on 15 May 2018.; Visserijnieuws (n.d.), 'Search: Ext. Marking AND vessel name', online: <https://www.visserijnieuws.nl/nieuws/>, viewed on 15 May 2018.; Kotterspotter (n.d.), 'Search: Ext. Marking AND vessel name', online: <http://kotterspotter.jouwweb.nl/z-zeebrugge>, viewed on 15 May 2018.; <https://www.staatsbladmonitor.be/bedrijfsfiche.html?ondernemingsnummer=0875660372> (n.d.), 'Search: company name AND city', online: <https://www.staatsbladmonitor.be/bedrijfsfiche.html?ondernemingsnummer=0875660372>, viewed on 15 May 2018.; Rederscentrale (2017, November), Productie- en Marketingplan 2018, Bijlage 1 Ledenlijst."

46 (66%) fishing vessels operating in Belgium are ultimately owned by Belgian legal persons. 24 vessels (34%) are foreign owned, namely by Dutch (20 vessels; 29%); British (2 vessels; 2.9%), French (1 vessel; 1.4%) and Spanish (1 vessel; 1.4%) legal persons (Staatsbladmonitor, 2018). The foreign entities are listed in Table 12.

Table 12: Foreign ownership of Belgian fish catching companies

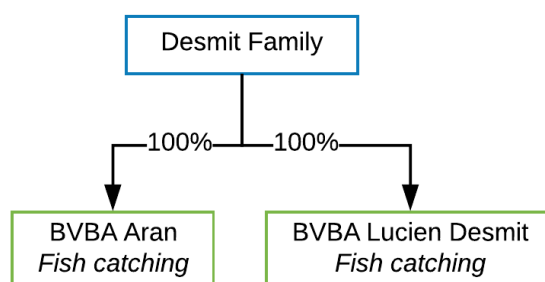
Country	Owner (home port)	No. of vessels
Netherlands	Van Laar (IJmuiden)	1
	De Krijger (Yerseke)	1
	Fam Van den Berg (Urk)	1
	De Ridder (Urk)	3
	De Vries (Urk)	1
	Schot (Tholen)	2
	Siereveld (Arnemuiden)	2
	Meun (Groede)	1
	Van Veen (Urk)	1
	Kramer (Urk)	1
	Nentjes (Urk)	2
	Hakvoort (Urk)	1
	Smid (Den Oever)	1
	Padmos (Bruinisse)	1
	Padmos (Bruinisse))	1
<i>Total Netherlands</i>		20
United Kingdom	MacDuff (Aberdeen)	1
	Prust (Brixham)	1
<i>Total United Kingdom</i>		2
Spain	Inter Arauco S.L. (Las Arenas-Getxo)	1
France	Tared (Dunkerque)	1
Total		25

Source: Rederscentrale (n.d.), "Ledenlijst", online: <http://www.rederscentrale.be/index.php?page=organisatie&categorie=13&lang=ned>, viewed in February 2018; Staatsbladmonitor (n.d.), 'Search: company name', online: <https://www.staatsbladmonitor.be/bedrijfsfiche.html>, viewed in February 2018; Scheepvaartwest (n.d.), 'Search: company name', online: <http://www.scheepvaartwest.be/CMS/index.php/fishing-boats/>, viewed in February 2018; Vlaams Instituut voor de Zee (n.d.), 'Belgische Zeevisserij Fleet Database, Search on immatriculatienummer', http://www.vliz.be/cijfers_beleid/zeevisserij/ship.php?id=, viewed in February 2028.

The remainder of this section provides company structure analyses of three Belgian fishing companies/families that operate two or more vessels.

3.3.1. Desmit

The Desmit Family owns three demersal cutters in the small coastal fleet segment (main engine < 221 kW). One vessel is owned through BVBA Aran, the other two vessels are owned through BVBA Lucien Desmit (see Figure 3).

Figure 3: Desmit Family company structure

Source: Rederscentrale (n.d.), "Ledenlijst", online: <http://www.rederscentrale.be/index.php?page=organisatie&categorie=13&lang=ned>, viewed on, 12 February 2018; Staatsbladmonitor (n.d.), 'Search: company name', online: <https://www.staatsbladmonitor.be/bedrijfsfiche.html>, viewed in February 2018.

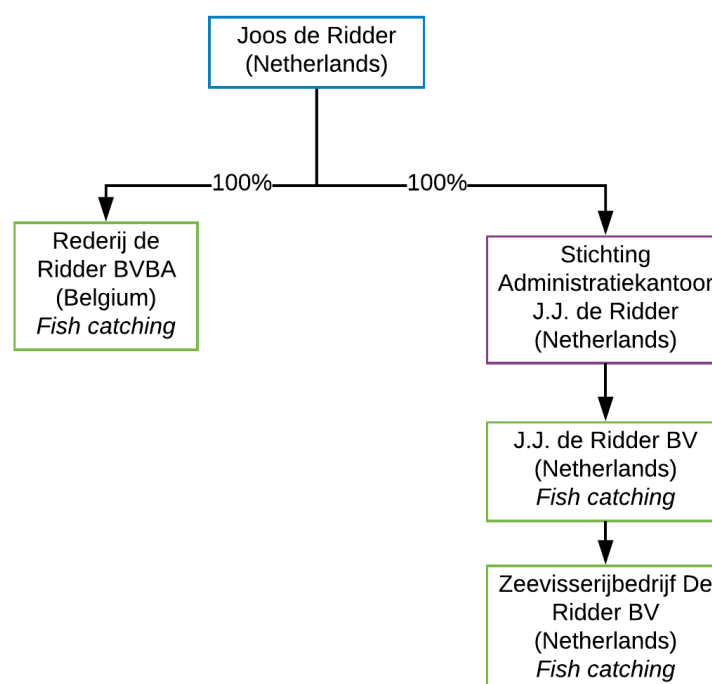
The Desmit family’s operations show indications of horizontal integration through the ownership of multiple fishing vessels. However, they have not engaged in vertical integration, likely as they focus primarily on demersal species which are generally not subjected to industrial scale processing.

3.3.2. De Ridder

Fisherman Joos De Ridder owns three demersal cutters in the small coastal fleet segment (main engine < 221 kW) in Belgium. The immediate owner of the vessels is Rederij de Ridder BVBA (see Figure 4). They mainly target Langoustine (Norway lobster).

In the Netherlands Joos de Ridder operates two more fishing vessels through the companies J.J. de Ridder Beheer BV (Urk) and Zeevisserijbedrijf De Ridder BV (Urk) (KvK, 2018a).

Figure 4: De Ridder Family company structure

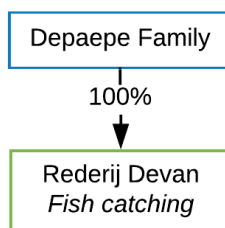


Source: Rederscentrale (n.d.), “Ledenlijst”, online: <http://www.rederscentrale.be/index.php?page=organisatie&categorie=13&lang=ned>, viewed in February 2018; Staatsbladmonitor (n.d.), “Search: company name”, online: <https://www.staatsbladmonitor.be/bedrijfsfiche.html>, viewed in February 2018.

Joos de Ridder has engaged in horizontal interation. He operates vessels in both the Netherlands and Belgium. Moreover, he operates multiple vessels in each of these countries. The primary focus on demersal species explains why he has not engaged in vertical integration.

3.3.3. Depaepe

The Depaepe Family owns two demersal cutters in the large coastal fleet segment (main engine > 221 kW). The two vessels, with a main engine of 1200 kW, are among the largest vessels in the Belgian fleet.

Figure 5: Depaepe Family company structure

Source: Rederscentrale (n.d.), "Ledenlijst", online: <http://www.rederscentrale.be/index.php?page=organisatie&categorie=13&lang=ned>, viewed on, 12 February 2018; Staatsbladmonitor (n.d.), 'Search: company name', online: <https://www.staatsbladmonitor.be/bedrijfsfiche.html>, viewed in February 2018.

The Depaepe Family has engaged in horizontal integration through its fleet expansion. Given its main target is demersal species, it has not engaged in vertical integration.

3.4. Integration

Horizontal integration has taken place within the Belgian fish catching segment, as a number of stronger enterprises took over fishing vessels in order to acquire the licenses (de Groote, 2018). The vessel whose license is transferred to an existing vessel in the company group is then decommissioned, used for other purposes, or sold abroad (ibid.). In cases where two licenses are put on one vessel, horizontal integration has led to reduced employment (ibid.). However, as these companies have more quota rights, they can generate more income (ibid.). Horizontal integration has not had an impact on fish prices, which are driven by the market.

Notable is the significant level of foreign investment in Belgian fisheries, applying to 34% of the fleet. Belgian fishermen do not have the capital resources to invest abroad (de Groote, 2018). The Belgian government has put in place measures to ensure that the Belgian fisheries segment continues to benefit from fish catching, even though there is such a high level of foreign ownership (ibid.). One of these measures is the regulation stipulating that at least 50% of Belgian catch is sold directly at Belgian auction (ibid.). In practice this means that Dutch fishermen owning and operating Belgian vessels which often land in the Netherlands transport their catch by road to auction in Belgium (ibid.).

There is no evidence of vertical integration in the Belgian seafood industry. This is primarily due to Belgian fishermen targeting demersal species which are generally subject to industrial scale processing.

4. BULGARIA

KEY FINDINGS

- **Vertical** integration has taken place
- **There is a high** degree of **value adding** through **processing**
- **No horizontal** integration was identified
- **Bureaucratic regulatory environment**, regulatory **uncertainty**, and **limited fish resources have restricted development**

4.1. Composition of the Bulgarian seafood sector

In 2015, Bulgarian fishing companies generated € 5 million in landings income. Processing companies generated € 63 million in 2016 (see Table 13).

Bulgaria had a trade deficit in fish and fish products of € 26 million in 2016. It imported € 89 million worth of fish, but only exported € 63 million. Its main fish import partners were Denmark (12%), Greece (11%) and Spain (10%). Bulgaria exported 33% of its fish to Sweden, 19% to Romania, and 12% to South Korea. 71% of its fish exports were to EU member states, while 79% of its fish imports originated in other EU countries.

Even though Bulgaria's landing income is relatively small, in 2017 it had a fleet of 1,897 vessels operated by 1,828 companies. 68% of the fleet was active. 6% of the companies own more than one vessel. The low average tonnage is an indication of predominantly small-scale fishing companies.

Fishing companies employed 608 fte in Bulgaria in 2015. The fish processing segment with 1,482 fte employed more than twice as many in the same year.

Table 13: Bulgarian seafood sector key figures

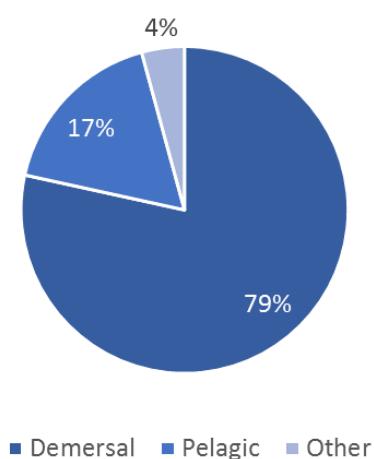
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2017)	1,897	
	Active vessels (2017)	1,295	68%
	Average vessel tonnage per vessel (2015, GT)	3	
	Average vessel tonnage per enterprise (2015, GT)	3	
<i>Enterprises</i>	Number of fishing enterprises (2015)	1,828	
	Enterprises with more than one vessel (2015, number, % enterprises)	109	6.0%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	5	0.01%
	Average landing income per fte employed (2015, €)	8,097	
	Average landing income per vessel (2015, €)	2,486	
	Average landing income per enterprise (2015, €)	2,691	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	608	0.02%
	Average employment per vessel (2015, fte)	0.3	
	Average employment per enterprise (2015, fte)	0.3	
Processing	Processing production (2016, € mln, % GDP)	63	0.13%
	Employment in the fish processing sector (2015, fte, % workforce)	1,482	0.05%
	Average processing production per fte employed (2015, €)	42,443	

Segment	Measure	Value	Proportion
Trade	Trade balance (2016, € mln, % GDP)	-26	0.05%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	63	0.13%
	1. Sweden (2016, € mln, % export)	21	33%
	2. Romania (2016, € mln, % export)	12	19%
	3. Korea, Republic Of (2016, € mln, % export)	7	12%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	89	0.18%
	1. Denmark (2016, € mln, % import)	11	12%
	2. Greece (2016, € mln, % import)	10	11%
	3. Spain (2016, € mln, % import)	9	10%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

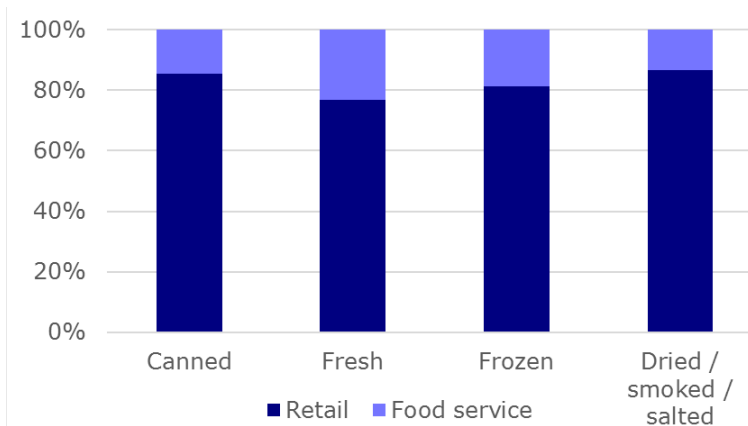
The registry shows that there are 101 vessels above 12 metres, and only 24 vessels above 20 metres in length. There are only two quotas active on Bulgarian catch – for turbot (57 tonnes) and sprat (approximately 8,000 tonnes) (Undercurrent News, 2018d). Together this constitutes less than 10% of the total catch in Bulgaria. Moreover, the sprat quota is never reached (Gospodinov, 2018).

Figure 6: Catch per segment (2017)



Source: IARA (2017, July), *Vessel registry*, online: http://iara.government.bg/?page_id=6, viewed in May 2018.

The production of fish and fish products in Bulgaria increased by slightly over 4% in value in 2015 to almost € 54 million. Of this, 62% (€ 33 million) was realized abroad and the growth of overseas sales compared to the previous year was 4.8%. A major segment with a share of 44% of total revenues continued to be shellfish. Ninety-six percent of this production was exported, making the segment the most export-oriented. In Bulgaria, more than three quarters of fish and fish products end up in the retail sector (see Figure 7). The likely customers are Metro Cash and Carry, Billa, Fantastiko, Carrefour, Kaufland, and 345. A quarter of fresh fish is sold to the food service sector.

Figure 7: Bulgaria: Fish product end industry

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

That majority of fresh fish is sold unbranded (see Table 14). Canned fish in Bulgaria is mostly sold as branded products. Frozen fish is sold as both unbranded (45%) and branded (45%). Own brands account for around 10% in all categories.

Table 14: Bulgaria: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	6%	70%	45%	43%
Unbranded	78%	20%	45%	44%
Artisanal	7%			3%
Own label	10%	10%	10%	10%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

The Bulgarian fish product market is dominated by local brands. Important brands for fresh fish include Atlantik AD with a market share of approximately 15% of the fresh segment, and Chernomor Burgas with around 13% (FFT, 2018). Atlantik AD also holds a share of around 20% in the frozen fish segment of the country (ibid.). In the canned segment, Slavjanka is a key brand with a market share of approximately 17%, Saupiquet (part of Bolton Group (Netherlands)) accounts for around 9% of canned fish (ibid.). Atlantik AD also holds a share of around 12% of the dried/smoked/salted fish segment in Bulgaria (ibid.).

4.2. Producer organisations

Bulgaria has no recognized producer organisations. However, there are two associations that represent the fishing sector. The largest of these is called BGFish. It has 76 member vessels (6 are sub-rented from other companies), and a total of 34 member companies. 25 large ships are members of the association. It receives 12 tonnes of the turbot quota and represents both fishermen and processors (Gospodinov, 2018).

The BGFish board of executives is formed by the CEOs of the largest integrated companies. In an interview, the CEO of BGFish – Yordan Gospodinov – stated that the association is the biggest producer organization active in Bulgaria with the largest catch. It represents several production plants, the only fish exchange in the country as well as several import and export firms. The producer association offers no direct marketing, but supports its members, for example in assisting them to obtain finance (Gospodinov, 2018).

Gospodinov is predominantly positive about the introduction of EU regulation and quotas. The sector is prospering although 20% to 25% of all Bulgarian capacity had to be scrapped as the vessels could not match EU regulations (ibid.).

The second association is Chernomorski Izgrev (Blacksea Sunrise). It organises 45 mid-sized vessels of 10 to 20 metres length. These receive 25 tonnes of the turbot quota.

With 80%, the Bulgarian sector is predominantly engaged in demersal fishing. The quota distribution is largely based on historical catch and quotas are not transferable. The two associations jointly receive approximately 65% of the national quota, which they distribute to members. A member of one association cannot leave it to join the other association and keep his quota (ibid.). The government distributes the remaining quota. The distribution is largely based on historical catch. Quotas are not transferable (ibid.).

4.3. Company analysis

36 companies are registered as fish and fishery products in Bulgaria. There are no publicly listed companies on the Bulgarian stock exchange employed in the fishing sector. There are some joint stock enterprises, with just a few owners. The largest companies in the sector are family owned. There are also a large number of sole proprietorships, i.e. fishermen, usually with a single small boat (IARA,2017).

The overall turnover of the top 25 companies active in the Bulgarian sector in 2016 was 6.5% higher than in 2015. The export value of these companies increased by 14%. The top 25 companies account for 97% of total sales of Bulgarian fish products in 2016 (Capital.bg, 2017).

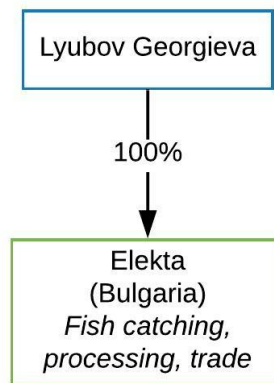
Many of the key companies operating in the fish catching segment have invested in processing plants. It is very likely that a large part of the country's catch is processed by the few key actors selected here. All of them have processing capacity.

According to the directors of the two producer associations in Bulgaria, among the largest companies with a catching division are Elekta, Chernomorski ribolov Burgas, Ding Pavlovi & Sie, Nesebar Fish and Morski Ribolov Nesebar. The sixth largest company, Sever-Export, was identified in a recent market review. All these companies have a processing plant as well as their own fleet.

4.3.1. Elekta

Elekta is a family owned business with several subsidiaries. All are majority owned by Lyubov Georgieva. Detelin Valisev Tzvetanov is a minority owner. With revenues of € 3.4 million the company ranked 3rd in 2016 (Capital.bg, 2017a). It engages in catching, processing, storage and trade of fish and fishery products. Elekta first had a processing plant and then entered the fish catching segment to guarantee supply (Georgieva, 2018). A substantial part of its business is shellfish processing. More than 90% of the company's products are exported. Key destinations are in Asia and America (Capital.bg, 2017).

CEO Georgieva states that integration has benefited the company (Georgieva, 2018). It has become more efficient and costs are lower (ibid.). However, the company is not yet 100% integrated, as it considers this to be risky (ibid.). While operating its own fishing fleet, the company purchases about 50% of the catch it needs from external suppliers. This allows for more flexible responses to market demands (ibid.).

Figure 8: Elekta company structure

Source: Georgieva, L. (2018, March 22), *Owner of Elekta, Interview with Milena Levicharova of Profundo.*

4.3.2. Chernomorski ribolov Burgas

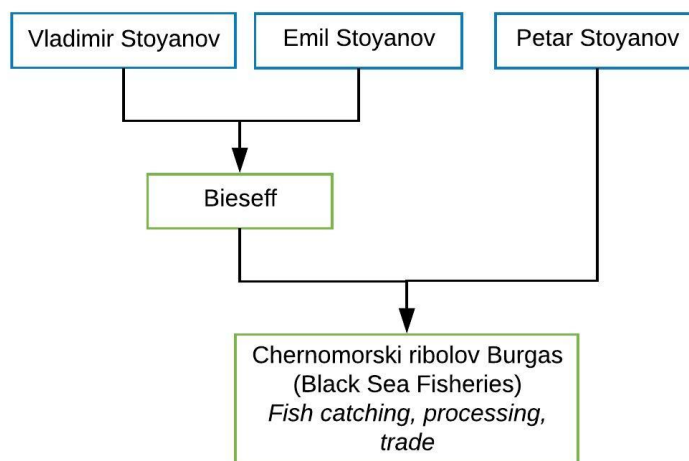
Chernomorski ribolov Burgas ("Black Sea Fishing - Bourgas") is privately-owned and family operated. Owned by Vladimir Stoyanov and Emil Stoyanov through their company "Bieseff" and their father Petar Stoyanov. In 2016, it generated revenues of € 560,000, a decrease by 56.6% from the previous year due to a decrease in exports (Capital.bg, 2017a).

It is engaged in trawling, freezing, processing, cold storage, transportation and trade of frozen seafood on the domestic and international markets as well as import and export from and to the European Union and third countries. The company operates two trawlers and 18 other vessels (Stoyanov, 2018). The company has renewed a modern processing plant (ibid.). 70% of raw materials is caught by own vessels, the remainder is bought from external parties, mostly Romanian suppliers (ibid.). Chernomorski ribolov Burgas produces and offers a wide range of frozen, dried, smoked, dried and pickled products and is the owner of the "Perla" brand. 80% of Chernomorski ribolov Burgas' production is exported, mostly to France and Spain (ibid.). Chernomorski ribolov Burgas domestic clients include large supermarkets, e.g. Fantastiko, Kaufland and other distributors, and some wholesalers (ibid.).

According to CEO Stoyanov the company's costs are optimized because of integration (ibid.). Chernomorski ribolov Burgas is more competitive both domestically and internationally due to vertical integration (ibid.). Higher foreign prices help to cover the company's costs (ibid.). But Chernomorski ribolov Burgas is also in close contact with its key competitors. "We represent the industry and often have common interests, so we stand together and cooperate (Stoyanov, 2018)."

The company has undergone significant optimization and automation in its processing plants, however, no workers have been laid off (Stoyanov, 2018). Employees have become more highly skilled. In fact, the company has increased the size of its workforce alongside integration and processing optimization (ibid.). Quotas have not had an impact on Chernomorski ribolov Burgas' business as it targets non-regulated species (ibid.).

Figure 9: Chernomorski ribolov Burgas company structure

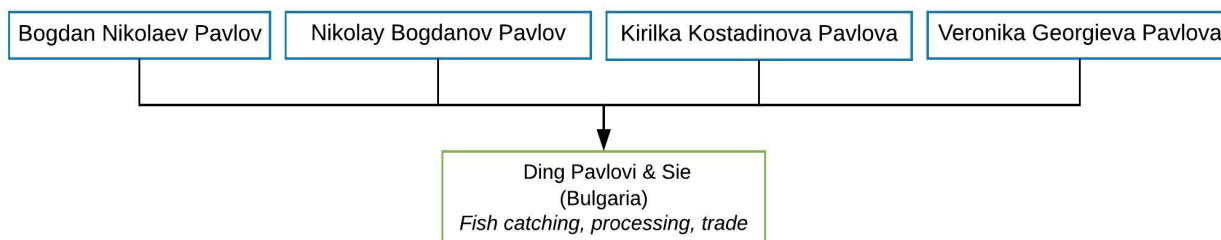


Source: Stoyanov, V. (2018, March 27), *Owner of Chernomorski ribolov Burgas, Interview with Milena Levicharova of Profundo.*

4.3.3. Ding Pavlovi & Co

Ding Pavlovi & Co is a leading exporter of Black Sea sprat from Bulgaria to other EU countries, namely Spain, the UK and Romania. The company owns five trawlers and is specialized in fishing, producing and trading frozen, breaded, salted and marinated Black Sea Sprats. The company states to run one of Bulgaria’s most modern factories for processing and freezing of fish. Besides frozen sprat it also offers frozen bluefish, anchovies, horse mackerel, red mullet as well as breaded, marinated, glazed and floured products. Moreover, it produces whitebait and blanchbait for the UK market (Ding Fish, n.d.). Its revenues reached € 700,800 in 2016, of which approximately 60% were derived from exports (Capital.bg, 2017a).

Figure 10: Ding Pavlovi & Co company structure



Source: Orbis (2018, October), “Current shareholders: Ding Pavlovi & Sie”, viewed in October 2018; Orbis (2018, October), “Current subsidiaries: Ding Pavlovi & Sie”, viewed in October 2018.

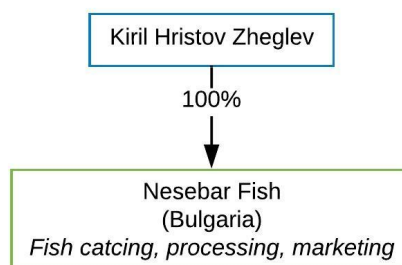
4.3.4. Nesebar Fish

Nesebar Fish is engaged in catching, processing and marketing of fish and fish products. It also has positions in the meat market and is exports to a number of neighbouring countries. Nesebar Fish owns the biggest fishing vessel in the country. It later developed a fish processing factory, as well as a distribution network with cold transport and storage (Geglev, 2018).

CEO Geglev says that the company is not more competitive than other integrated businesses but that it is in a better situation than small-scale fishermen. No Bulgarian company can compete with other EU integrated fishing companies (ibid.).

Geglev states that earnings are down, barely enough to cover expenses. The CEO does not see a positive future for his company under the regulatory and fishing conditions in Bulgaria. *"If someone would just come and buy my ship and the factory I would sell immediately. There's no fish. There are no scientific studies why ... Uncertainty in regulation, bans or laws is a big problem; requirements are ambiguous and multiplying; instead of just adopting direct EU regulations, which would be preferable"* (Geglev, 2018).

Figure 11: Nesebar Fish company structure

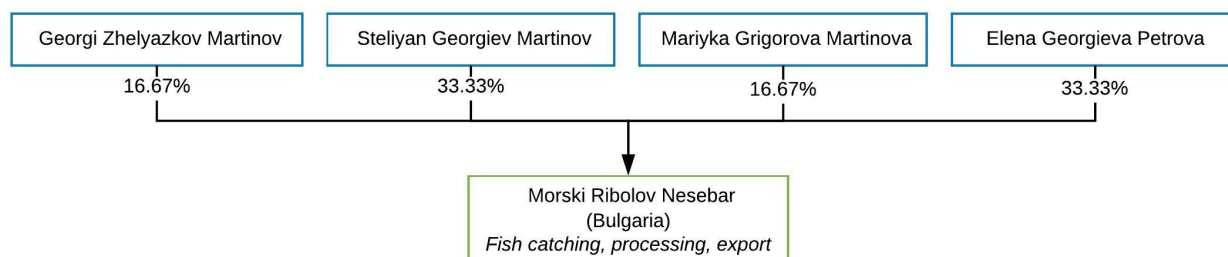


Source: Orbis (2018, October), "Current shareholders: Nesebar Fish", viewed in October 2018; Orbis (2018, October), "Current subsidiaries: Nesebar Fish", viewed in October 2018.

4.3.5. Morski Ribolov Nesebar

Morski Ribolov Nesebar is a family enterprise. It operates a fishing vessel, fish processing plant and distribution network. Morski Ribolov Nesebar also exports its products. The main target species is sprat. In 2016, the revenue of the company declined by 35% in comparison to the previous year to € 734,000 (Capital.bg, 2017a). It is owned by Georgi Zhelyazkov Martinov, Steliyan Georgiev Martinov, Mariyka Grigorova Martinova, and Elena Georgieva Petrova (see Figure 12).

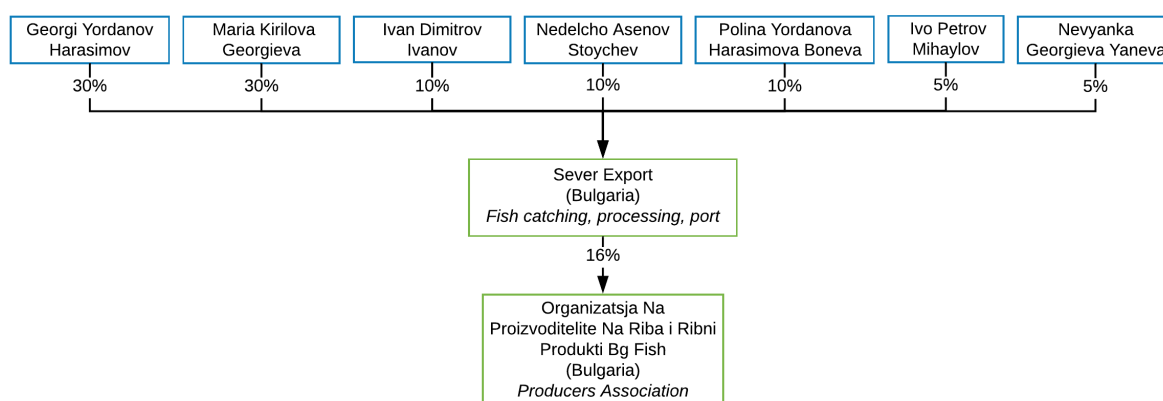
Figure 12: Morski Ribolov Nesebar company structure



Source: Orbis (2018, October), "Current shareholders: Morski Ribolov Nesebar", viewed in October 2018; Orbis (2018, October), "Current subsidiaries: Morski Ribolov Nesebar", viewed in October 2018.

4.3.6. Sever Export

Sever Export was the 2nd largest company by income in the Bulgarian fisheries sector in 2016 with a turnover of € 5 million. It has a wide portfolio, but the main share of its revenue is the export of frozen meat from rapanas (an invasive, carnivorous sea snail) with a share of 77%. The company operates a fishing port, fishing vessels, a seafood processing factory, and cold storage. In addition, it imports, processes and markets fish fillets. It manufactures marinated and smoked products with the brands "Sever Export" and "Varna Fish". It is owned by seven individuals, including the children of founder Jordan Harassimov. It is managed by one of the shareholders - Nedelcho Asenov Stoychev (Capital.bg, 2017a). Besides their own stores, key customers are supermarket chain Billa and Metro Cash and Carry, next to other shops, restaurants and hotels. It owns four fishing vessels and works with 12 other vessels on a long-term contractual basis (Sever Export, n.d.).

Figure 13: Sever Export company structure

Source: Orbis (2018, October), "Current shareholders: Sever Export", viewed in October 2018; Orbis (2018, October), "Current subsidiaries: Sever Export", viewed in October 2018.

4.4. Integration

Based on the findings in section 4.3 as well as expert interviews, it can be observed that the Bulgarian fishing sector is showing strong signs of vertical integration (Dimitrov, 2018; Georgieva, 2018). Many of the key companies active in the fishing sector have developed processing plants (Gospodinov, 2018). In contrary to that, no sizeable horizontal integration has taken place (Dimitrov, 2018; Geglev, 2018; Georgieva, 2018; Gospodinov, 2018). One interviewee noted that "Bulgarians don't have the mentality to do that [horizontally integrate]" (Gospodinov, 2018). The lack of horizontal integration means that Bulgarian fishing companies are not competitive and are less present on international markets than players from other EU countries (Gospodinov, 2018).

This lack of horizontal integration is caused by three factors: a lack of capacity / catch limits, the regulatory environment, and regulatory uncertainty. Overall, the Bulgarian fleet has been downsized. This was driven by EU regulations, as 25% of Bulgaria's fleet could not meet EU standards. Consequently, vessels were scrapped (Gospodinov, 2018). Furthermore, there are limits on fish resources, meaning that capacity – and therewith fleet sizes – cannot be increased (ibid.). To increase capacities, old boats are scrapped, and their permits collected on a new vessel with larger capacity (ibid.). However, this is quite rare (ibid.). Moreover, according to the CEO of the biggest fishing sector association, BGFish, there is insufficient quota. In his opinion, the turbot quota should be tripled to be adequate and should be distributed more fairly. Furthermore, BGFish wants to be an EU recognized PO, but the government is blocking them (Gospodinov, 2018).

The regulatory environment also seems to play a role in preventing companies from increasing their fleet sizes or adjusting the composition of their fleets. As put by the CEO of BGFish, the "bureaucratic machine of Bulgaria" makes it difficult and expensive for fishermen to run their business (Gospodinov, 2018). The owner of Nesebar Fish describes huge problems with Bulgarian legislation, namely that "there isn't any", but what little there is, is a big hurdle for the sector (Geglev, 2018). Uncertainty in regulation, bans or laws is experienced as a big problem. Requirements are ambiguous and multiplying, instead of simply adopting direct EU regulations (ibid.). Stoyanov of Chernomorski ribolov Burgas similarly decries the large legal/regulatory uncertainty calling it a "big hurdle" for further development (Stoyanov, 2018). He states that government decisions are taken without implementing necessary research and studies and are often completely unjust and unjustified (ibid.). He concludes that decisions on government level actually accommodate and stimulate the grey economy (ibid.). Gospodinov state that the EU legal framework concerning fisheries

is not adopted in Bulgaria, which he believes is a massive impediment for the sector (Gospodinov, 2018). The CEO of Elekta would also prefer to see the EU frameworks completely implemented in Bulgaria, because currently there is considerable unclarity in the Bulgarian legislation (Georgieva, 2018). He states that EU membership has thus far already brought some transparency and order, but more needs to be done to create an attractive investment climate (ibid.).

All respondents agree that there is a need for more horizontal and vertical integration in the Bulgarian sector. Geglev states that “there is complete need of integration” (Geglev, 2018). The reason Nesebar Fish developed its processing plant was that there were no buyers for its catch. With the processing plant access to the retail and food service markets could be established (ibid.). Integration and the development of larger enterprises will give Bulgarian fishermen more direct access to big supermarket chains, which demand fixed quantities on a daily basis (ibid.). A lack of integration or sufficient size means that fish catching companies cannot guarantee that they can meet these fixed quantity demands. In addition, it is cheaper to integrate as it takes away the need for middleman and thus decreases costs (Stoyanov, 2018).

The CEO of BGFish, Gospodinov, notes the positive effects of companies that have integrated. *“They are better off. They have managed to attract very educated and western educated personnel and some visionaries. They have new ideas. I think this has impacted the entire industry. I have seen the uniforms and the people on the fishing boats, I see them changing for the better. I have seen better equipment and higher standards. Export companies are faring best for sure, as they sell at international prices while producing at low local costs”* (Gospodinov, 2018).

5. CROATIA

KEY FINDINGS

- **Large number** of fishing **vessels** and **enterprises**, **low** levels of landings **income**
- **No horizontal** integration
- **Limited vertical** integration through **cooperatives**

5.1. Composition of the Croatian seafood sector

Croatian fishing companies earned € 61 million from landings in 2015. Processing companies in Croatia generated a further € 97 million in 2016. Compared to other countries in this study, there is a slightly lower degree of value adding in the Croatian seafood value chain. This is likely because there is less fish processing in the Croatian seafood value chain, as fishermen target mainly demersal species that are generally sold fresh and not subject to industrial scale processing.

Croatia maintained a slight trade surplus of € 54 million in fish trade in 2016. It exported produce with a value of € 177 million, while imports had a value of € 123 million. Croatia's main export destinations are Italy (33%), followed by Japan (14%) and Slovenia (13%). 66% of the country's fish and fish product exports were to other countries in the EU. The country mainly imported fish from Spain (23%), Italy (17%) and Slovenia (7%). 80% of Croatia's fish and fish product imports were from EU Member States.

There were 7,489 registered commercial fishing vessels in Croatia in 2015. These belonged to 6,180 enterprises, with 12.7% of the enterprises operating more than one vessel. Out of 5,280 active vessels, 4,292 vessels are small-scale and 988 large-scale vessels (STECF, 2018).

Fishing companies employed approximately 2,384 fte, 0.15% of the workforce. In contrast to countries such as Belgium (Chapter 3) and Sweden (Chapter 24), the Croatian fish processing segment employed fewer workers (1,149 fte) than the fish catching segment.

Table 15: Croatian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	7,849	
	Active vessels (2015)	5,280	67%
	Average vessel tonnage per vessel (2015, GT)	7	
	Average vessel tonnage per enterprise (2015, GT)	9	
<i>Enterprises</i>	Number of fishing enterprises (2015)	6,180	
	Enterprises with more than one vessel (2015, number, % enterprises)	784	12.7%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	61	0.14%
	Average landing income per fte employed (2015, €)	25,557	
	Average landing income per vessel (2015, €)	7,762	
	Average landing income per enterprise (2015, €)	9,858	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	2,384	0.15%
	Average employment per vessel (2015, fte)	0.3	
	Average employment per enterprise (2015, fte)	0.4	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	97	0.21%
	Employment in the fish processing sector (2015, fte, % workforce)	1,149	0.07%
	Average processing production per fte employed (2015, €)	84,073	
Trade	Trade balance (2016, € mln, % GDP)	54	0.12%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	177	0.38%
	1. Italy (2016, € mln, % export)	58	33%
	2. Japan (2016, € mln, % export)	26	14%
	3. Slovenia (2016, € mln, % export)	22	13%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	123	0.26%
	1. Spain (2016, € mln, % import)	28	23%
	2. Italy (2016, € mln, % import)	21	17%
	3. Slovenia (2016, € mln, % import)	9	7%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

5.2. Producer organisations

The European Commission list of recognised producer organisations in the fishery and aquaculture sector mentions three POs in Croatia. However, according to the cooperative Friška Riba these producer organisations function as cooperatives. Friška Riba is a cooperative of over 30 fishing companies. The cooperative is for example involved in the procurement of equipment and tools. In this way fishermen receive the benefits of economies of scale (Zanki Duvnjak, 2018).

Friška Riba is building a fish processing facility for its members. It will operate in the freezing and packing of fish (all landed in Croatia), prawns and mussels for domestic and EU markets – especially Italy, Spain and Slovenia (ibid.).

Another cooperative is Ribarska Zadruga Zadar. It has 15 members with a total of 22 vessels. Among the member companies is Conex Trade, one of the bigger companies in the Croatian fishing industry (see section 5.3.1).

Table 16: Croatia: Recognized producer organisations

Producer organisations	Segment	No. of members
Ribarska zadruga Omega 3 – organizacija proizvođača	Coastal fishing	30
Ribarska zadruga Istra – organizacija proizvođača (OPISTRA)	Coastal fishing	15
Friška Riba	Coastal fishing	21

5.3. Company analysis

The selection of companies included in the analysis is based on a screening of the largest companies active in the fish catching segment in Croatia ranked by total assets.

5.3.1. Conex Trade

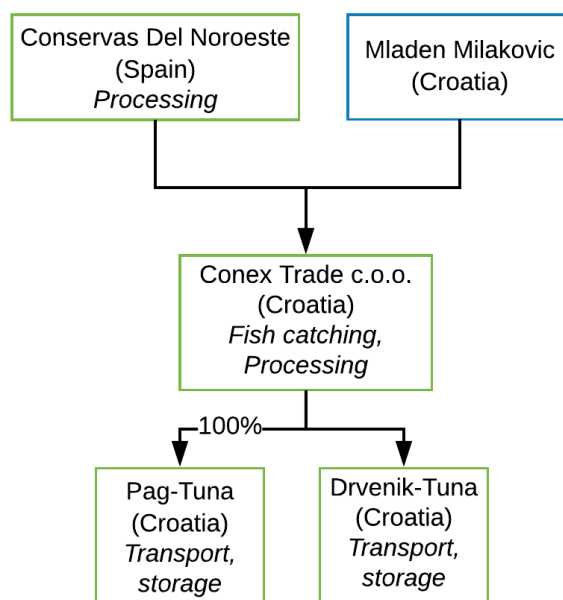
Conex Trade was established in 1989 and is one of the leaders in fisheries and fish processing in Croatia. The company has its own production plant for the processing of tiny blue fish since 2009 and a pilchard canning factory since 2012.

The company owns a fleet of three fishing vessels, and it also cooperates with 25 other fishing vessels in order to assure continuous supply of fresh raw material. The company harvests 8,000 to 10,000 tonnes of fish annually. Its products are mainly sold to the EU market (Conex Trade, n.d.).

As Figure 14 shows, Conex Trade is owned by Croatian businessman and director Mladen Milakovic, and Spanish fish processing company Conservas del Noroeste. Conservas del Noroeste in turn is owned by four Spanish companies and five Spanish businessmen (Orbis, 2018aq). Conservas del Noroeste markets the Cabo de Peñas brand of seafood products (Conservas del Noroeste, n.d.).

In 2016, Conex Trade generated revenues of € 9.6 million. A year earlier it had generated € 9.8 million. In 2016, Conex trade held total assets worth € 11.9 million, a year earlier this was € 13.3 million (Orbis, 2018ar).

Figure 14: Conex Trade company structure



Source: Orbis (2018, April), "Current shareholders: Conex Trade", viewed in April 2018; Orbis (2018, April), "Current subsidiaries: Conex Trade", viewed in April 2018.

Conex Trade is integrated both vertically and horizontally. It has a fleet of three vessels in Croatia, indicating domestic structural horizontal integration. Through its cooperation with other fishing vessels in Croatia it is also engaged in informal horizontal integration. Conex Trade has a processing facility, indicating vertical integration. Moreover, it is also partly owned by Conservas del Noroeste, a Spanish processing company. This indicates further vertical integration, as a proportion of Conex Trade's catch is likely also processed by its parent company and marketed under the Cabo de Peñas brand.

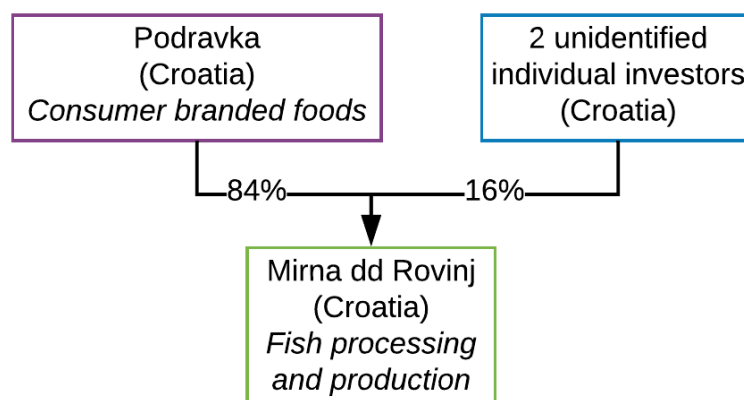
5.3.2. Podravka

Mirna dd Rovinj is a Croatian fish catching and processing company established in 1877. Today, the company operates a factory that employs 150 workers (ibid.). Mirna targets mostly blue fish from the Adriatic Sea, harvesting approximately 3,500 tonnes per year (ibid.). Mirna's product portfolio is based on canned products of sardines, mackerel, tuna, fish pate, fish salad and fish spreads (Mirna, n.d.).

As Figure 15 shows, Mirna is a subsidiary of Podravka – a large consumer branded food products company. Podravka's products include among others, soups, condiments, snacks, children's foods, beverages, salads and cream spreads (Podravka, 2018b). Its fish products – canned tuna, herring, mackerel, and sardines – are marketed under the Eva brand (Podravka, 2018b).

Podravka is a stock listed company traded on the Zagreb stock exchange. Its shareholders include institutional investors, such as pension funds, asset managers, and insurance companies (Thomson EIKON, 2018). In 2016, Podravka generated € 461 million in revenues, the year before it generated € 542 million. In 2016, Podravka held total assets worth € 698 million, down from € 650 million in 2015 (Podravka, 2017).

Figure 15: Podravka company structure

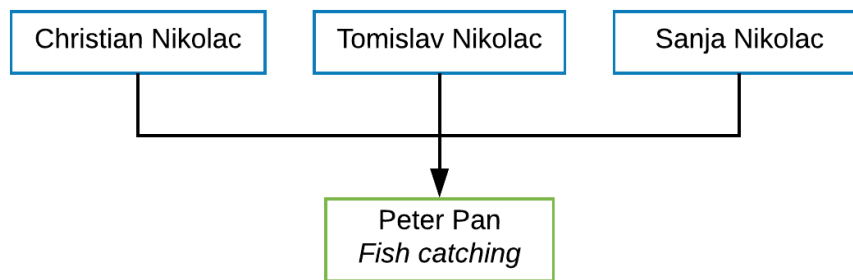


Source: Orbis (2018, April), "Beneficial owners: Mirna dd", viewed in April 2018; Podravka (2017, May), *Annual Report and Consolidated Financial Statements 2016*, p. 69.

The above analysis shows that fish catching, and processing company Mirna is part of a large structurally vertically integrated group.

5.3.3. Peter Pan

Croatian marine fishing company Peter Pan was established in 1989 (Orbis, 2018as). Peter Pan is a family enterprise (Figure 16 with three vessels: Peter Pan, Sjajni and Tarej (Orbis, 2018at). In 2016, the company generated € 2.3 million in revenues, down from € 2.7 the year before. In 2016, the company owned total assets worth € 2.9, down from € 3.1 million a year earlier (Orbis, 2018as).

Figure 16: Peter Pan company structure

Source: Orbis (2018, April), "Current shareholders: Peter Pan", viewed in April 2018.

The above description shows that Peter Pan has engaged in horizontal integration through the expansion of its fleet. However, there are no indications that it has engaged in structural vertical integration.

5.4. Integration

From the above it appears that there is limited vertical and horizontal integration in the Croatian seafood supply chain (Zanki Duvnjak, 2018). Fishermen cooperatives have developed their own processing facilities, allowing members access to processed fish markets. This indicates a degree of vertical integration, though not driven by individual companies.

6. CYPRUS

KEY FINDINGS

- **Aquaculture 3rd most important agricultural export**
- Only **two integrated seafood groups**
- Very **limited fish processing**
- Numerous **restrictions** to further **horizontal integration**

6.1. Composition of the Cypriot seafood sector

Cypriot fishing companies generated € 8 million in landings income in 2015. Processing companies generated € 7 million in revenues in 2012 – the latest year for which figures were available.

Island nation Cyprus had a trade deficit in fish of € 40 million in 2016. It exported € 30 million worth of fish and fish products, while fish and fish product imports amounted to € 71 million. Cyprus' main export destinations for fish and fish products were Israel (70%), Saudi Arabia (5%) and Spain (5%). It imported mainly from Greece (15%), Thailand (7%) and Vietnam (6%). Only 11% of Cyprus' fish and fish product exports in 2016 were to other EU Member States, while slightly more than half of its fish and fish product imports originated in other EU countries.

Cyprus had 905 registered commercial fishing vessels in 2015. These were registered to 840 enterprises. In 2015, there were approximately 790 ftes employed in the fish catching sector in Cyprus. The fish processing sector employed a much smaller workforce of approximately 55 ftes in 2012. The fisheries in Cyprus are dominated by small-scale vessels spread among many landing places (STECF, 2018). The vessels use a variety of fishing gears even in the same fishing trip (ibid.).

Table 17: Cypriot seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	905	
	Average vessel tonnage per vessel (2015, GT)	4	
	Average vessel tonnage per enterprise (2015, GT)	4	
<i>Enterprises</i>	Number of fishing enterprises (2015)	840	
	Enterprises with more than one vessel (2015, number, % enterprises)	2	
<i>Production</i>	Income from landings (2015, € mln, % GDP)	8	0.04%
	Average landing income per fte employed (2015, €)	9,514	
	Average landing income per vessel (2015, €)	8,350	
	Average landing income per enterprise (2015, €)	8,996	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	794	0.23%
	Average employment per vessel (2015, fte)	0.9	
	Average employment per enterprise (2015, fte)	0.9	
Processing	Processing production (2012, € mln, % GDP)	7	0.04%
	Employment in the fish processing sector (2012, fte, % workforce)	56	0.02%

Segment	Measure	Value	Proportion
	Average processing production per fte employed (2015, €)	132,577	
Trade	Trade balance (2016, € mln, % GDP)	-40	0.22%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	30	0.17%
	1. Israel (2016, € mln, % export)	21	70%
	2. Saudi Arabia (2016, € mln, % export)	2	5%
	3. Spain (2016, € mln, % export)	2	5%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	71	0.39%
	1. Greece (2016, € mln, % import)	11	15%
	2. Thailand (2016, € mln, % import)	5	7%
	3. Vietnam (2016, € mln, % import)	4	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

In Cyprus there are three fishing segments (Ioannou, 2018; Petrou, 2018b).

- The trawler sector, both inland fishing (2 trawlers) and high sea trawlers (5 trawlers).
- Purse seine fishing (3 purse seiners) – one for blue fin and two for pelagic species.
- Coastal fishing with 4 to 12 metres boats.

There are also around 35 polyvalent vessels – vessels that are able to use different fishing gears (Ioannou, 2018). These polyvalent vessels can target different species during different seasons (ibid.). There are five companies in Cyprus that have a polyvalent fleet (ibid.).

There are two groups of small-scale fishermen. Full/part-time fishermen account for 327 vessels (Ioannou, 2018). Periodic/seasonal fishermen are only permitted to fish 70 days a year (ibid.). This latter group accounts for 400 fishing vessels (ibid.).

The majority of Cypriot fishermen target demersal species with the coastal fleet (Petrou, 2018b). Nearly all demersal catch is consumed domestically (Ioannou, 2018). Due to a lack of domestic demand, pelagic fish species and albacore are mostly exported – particularly to Spain (ibid.). There is little demand for pelagic fish species domestically. However, demersal species are often also imported from Greece as domestic demand exceeds supply (ibid.).

In addition to demersal, and pelagic fishing activities, aquaculture is an important segment in the seafood value chain in Cyprus. In fact, aquaculture produce forms the 3rd most important agricultural export from Cyprus (Ioannou, 2018). This makes it more important than wild catch (ibid.). Sea bass and sea bream are the two most commonly farmed fish species (ibid.). Most of the aquaculture production is exported before it undergoes industrial scale processing (ibid.).

6.2. Producer organisations

There are no producer organizations for wild catch fish in Cyprus (Ioannou, 2018; Petrou, 2018b). However, there are three associations of fishermen: trawlers and purse seiners; small-scale fishermen, and; coastal fishermen (Ioannou, 2018).

The European Maritime and Fisheries Fund (EMFF) had promised in 2015 to provide *“incentives [...] to establish fishery producers’ organisations aimed at improving existing organisational structures and ensuring optimal management of seafood product marketing”* (European Commission 2015). However, at present there is still only one producer organisation for aquaculture, the Cyprus Mariculture Association (CMA).

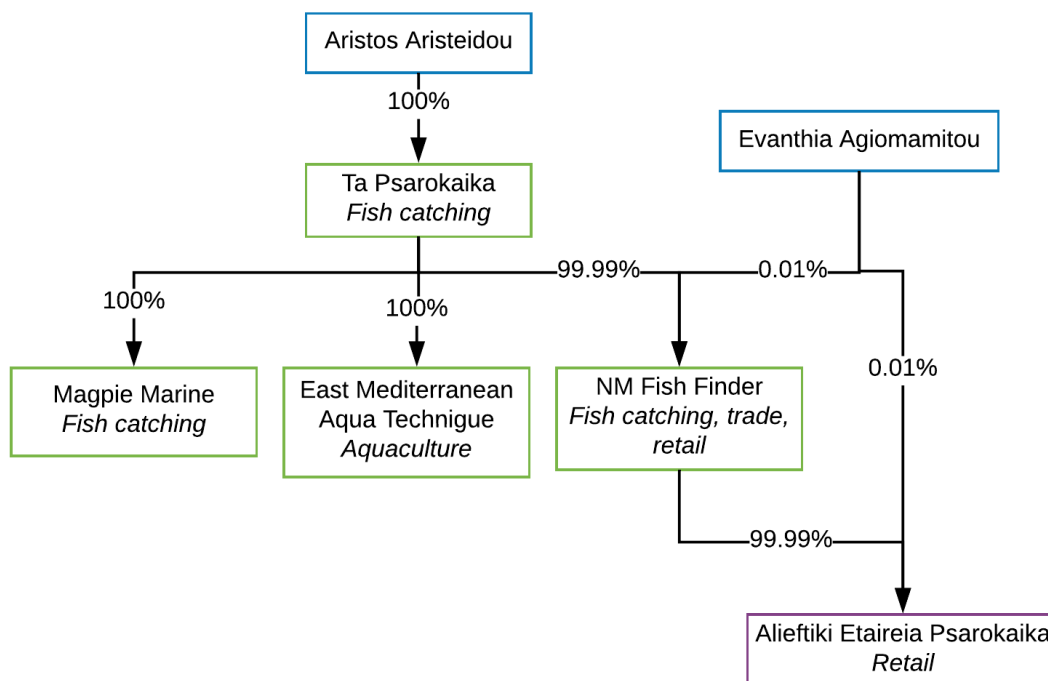
6.3. Company analysis

The companies fishing in national waters with trawlers and purse seiners are Ta Psarokaika (trawlers and purse seine) and Seawave fisheries (trawler). Other companies are single vessel enterprises.

6.3.1. Ta Psarokaika

Ta Psarokaika is one of the biggest fishing companies in Cyprus, fishing with trawlers and a purse seiner (Petrou, 2018b). Apart from both pelagic and demersal fishing its activities also include aquaculture, retail, export and import (Ioannou, 2018; Petrou, 2018b).

Figure 17: Ta Psarokaika company structure



Source: Orbis (2018, August), “Current shareholders: N M Fish Finder”, viewed in August 2018; Orbis (2018, August), “Current shareholders: Alieftiki Etaireia Psarokaika”, viewed in August 2018; Orbis (2018, August), “Current shareholders: Ta Psarokaika”, viewed in August 2018; Orbis (2018, August), “Current subsidiaries: Ta Psarokaika”, viewed in August 2018; Michael, P. (2018, August 16), “Turkish naval vessels harass Cypriot ship in international waters”, *Cyprus Mail Online*, online: <https://cyprus-mail.com/2018/08/16/turkish-naval-vessels-harass-cypriot-ship-in-international-waters/>, viewed in September 2018.

Ta Psarokaika is the only Cypriot company that has five vessels as well as processing facilities (Petrou, 2018b). Most other companies have only one vessel (Ioannou, 2018; Petrou, 2018).

According to Petrou, Ta Psarokaika is a type of conglomerate which makes it difficult for small companies to compete (Petrou, 2018b). It started off as a trawling company and developed its other activities later (Petrou, 2018b). Figure 17 presents the company structure of the Ta Psarokaika group that is owned by Aristos Aristeidou. Financial figures were not available for this company.

The analysis above shows that Ta Psarokaika is both vertically and horizontally integrated. It has business activities all down the seafood value chain in Cyprus from fish catching and processing, to trade and retail outlets. Moreover, it is horizontally integrated with two subsidiaries engaged in fish catching with several vessels as well as aquaculture activities.

6.3.2. Seawave

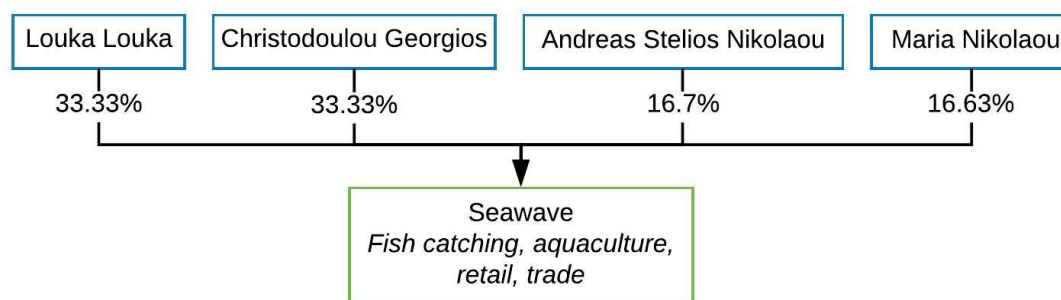
Seawave operates two vessels: a trawler and a purse seiner (Ioannou, 2018; Petrou, 2018b). While the company started as a buyer of fish, its activities now include fish catching, aquaculture, retail and trade (Petrou, 2018b). It states to be among the top four aquaculture companies in Cyprus (Seawave Fisheries, n.d.).

The bigger companies in Cyprus share the sea with the small companies, as the fishing area is not very broad. Already two or three miles away from the coast, the sea is 1000m deep.

In 2016, Seawave generated € 6.3 million in turnover (Orbis, 2018au). This was an increase from € 5 million in 2015 (ibid.). In 2016, the company held total assets of € 5 million, only marginally more than the € 4.9 million a year earlier (ibid.).

Figure 18 shows the company structure of Seawave with its four Cypriot owners.

Figure 18: Seawave fisheries company structure



Source: Orbis (2018, August), "Current shareholders: Seawave", viewed in August 2018; Orbis (2018, August), "Current subsidiaries: Seawave", viewed in August 2018.

From the analyses above it is evident that Seawave, like its peer Ta Psarokaika, has engaged in both vertical and horizontal integration. Seawave has business activities all down the seafood value chain in Cyprus from fish catching and processing, to trade and retail outlets. Moreover, it is horizontally integrated through its two fishing vessels, as well as its aquaculture activities.

6.4. Integration

Beyond the two examples analysed in this chapter, there has only been very limited vertical or horizontal integration in the Cypriot seafood value chain (Ioannou, 2018; Petrou, 2018b). There are only two companies with more than one vessel in Cyprus (ibid.). There has been a reduction in fleet size in the past ten years (ibid.). This was largely driven by the limits on fish catching due to low fish populations (ibid.). The small-scale fishermen fleet saw the largest

reduction, however, also two trawlers were scrapped (ibid.). The scrapping programme was funded by the EU (ibid.).

There are only two or three fish processing companies in Cyprus (Ioannou, 2018). They usually also process other products, including meat (ibid.). Most fish are sold immediately as fresh on landing as the majority of landings are demersal and/or small fish, both not suited for processing (ibid.). Therefore, the composition of landings affects the need and possibility for vertical integration.

The vertical and horizontal integration that Ta Psarokaika and Seawave have engaged in have affected prices (Petrou, 2018b). Particularly Ta Psarokaika's dominant position allows them to sell to the (super)markets for lower prices than others (ibid.). The company also owns fish farms that produce fish at cheaper prices than wild catch (ibid.). This makes the company able to strongly influence the prices (ibid.).

There are a number of limitations to horizontal integration in the Cypriot fish catching segment. These all relate to catch restrictions. Firstly, there is not enough fish in Cyprus waters for companies to expand, or to attract larger companies (Ioannou, 2018). The limitations of the exclusive economic zones (EEZs) of North African countries and Turkey also limit the areas where Cypriot vessels can be active (ibid.). The Cypriot government cannot issue new licenses because there are no fishing grounds (ibid.). Moreover, it is reported that the Turkish navy regularly harasses Cypriot fishing vessels, also in Cypriot own waters (ibid.). These catch restrictions are likely one driver of aquaculture in Cyprus. In addition, the profitability of aquaculture is higher in comparison to wild catch fish. Due to the low economies of scale the latter is subject to higher operating costs.

7. DENMARK

KEY FINDINGS

- Fish landings and processing account for 1.1% of Danish GDP
- 98% single vessel enterprises, 81% small vessels
- **Limited structural vertical integration**
- **Significant structural horizontal integration**
- **High level of foreign investment in pelagic segment**
- Majority of landings sold at auctions and markets
- **Trade in quotas stabilized**, renting and leasing of quotas is common

7.1. Composition of the Danish seafood sector

The fishing industry plays a significant role in the Danish economy (Eurofish, 2015a). Landings and fish processing accounted together for nearly 1% of GDP in 2015 (see Table 18).

In 2015, Danish fishing companies generated € 440 million in landings income, about 0.16% of GDP. Fish processing companies generated a further € 2.6 billion. Fish processing revenue constituted approximately 0.9% of Denmark's GDP 2016.

Denmark reported a € 828 million trade surplus in fish and fish products in 2016. Fish and fish product exports worth € 3.7 billion accounted for 1.3% of Denmark's GDP. 82% of exports were destined for other EU countries, with Germany (20%), France (11%) and Italy (9%) as key recipients. In 2016, Denmark imported fish and fish products worth approximately € 2.9 billion. Only 16% of this originated from other EU countries. The main import partners were Norway (45%), Greenland (16%) and the Faroe Islands (7%).

There were 1,793 registered commercial fishing vessels in Denmark in 2016. Of these, 77% were active. These were owned by 1,363 enterprises. Only 26 enterprises – or approximately 2% – owned more than one vessel (see Table 18). 81% of the Danish fleet consists of small vessels. Vessels >24m account for only 3% of the fishing fleet; however, these large pelagic trawlers account for 63% of total gross tonnage (Eurofish, 2015a). In the last ten years, the number of vessels of >24 metres have dropped more rapidly than the number of smaller vessels. The capacity of the >24 metres fleet has remained stable though. In the same period, the number of 12 to 24 metres vessels has remained stable, having experienced a rapid decline between 1995 and 2006 (Semrau and Ortega Frás, 2013).

The Danish fisheries sector is composed of three segments:

- Demersal fishery for human consumption
- Trawler fishery for industrial use
- Pelagic fishery for predominantly herring and mackerel (Semrau and Ortega Frás, 2013).

50% of the landed fish is destined for human consumption (Eurofish, 2015a). The majority of Danish processing facilities are located in northern Jutland, close to major landing sites such as Thyborøn, Hirtshals and Skagen (ibid.). Together these ports account for almost half of the gross tonnage of the Danish fleet (ibid.). Preserved and canned fish accounts for 57% in value of total processed fish for human consumption (ibid.). Smoked fish accounts for 26% (ibid.). Fish meal and fish oil account for 31% in value of total industrial fish products, and 68% in terms of volume (ibid.).

Herring and mackerel are the two main species harvested in Denmark (Sverdrup-Jensen, 2016). Herring is usually exported to Germany (see Chapter 11), consumed domestically, or, to a lesser degree, exported to other Nordic countries (ibid.). Mackerel is mostly exported to the EU and Japan, according to Sverdrup-Jensen, CEO of DPPO (ibid.).

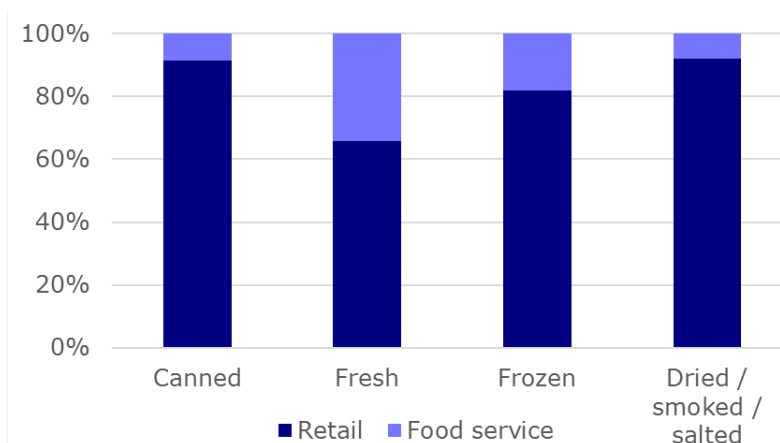
Table 18: Danish seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	1,793	
	Active vessels (2016)	1,374	77%
	Average vessel tonnage per vessel (2015, GT)	36	
<i>Enterprises</i>	Average vessel tonnage per enterprise (2015, GT)	49	
	Number of fishing enterprises (2015)	1,363	
	Enterprises with more than one vessel (2015, number, % enterprises)	26	1.9%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	440	0.16%
	Average landing income per fte employed (2015, €)	280,432	
	Average landing income per vessel (2015, €)	237,850	
	Average landing income per enterprise (2015, €)	323,009	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	1,570	0.06%
	Average employment per vessel (2015, fte)	0.8	
	Average employment per enterprise (2015, fte)	1.2	
Processing	Processing production (2016, € mln, % GDP)	2,566	0.92%
	Employment in the fish processing sector (2015, fte, % workforce)	3,018	0.11%
	Average processing production per fte employed (2015, €)	850,298	
Trade	Trade balance (2016, € mln, % GDP)	828	0.30%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	3,715	1.34%
	1. Germany (2016, € mln, % export)	747	20%
	2. France (2016, € mln, % export)	399	11%
	3. Italy (2016, € mln, % export)	329	9%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	2,887	1.04%
	1. Norway (2016, € mln, % import)	1,307	45%
	2. Greenland (2016, € mln, % import)	450	16%
	3. Faroe Islands (2016, € mln, % import)	212	7%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

43% of Denmark's fish that enters the market is fresh fish. Of this volume, 66% is sold by retailers and 34% is sold in the food service industry (see Figure 19). About one fifth of the fish and fish products in Denmark is canned fish, of which 91% is sold by retailers. Dried/smoked/salted fish accounts for a quarter of all fish and fish products in Denmark. 92% of these products are sold by retailers. Finally, 13% of the fish and fish products are sold as frozen. Of this, 80% is sold through retail, the remainder is sold in the food service industry.

Figure 19: Denmark: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In Denmark, only fresh fish is sold unbranded. Approximately 40% of all fresh fish sold in Denmark is unbranded, 39% is branded and 21% is sold under retailers' own labels (Table 19). Canned, frozen and dried/smoked/salted fish and products are largely sold branded.

Table 19: Denmark: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	39%	81%	83%	81%
Unbranded	40%			
Artisanal				
Own label	21%	19%	17%	19%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Important brands for fresh fish include Havfisk (formerly Aker (Norway)) with a market share of approximately 22% of the fresh segment, and Royal Greenland with around 19% (FFT, 2018). Royal Greenland also holds a market share of around 14% in the frozen fish segment in Denmark, Fregat Fiskeeksport accounts for around 12% of this segment (ibid.). In the canned segment, Amanda Seafoods accounts for approximately 23% of the Danish market (ibid.). Royal Greenland also holds a share of around 21% of the dried/smoked/salted fish segment in Denmark, while Danforel accounted for approximately 17% of this segment (ibid.)

7.2. Producer organisations

There are two producer organisations in Denmark, representing respectively the pelagic and coastal segments:

- Danmarks Pelagiske Producentorganisation (DPPO)
- Danmarks Fiskeriforening Producentorganisation (DFPO)

DPPO represents 11 vessels, while DFPO represents approximately 750.

7.2.1. DPPO

As Table 20 shows, and Sverdrup-Jensen (CEO of DPPO) confirms, DPPO is mainly composed of one-vessel enterprises which are owned by the fishermen themselves. This is based on a Danish regulation, colloquially known as the “boots on board principle”, which states that one third of a fishing vessel must be owned by the skipper, private enterprises can own two thirds of a vessel (Sverdrup-Jensen, 2016).

Table 20: Members of Danmarks Pelagiske Producentorganisation

Company	Vessel name
Astrid Fiskeri	Astrid
	Rockall
Benny Rasmussen	Lingbank
Cattleya A/S	Cattelya
Niels Jensen og Co	Isafold
Nordic Pelagic	Ariadne
P/R Asbjorn	Asbjorn
P/R Beinur	Beinur
Rederiet Gifico ApS	Ceton
Gitte Henning A/S	Gitte Henning
Rederiet Ruth	Ruth

Source: Danmarks Pelagiske Producentorganisation (n.d.), “Vessels”, online: <http://www.dppo.dk/>, viewed in March 2016.

Quotas in Denmark are limited per skipper per vessel. Each company cannot own more than 10% of the Danish, in this case, pelagic quota (Sverdrup-Jensen, 2016). In Denmark, only two companies are close to this limit. These are Gitte Henning and Rederiet Ruth, described below (ibid.). According to Sverdrup-Jensen, these two companies are wholly owned by fishermen (ibid.).

In Denmark, quotas are granted to vessels, not to the Producer Organisation (PO) as is the case in some other countries (Sverdrup-Jensen, 2016). The PO, therefore, has no role in the quota allocation decision-making process. In 2001, the Individual Transferable Quota (ITQ) system was introduced in the Danish pelagic segment (ibid.). Allocation was based on a 10-year reference period (ibid.). After the introduction of the ITQ system, the Danish pelagic fleet decreased from 100 vessels to 20 due to over-capacity (ibid.). However, the capacity of the remaining individual vessels increased (ibid.). When the system was introduced in 2001, there was a crisis in the pelagic sector (ibid.). One reason for this was that the herring stock was severely depleted (ibid.).

The introduction of the ITQ system led to a rapid concentration of quotas (Sverdrup-Jensen, 2016). Many fishermen sold out (ibid.). Those that remained increased the capacity of their vessels and the size of their quotas (ibid.). When the ITQ system was about to be introduced, everyone was aware of the consequences this would have in terms of the reduction of fleet and concentration of quotas (ibid.). It was a “major political decision” (ibid.). There were social costs, but the purpose was to reduce the fleet size (ibid.). With the introduction of the ITQ system, quota prices increased rapidly (ibid.). According to Sverdrup-Jensen, those that sold out made a lot of money, those that sold later made a fortune (ibid.). Those that stayed were the “dedicated fishermen” (ibid.). This seems to be a rather rosy picture. In fact, employment dropped from 4,032 FTE in 2002 to 1,489 in 2013. Estimates of the total number of affected jobs in the sector ranges from 4,552 FTE to 14,241 FTE (Goulding et al., 2000, p. 69; Sea Fish Industry Authority, 2008, p. 6).

Nevertheless, Sverdrup-Jensen states that the ITQ system “saved the sector” (Sverdrup-Jensen, 2016). There is now more stability in the sector (ibid.). The sector has been more profitable for a while now and the return on investment is very quick (ibid.). As an illustration of this, five new vessels entered the Danish pelagic segment in 2016 (ibid.). These replaced vessels that were only years old at the time (ibid.). The new vessels are more efficient and technologically advanced (ibid.). Furthermore, fishermen are spreading their risk by fishing for more and different species and in different fishing areas, and through portfolio expansion (ibid.). Fishermen who used to only fish for the human consumption segment are now also fishing for the industrial use segment (ibid.). In fact, 70% of the pelagic fishermen in Denmark are now fishing for both these segments (ibid.). Additionally, the ITQ system has led to an increase in the number of working days from 240 days in 2001 to 320-330 days in 2016 (ibid.).

7.2.2. DFPO

Table 21 provides an overview of the ten members of the DFPO with more than three registered vessels. 64 members of the DFPO have more than two registered vessels. The remaining 694 only have one registered vessel.

In 2007, the ITQ system was also introduced in the Danish coastal fishing segment (Sverdrup-Jensen, 2016).

Table 21: Members of Danmarks Fiskeriforening Producentorganisation

Company	Vessel name
Gitte Henning A/S	Birgitte Martine
	Birthe
	Myggenes
	Stefenie
	Vestfart
H W Larsen & Sønner I/S	Mågen
	Svanen
	Tejsten
	Ternen
Amy A/S	Bering Sea
	Bigtana
	Maritana
	Mette Kynde

Company	Vessel name
Partsrederiet E61 DI-JE	Di-Je
	Jeppe
	Sine
Tommy Bach	Arkona
	Malle
	Tambosund
Snaptun Muslinger ApS	Freja
	Frigg
	Ydun
L229 Lykke Hametner/ John Anke	Lykke Hametner
	Silje Hametner
	Thingholt
Niels Erik Jensen	Dorte-Ann
	Sarina
	Tuggy
Jens Granlund	Ida
	Paulet
	Tulle
Jørn Martin Larsen	Jannie
	Josefine
	Klump

Source: Danmarks Pelagiske Producentorganisation (n.d.)

7.3. Company analysis

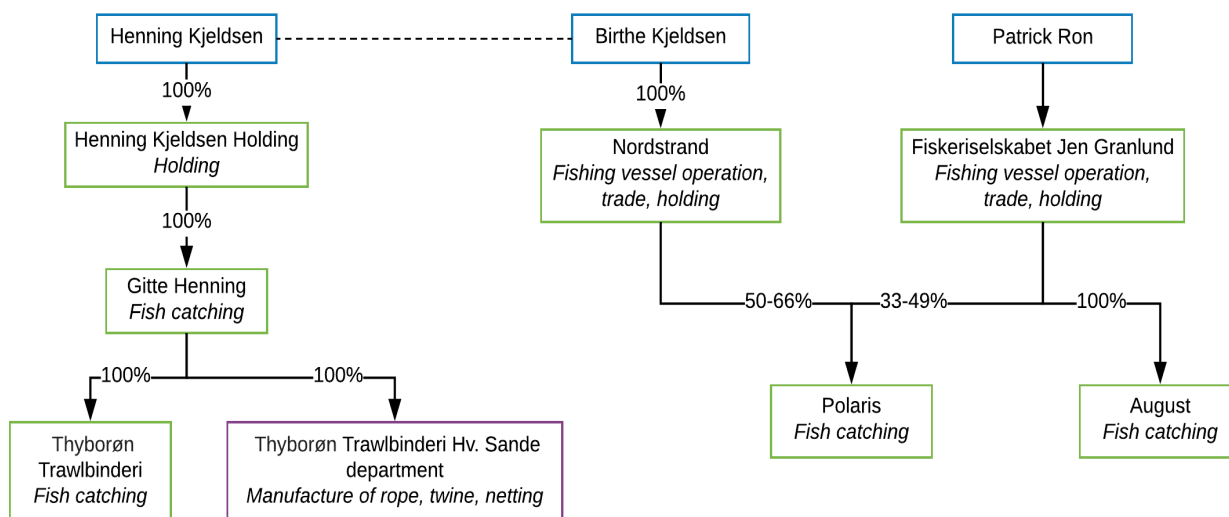
This section provides an analysis of the company structures of six companies in the Danish pelagic and coastal fishing segments. These include for both DFPO and DPPO the three member companies with the highest number of vessels.

7.3.1. Pelagic segment

7.3.1.1. Gitte Henning

As seen from Table 20 and Table 21, Gitte Henning has one vessel in the pelagic and five vessels in the coastal fishing segment. These vessels are members of the segments' respective POs.

Investment company Henning Kjeldsen Holding is the parent company of Gitte Henning (see Figure 20). Entrepreneur Henning Kjeldsen is the full owner of the investment company. Gitte Henning has two subsidiaries: Thyborøn Trawlbinderi is also engaged in fish catching, while the Thyborøn Trawlbinderi Hv. Sande department produces rope, netting, and twine used in fishing.

Figure 20: Gitte Henning company structure

Source: Virk (2016, March), CVR data: Henning Kjeldsen Holding, p. 1; Virk (2016, March), CVR data: Gitte Henning, p. 1; Birgite Lesanner (2015, September 8), "Politianmeldelse: Fusk med fisk for millioner", online: <http://www.greenpeace.org/denmark/da/nyheder/blog/fusk-med-fisk-for-millioner/blog/54015/>, viewed in March 2016; Virk (2016, March), CVR data: Nordstrand Fiskeri, p. 1; Virk (2016, April), CVR data: Fiskeriselskabet Jens Granlund, p. 1; Virk (2016, April), CVR data: August A/S, p. 1; Virk (2016, April), CVR data: HG 352 Polarsi ApS, p. 1.

In 2014, Gitte Henning generated € 18 million in gross profit, down from € 21 million 2013. The company had total assets worth € 174 million in 2014. Approximately € 106 million of this was fish quotas, € 53 million was vessels (Gitte Henning, 2015, p. 9-10). As Gitte Henning is the only subsidiary of Henning Kjeldsen Holding, the holding company reports the same consolidated figures as its subsidiary.

Another fishing company, Nordstrand Fiskeri, owned by Henning Kjeldsen's wife Birthe Kjeldsen, is registered at the same address as Henning Kjeldsen Holding. The company formerly belonged to the father of Henning Kjeldsen, Erik Kjeldsen (Virk, 2016a, p. 1).

The business activities of Nordstrand Fiskeri are noted as trade, the operation of fishing vessels and to act as a holding company (Virk, 2016a, p. 1). It is remarkable that a company with a turnover of approximately € 786,000 and total assets of € 11 million in 2014 has no staff costs (Nordstrand Fiskeri, 2015, p. 9-10). With 0.07 the return on assets (ROA) for Nordstrand Fiskeri is also considerably lower than that of its peers Hiiu Kalur with 0.40 and Kalalaev Kotkas with 0.23. Nordstrand also has "other debts" of approximately € 9.2 million, with no further details (Hiiu Kalur, p. 4-5, p. 31 and Kalalaev Kotkas, 2015, p. 4-5).

The Nordstrand annual report does not contain much detail. For instance, its balance sheet does not refer to its fishing quota or its vessels. However, as the fishing quota is usually the only intangible asset included in the annual reports of fishing companies, it can be assumed that the same is true for Nordstrand. In that case its fishing quota were worth approximately € 11 million in 2015, nearly all of its assets. Fishing companies usually include vessels in the tangible assets category in the balance sheets. In this category, Nordstrand has one sub-category, namely 'plant and machinery'. As vessels are not included in the balance sheet, and the category tangible assets is the logical place to include these, it can be assumed that 'plant and machinery' could have been used to refer to the fishing vessels. If this is the case, then Nordstrand has vessels worth €14,500.

The son of Birthe and Henning Kjeldsen, Røn Patrick, also owns a number of companies engaged in the operation of fishing vessels and commercial fishing. Røn Patrick, and the

companies with which he is affiliated, are registered at the same address as Henning and Birthe Kjeldsen and their affiliated companies (Virk, 2016b, p. 1). Fiskeriselskabet Jen Granlund was established in 2014. In that year, it generated a gross profit of € 37,000, and had total assets of € 343,000. The company had no reported labour costs, similar to Nordstrand Fiskeri (Fiskeriselskabet Jen Granlund, 2015, p. 9-12). It is conceivable that Nordstrand Fiskeri and Fiskeriselskabet Jen Granlund do not have labour costs as they are used as quota swapping and/or renting vehicles.

Wholly owned subsidiary August generated a gross profit of € 1.3 million in 2014, down from € 1.5 million the previous year. August reports labour costs of approximately € 800,000. In 2014, it had total assets of € 6.9 million. The company reports a cost of quota of € 13.5 million; after depreciation and impairments, the quota value is € 5.6 million (August A/S, 2015, p. 10-11, p. 13).

August's sister company Polaris generated a gross profit of € 448,000 in 2014, down from € 605,000 in 2013. In 2014, Polaris had total assets of € 3.4 million. Just over half of this, € 1.8 million, was in fishing quota (HG 352 Polaris ApS, 2015, p. 9-10).

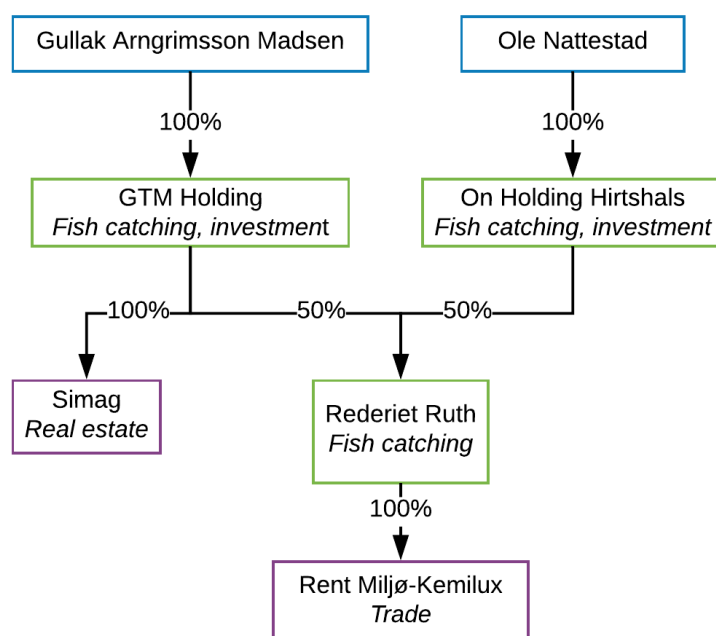
The company structure of Gitte Henning does not show significant evidence of structural vertical or horizontal integration. The main business of the company is fish catching, with one subsidiary producing equipment used in fisheries.

However, the findings suggest non-structural integration through cooperation between the companies owned by Henning Kjeldsen, his wife Birthe Kjeldsen and their son Røn Patrick. It is possible that Nordstrand Fiskeri, Fiskeriselskabet Jen Granlund and their subsidiaries are used as vehicles to purchase quotas which are then rented out to Gitte Henning in order for the quota owned by Gitte Henning to remain below 10% of the national quota as legally stipulated, while still allowing the company to increase its harvesting capacity (Scheller, 2016).

7.3.1.2. Rederiet Ruth

As seen from Table 20, Rederiet Ruth has a vessel in the pelagic fishing segment (Sverdrup-Jensen, 2016). The spokesman from DPPO stated that Rederiet Ruth is one of the largest fishing companies in Denmark in terms of quota ownership. Figure 21 0 provides an overview of Rederiet Ruth's company structure. The company has two owners, Gullak Arngrimsson Madsen and Ole Nattestad, who invest in the company through investment holding companies. Gullak Arngrimsson Madsen's investment vehicle is also engaged in real estate. Ole Nattestad's investment vehicle does not report any other investments.

Rederiet Ruth has one full subsidiary that is engaged in trade. The group generated a gross profit of € 20 million in 2014, with a similar level in 2013. The group had total assets worth € 125 million in 2014. Of this, € 79 million was fishing quotas, and € 17 million was fishing vessels (Rederiet Ruth, 2015).

Figure 21: Rederiet Ruth company structure

Source: Virk (2016, March), CVR data: Rederiet Ruth Holding, p. 1; GTM Holding (2015, June), Annual Report 2014, p. 4, 27; Rent Miljø-Kemilux (2015, June), Annual Report 2014, p. 11; Simag Aps (2015, June), Annual Report 2014, p. 13; ON Holdings Hirtshals Aps (2015, June), Annual Report 2014, p. 12. Rederiet Ruth (2015, June), Annual Report 2014, p. 19.

Rederiet Ruth shows evidence of vertical integration, through its subsidiary engaged in trade. The trade is, therefore, likely to be in fresh caught and frozen fish and seafood, rather than processed.

7.3.1.3. Astrid Fiskeri

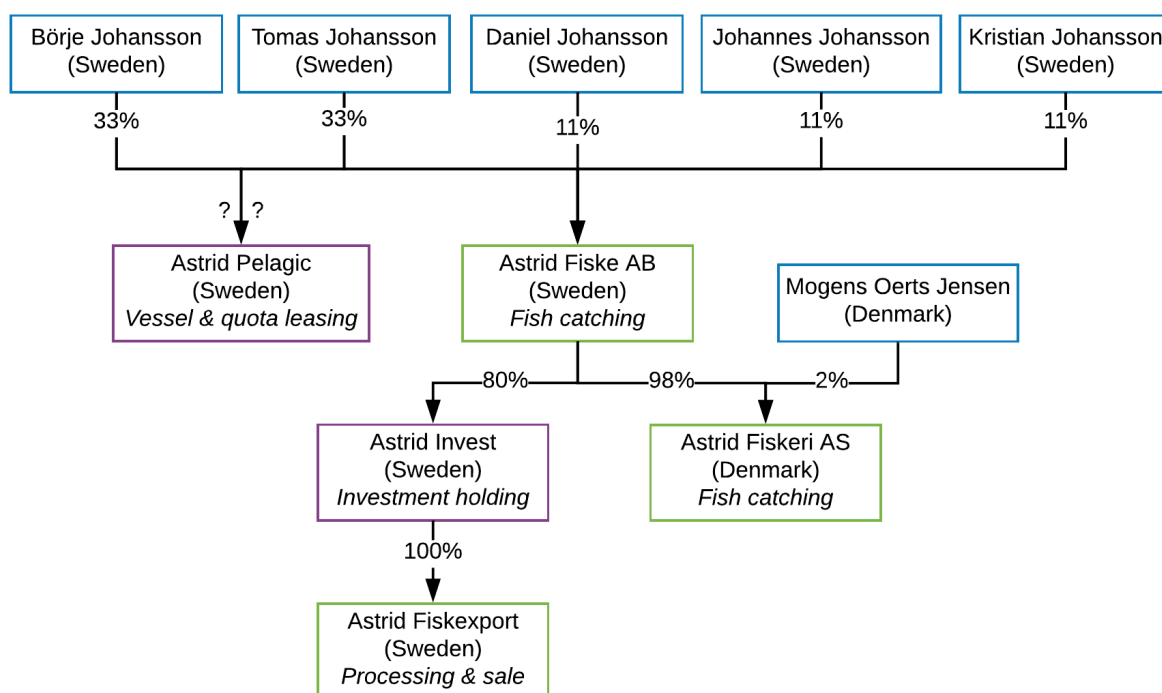
Table 20 shows that Astrid Fiskeri has two vessels in the pelagic fishing segment, 264 Astrid and E532 Rockall. The vessels, which are members of the DPPO, have a combined gross tonnage of 3,813. Figure 22 provides an overview of the Astrid Fiskeri company structure. The company registered in Denmark is a subsidiary of Astrid Fiske in Sweden (see section 24.3.1.2). Astrid Fiske is owned by the Johansson family. Astrid Fiske's registered business activities are fish catching, fish processing, and trade. The company further has one other direct subsidiary, Astrid Investment, which is an investment holding company registered in Sweden. Astrid Invest is the parent of Astrid Fiskeexport which is engaged in cold storage and wholesale in Sweden. In 2014, Astrid Fiskeexport divested from a freight company in Denmark, Truck Kompagniet Skagen Aps (Astrid Fiskeexport, 2015).

Truck Kompagniet Skagen is now owned by Werner Larsson Fiskeexport in Denmark. Werner Larsson is part of the Dutch Kennemervis Group with activities in the fish processing and distribution sectors in the Netherlands, France and Denmark (Virk, 2016c, p. 1 and Kennemervis Group, 2014, p. 6).

In 2014, Astrid Fiskeri generated a gross profit of € 15 million, down from € 16 million the previous year. The company had total assets worth € 109 million in 2014. The Astrid Fiskeri annual report does not mention fish quotas or vessels. However, the categories in which these are usually included are intangible assets and tangible assets, respectively. In 2014, Astrid Fiskeri had intangible assets worth € 72 million, and tangible assets worth € 35 million.

The parent company, Astrid Fiske, generated € 36 million in net sales in 2014. This was an increase from € 32 million in 2013. The company had total assets of € 123 million in 2014. Of this, € 79 million was fish quota, and € 35 million was fishing vessels (Astrid Fiske, 2015).

Figure 22: Astrid Fiskeri company structure



Source: Astrid Fiske AB (2017, July), *Consolidated Annual Report 2016-01-01 to 2016-12-31*, p. 2; Astrid Fiskeri A/S (n.d.), "Astrid Fiskeri A/S", online: <http://www.astridfiskeri.dk/en/company/astrid-fiskeri-as/>, viewed in June 2018; Astrid Fiskexport (2017, July), *Annual Report 2016-01-01 to 2016-12-31*, p. 9; Astrid Pelagic (2017, July), *Annual Report 2016-01-01 to 2016-12-31*, p.2

Astrid Fiske owns vessels Marie and Martina in Sweden. It also rents vessels Astrid and Falcon in Sweden (Astrid Fiske, 2015). It is noteworthy that Astrid Fiskeri and Astrid Fiske note different ownership percentages for Astrid Fiskeri.

Anders Illeborg, director of Astrid Fiskeri, states that there is vertical integration in Astrid Fiske's activities in Sweden. In Denmark, Astrid Fiskeri has a long-term and close relationship with the Dutch Parlevliet & Van der Plas Group (PP Group). PP Group has a processing plant in Germany. Almost all of Astrid Fiskeri's herring goes to PP Group. The off-take agreements between Astrid Fiskeri and PP Group are renewed annually. They have already been renewed for approximately ten years. The two companies also swap quotas. PP Group for example swaps herring for Astrid Fiskeri's horse mackerel (Illeborg, 2016).

Given Astrid Fiskeri's close relationship with PP Group, and the fact that investment in downstream processing in Denmark is too complicated and not cost effective, Astrid Fiskeri is not considering vertical integration through downstream investments (Illeborg, 2016).

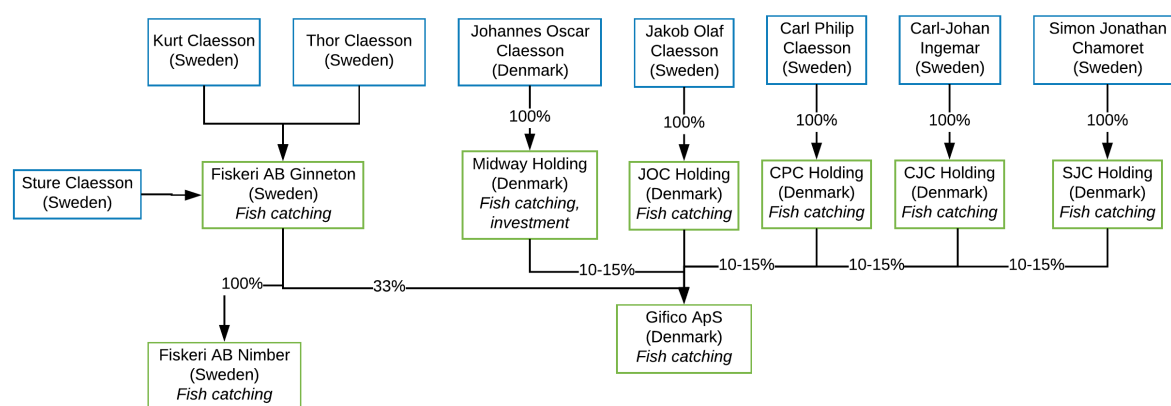
Astrid Fiskeri's company structure (Figure 22) shows evidence of both vertical and horizontal integration. Horizontal integration is found in the investments in the fish catching sector in both Denmark and Sweden. Vertical integration is found in the downstream investments of parent company Astrid Fiske, also through its subsidiaries in Sweden. These downstream activities include processing, packaging, cold storage, wholesale and trade. Non-structural vertical integration is also evident through the long-term off-take agreements between Astrid Fiskeri and PP Group.

7.3.1.4. Rederiet Gifico

Table 20 shows that Rederiet Gifico has one pelagic fishing vessel, S205 Ceton, which is a member of the DPPO. Gifico's gross tonnage is 1,337 GT.

Figure 23 provides an overview of Gifico's company structure. It shows that the ultimate owners of Gifico ApS in Denmark are the Swedish Claesson family (see section 24.3.1.1). Five of the owners invested through holding companies in Denmark. A further three invested in Gifico ApS through Fiskeri AB Ginneton, a fish catching company registered in Sweden. Fiskeri AB Ginneton has the largest single stake in Gifico ApS. Fiskeri AB Ginneton also has one other subsidiary engaged in fish catching registered in Sweden.

Figure 23: Gifico company structure



Source: Orbis (2018, May), "Gifico ApS: Beneficial owners", viewed in May 2018; Fiskeri AB Ginneton (2017, September), *Annual Report: 2016-01-01 to 2017-06-30*, p. 13.

In 2014, Gifico generated a gross profit of € 3.2 million, up from € 2.1 million in 2013. The company had total assets of € 21 million. Of this, € 8.6 million were fishing quotas, and € 11.2 million were fishing vessels (Rederiet Gifico, 2015, p. 9-10).

The major shareholder of Gifico, Fiskeri AB Ginneton, does not consolidate Gifico ApS in its annual report because its stake is not large enough. Fiskeri AB Ginneton generated net sales of € 4.8 million in 2014, up from € 4.3 million in 2013. The company had total assets of € 17 million in 2014. Of this total, fishing quotas accounted for € 0.9 million and vessels for € 4.1 million (Fiskeri AB Ginneton, 2015, p. 2-3).

The company structure of Gifico ApS shows a degree of horizontal integration. The owners of Gifico also have fish catching activities in Sweden. Gifico owns much higher value fishing quotas than its main investor Fiskeri AB Ginneton.

7.3.1.5. Themis Fiskeri A/S

Table 20 shows that Themis Fiskeri A/S' pelagic fishing vessel S144 Themis is a member of DPPO. Figure 24 shows Themis Fiskeri A/S' company structure. The company operates as a wholly-owned subsidiary of Swedish Ryberg AB, which in turn is owned by Björn and Anders Ryberg from Sweden. Karl Lorentsson, also Swedish, has a minority stake. Themis Fiskeri A/S is engaged in fish catching, trade and investment. It does not have other registered subsidiaries.

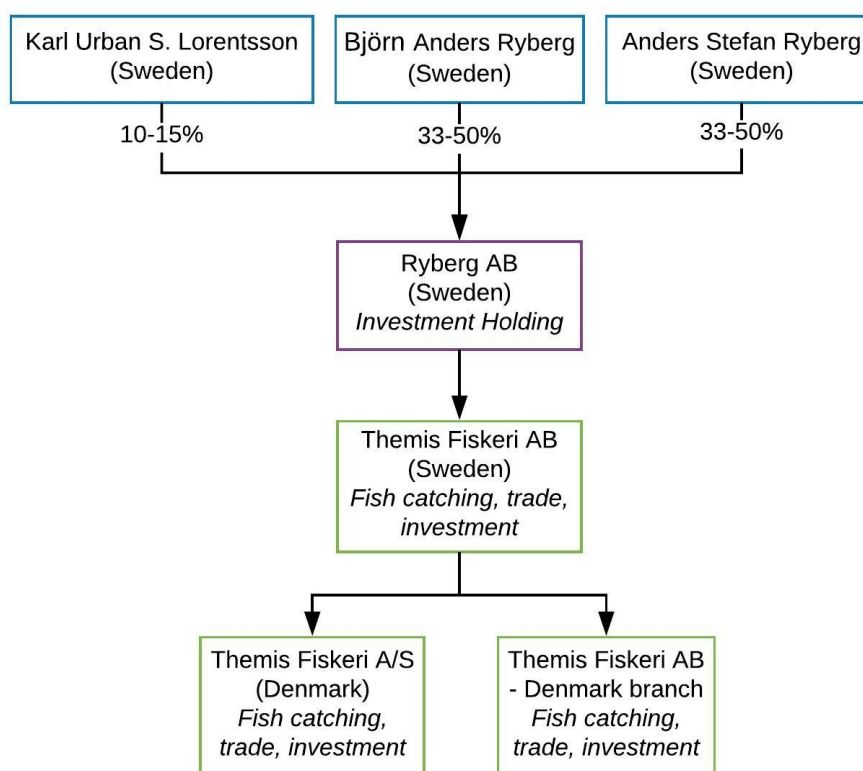
In Sweden, the Ryberg family owns Themis Fiskeri AB. The family has a registered branch office in Denmark, registered at the same address as Themis Fiskeri A/S. There are 70 companies registered on this same Danish address. An explanation may be that the address is used by a trust company McRevision which provides services to these companies

(Bloomberg, n.d.). Themis Fiskeri A/S is the subsidiary of Themis Fiskeri AB. Reportedly, Themis Fiskeri AB does not have fishing rights in Sweden (Svensson, 2015).

In 2014, Themis Fiskeri A/S generated a gross profit of € 3 million, a slight increase over the previous year. The company had total assets of €30 million in 2014. € 20 million of this was intangible assets, the category often used by fishing companies to refer to fishing quotas. A further € 4.7 million of this was in tangible assets, often used by fishing companies to refer to fishing vessels. € 5.2 million was a loan to Themis Fiskeri A/S (Themis Fiskeri A/S, 2015, p.10-11,16).

Parent company Themis Fiskeri AB generated net sales of € 2.1 million in 2014. This was up from € 1.5 million in 2013. The company had total assets of € 10 million in 2014. Of this, € 4 million was fish quota. Themis Fiskeri AB sold its vessel (S144 Themis) to Themis Fiskeri A/S in 2011. According to the annual report, Themis Fiskeri AB mans the vessel, although the fishing activities are carried out by Themis Fiskeri A/S. Through the Danish branch of Themis Fiskeri AB, the company acquired Danish fishing rights. These have been leased to Themis Fiskeri A/S (Themis Fiskeri A/S, 2015, p.2).

Figure 24: Themis Fiskeri company structure



Source: Virk (2016, March), CVR data: Themis Fiskeri A/S, p. 1-4; Themis Fiskeri A/S (2015, June), Annual Report 2014, p. 15; Themis Fiskeri AB (2015, September), Annual Report 2014, p. 3.

The company structure of Themis Fiskeri indicates horizontal integration across geographic boundaries. The motivation for the relationship between Themis Fiskeri AB and Themis Fiskeri A/S is clearly described by Themis Fiskeri AB, i.e. to gain access to Danish quotas, although the vehicle through which it does so, namely the Themis Fiskeri AB Denmark Branch, does not have a vessel. Therefore, the integration construction also includes the element that Themis Fiskeri A/S owns the fishing vessel it bought from Themis Fiskeri AB. The latter thus still mans the vessels which Themis Fiskeri A/S now owns.

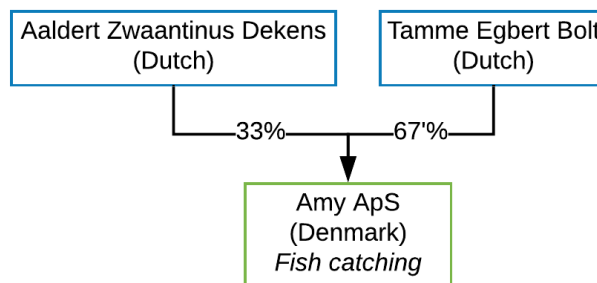
7.3.2. Demersal segment

7.3.2.1. Amy A/S

As Table 21 shows, Amy has four vessels in the coastal fishing segment. Amy is owned by two Dutch fishermen. One of whom, Tamme Egbert Bolt, resides in Denmark.

In 2014, Amy generated a net profit of € 454,000, up from € 284,000 in 2013. The company had total assets worth € 4 million in 2014. Of this, € 2.8 million were fishing vessels and € 1.3 million were quotas (Amy, 2015, p. 7-8).

Figure 25: Amy A/S company structure



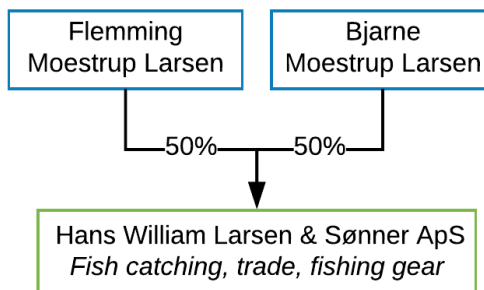
Source: Virk (2016, March), CVR data: Amy A/S, p. 1-2; Amy (2015, June), Annual Report 2014, p. 15.

Amy does not show evidence of vertical integration as no downstream activities were identified. With its four vessels, it has a significantly sized fleet. Although the owners of Amy are both Dutch, this research could not find evidence that the owners also had investments in the Netherlands.

7.3.2.2. H W Larsen & Sønner I/S

As Table 21 shows, five of H W Larsen Sønner I/S' fishing vessels are members of the DFPO. Figure 26 provides an overview of the H W Larsen Sønner company structure. It shows that the company is owned by Flemming Moestrup Larsen and Bjarne Larsen Moestrup. The company does not have any further subsidiaries. However, the company's registered business activities include fish catching, trade and fishing gear.

Figure 26: H W Larsen Sønner I/S company structure



Source: Virk (2016, March), CVR data: Hans Willem Larsen & Sønner Aps, p. 1.

H W Larsen Sønner I/S made a gross loss of € 1,823 in 2014, this was lower than 2013 when it made a gross loss of € 7,035. The company had total assets of € 368,000 in 2014 (H W Larsen Sønner I/S, 2015, p. 10-12).

7.4. Integration

The company analysis in section 7.3 has shown that integration is taking place in the Danish fisheries industry. No vertical integration was identified in the analysed companies. Sverdrup-Jensen of DPPO affirmed that there are very few if any examples of vertical integration in the Danish pelagic fisheries industry. He could only think of one example of a company that had sold off its fleet to focus on the processing segment. Initially the company sold its quotas to finance the processing plant. However, as it was unable to generate sufficient revenues as an integrated company it decided to focus on processing (Sverdrup-Jensen, 2016).

Lunderberg Larsen of the Danish Fish Producers Organisation (DFPO) stated that there is also no vertical integration in the Danish demersal fisheries segment. According to him this lack of vertical integration is in large part due to the fact that demersal fish species lose value with every processing step. Therefore, the sale of demersal species tends to be in the form of fresh fish at auctions and markets. Furthermore, demersal fishermen in Denmark believe that they are already receiving a fair price at auction and a stable level of sales. For these reasons, Danish demersal fishermen are not motivated to invest in downstream segments. Lunderberg Larsen attributes this lack of downstream investment to the strict regulation regarding investments in the fish catching segment. These Danish regulations stipulate that a company investing in the fish catching sector should earn at least 60% of their income from fishing. This is to protect the sector against capital speculation and to stop quotas being owned by investors such as pension funds. However, it also makes it difficult for downstream companies to invest upstream (Lunderberg Larsen, 2016).

The fish catching sector is more profitable in Denmark than the fish processing sector. The main species harvested in Denmark are mackerel and herring. There are high national quotas for these species, and there is a strong market. Furthermore, the reduction in fleet capacity and fleet size has resulted in less competition, thus ensuring that the remaining individual companies and fishermen have access to sufficient resources. These companies have also been able to lower the costs, improve fuel efficiency and introduce better management. They have also deployed newer vessels. On the other hand, margins in the processing segment have dropped. According to Sverdrup-Jensen there is a lot of competition in the market. He states that many European supermarkets have merged. Because of this there are fewer buyers, enabling these buyers to use their leverage to push down prices (Sverdrup-Jensen, 2016).

A number of the analysed companies have trading activities, either through their affiliates/subsidiaries or as part of their own business activities. This suggests a degree of vertical integration in the form of fish catching and trade of frozen and chilled fish.

As the company analysis in section 7.3 has shown, horizontal integration is the dominant form of integration in the Danish fisheries sector. Only one of the analysed companies is active in both pelagic and coastal fisheries, and another one or two pelagic fisheries companies have invested in the demersal segment (Lunderberg Larsen, 2016). However, four of the six analysed companies have foreign owners. This is particularly the case for the pelagic fishing sector with many Swedish investment companies. Horizontal integration in these cases is international horizontal integration to gain access to fishing quotas. According to Danish law, only Danish companies or Danish people may buy Danish fish quotas (*News Øresund*, 2017). But the Swedish-owned fish quotas are mainly controlled by persons living in Sweden who established Danish companies with Danish addresses in order to access quotas (*ibid.*). Several of these Swedish companies do not have offices in Denmark, but only one postal address (*ibid.*). The postal address is sufficient to meet the Danish legal requirements (*ibid.*). Through such constructions, four Swedish companies own just under a quarter of Danish quota (*ibid.*). In Sweden, however, there is a requirement that the majority

of the owners behind the companies that own Swedish fishing vessels shall be Swedish citizens (*ibid.*). This explains the lack of foreign investment in the Swedish fisheries industry (see Chapter 24).

Lundberg Larsen notes that there is, in contrast to the pelagic segment, very little foreign investment in the Danish demersal segment. He states that this can again be attributed to the strict regulations in the Danish fisheries industry, as well as to the fact that the companies active in the demersal segment are financially strong, and thus less likely to face buyouts (Lundberg Larsen, 2016).

Aside from the corporate structures that indicate formal types of integration, this also takes other forms. In terms of non-structural forms of vertical integration between the fish catching and fish processing industries, Sverdrup-Jensen reports that some pelagic fishermen negotiate off-take agreements with processing facilities. These are not exclusive, i.e. the fisherman also sells his fish at auction (as will be described in more detail below). Off-take arrangements are usually short term, between one and half a year and one year. The price is usually the auction price plus a premium. Off-take arrangements are slightly more common in the industrial use fishing segment than in the human consumption segment. Off-take arrangements are sometimes made because the fishermen own minority stakes in the fish processing companies (Sverdrup-Jensen, 2016). Lundberg Larsen of the demersal segment states that in this segment fishermen in the East of Denmark tend to have off-take agreements with processors, while fishermen in the North and West tend to sell their fish at auction. This is because of the long distance to auction from the East of the country (Lundberg Larsen, 2016).

Danish pelagic fishermen sell most of their harvest at auction, in particular on the Norges Sildesalgslag online auction. The fishermen put their catch in the online auction system. Buyers then bid online, and the fishermen land the fish at the port of the highest bidder. Landing sites include: Norway, Shetland Islands, the Faroe Islands, Germany and the Baltic. The catch, however, still comes off the Danish quota. The system, according to Sverdrup-Jensen, is very transparent. There are no tax levies on fresh fish landings. Norges Sildesalgslag is so popular because it was the first to offer such a service, it is the largest, it is transparent, and it guarantees a buyer. There are Norges Sildesalgslag staff at the landing sites to ensure that the volumes and qualities meet the deal requirements. There is also insurance in case the processor is suddenly unable to pay for the transaction. The system avoids conflict between the vessels/skippers and processors. The focus of the system is the North Atlantic and is mainly used by Swedes, Norwegians, Scots and Danes (Sverdrup-Jensen, 2016). Due to the low margins in the processing segment, the profitability of the catching segment, the efficiency of the Norge Sildesalgslag auction, and the balance of the fleet capacity and fish stock in the Danish fisheries, there does not appear to be a significant driver for more structural vertical integration.

As noted above, there is strong evidence of horizontal integration in Danish fisheries. Non-structurally there are also systems of integration focused mainly on access to quotas. Sverdrup-Jensen notes that there are registers of the trade in quotas. Although these records are online, the deals are private. Bidding is usually in the form of closed bids facilitated by consultants. Banks are key financiers of the quota trade. Since the introduction of the ITQ system, quotas can be used as collateral for bank loans. Quota prices are determined by free market prices. Quota trade is free within a 10% cap per individual. Sverdrup-Jensen states that DPPO recently conducted a study which found that only 2% of current quota allocation is based on the original 2001 allocation proportions. He adds that quotas in the pelagic sector are pretty much fixed, and that there are only a few examples of small quantities being bought or sold: renting out and in is more common (Sverdrup-Jensen, 2016).

In addition to quota trade, there is also a system of renting and borrowing quotas. Sverdrup-Jensen reports that this is an online system. He states that, using this system, renting and borrowing can be taking place in Denmark as well as internationally. Quotas are put up for rent online and interested parties can then rent the quota. This is more often used in the demersal segment according to Sverdrup-Jensen. At the beginning of the year there are a lot of internal transactions (Sverdrup-Jensen, 2016). The renting in and out of quotas is a mechanism that can be used by companies which are close to the legal limits of quota ownership, such as Gitte Henning, to gain access to more quotas (Scheller, 2016).

In summary, both the structural and non-structural forms of integration in the Danish fisheries industry are predominantly in the form of horizontal integration driven by the desire to access quotas. There is very little structural, vertical integration, as most of the fish in both the pelagic and demersal segments are sold at auction, with a minority being sold through off-take arrangements.

8. ESTONIA

KEY FINDINGS

- 22% of Estonian fishing enterprises own more than one vessel
- **61%** of **exports** destined for **EU** market
- **High** levels of structural **vertical integration** in two fishing segments
- **Significant** structural **horizontal integration**, both within POs and internationally
- **Low** levels of **non-structural vertical integration**
- **Trade in quotas stabilised**, renting in and out of quotas is common

8.1. Composition of the Estonian seafood sector

In 2015, Estonian fishing companies generated € 15 million in landings income. Processing generated another € 127 million in production revenue in 2016.

Estonian maintained a slight trade surplus in fish in 2016 of € 22 million. The country exported € 142 million worth of fish and fish products, while it imported € 119 million. 61% of Estonia's fish exports were destined for EU countries. The main export destination for Estonian fish products were Finland (20%), Sweden (11%) and the Ukraine (9%). Fish exports accounted for slightly under 1% of Estonia's GDP.

83% of Estonia's fish imports originated from EU countries. Its main import partners were Finland (18%), Sweden (18%), and Lithuania (15%).

In 2015, there were 1,534 registered commercial fishing vessels in Estonia. These belonged to 1,110 enterprises. 247 enterprises – 22% of all fishing companies – owned more than one vessel.

The fish catching segment employed 485 fte. This, along with the average vessel tonnage of 4 GT, indicates the small-scale and part-time nature of the majority of the Estonian fisheries segment. The fish processing segment, although generating more income, did so with a smaller workforce of approximately 127 fte.

Table 22: Estonian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	1,534	
	Average vessel tonnage per vessel (2015, GT)	4	
	Average vessel tonnage per enterprise (2015, GT)	5	
<i>Enterprises</i>	Number of fishing enterprises (2015)	1,110	
	Enterprises with more than one vessel (2015, number, % enterprises)	247	22.3%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	15	0.07%
	Average landing income per fte employed (2015, €)	29,960	
	Average landing income per vessel (2015, €)	9,472	
	Average landing income per enterprise (2015, €)	13,091	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	485	0.08%
	Average employment per vessel (2015, fte)	0.3	
	Average employment per enterprise (2015, fte)	0.4	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	127	0.60%
	Employment in the fish processing sector (2015, fte, % workforce)	1,844	0.30%
	Average processing production per fte employed (2015, €)	68,818	
Trade	Trade balance (2016, € mln, % GDP)	23	0.11%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	142	0.67%
	1. Finland (2016, € mln, % export)	28	20%
	2. Sweden (2016, € mln, % export)	15	11%
	3. Ukraine (2016, € mln, % export)	12	9%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	119	0.56%
	1. Finland (2016, € mln, % import)	21	18%
	2. Sweden (2016, € mln, % import)	21	18%
	3. Lithuania (2016, € mln, % import)	17	14%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

The Estonian fish catching sector is composed of four segments: the Atlantic distant water, the Baltic trawl, the Baltic coastal, and the inland water fleets (Eurofish, 2015b). In 2014, the distant water fleet was composed for six vessels (ibid.). These were active mainly in the Northwest Atlantic, Northeast Atlantic and Svalbard (ibid.). The Baltic trawl fishery consists of approximately 50 vessels, employing 500 workers (ibid.). The majority of the catch is sprat and herring (ibid.). These are landed mainly at Estonian ports and sold to fish freezing and processing companies (ibid.).

The Baltic coastal fishery consists of approximately 600 vessels, employing 2,500 workers (Eurofish, 2015b). However, these fishermen are generally only active on a part-time basis (ibid.). As with the Baltic trawl fishery, the Baltic coastal fishery lands mainly herring and sprat (ibid.).

The Estonian fish processing industry produces a range of seafood. This includes: block frozen pelagics, canned products, and smoked and marinated fish (Eurofish, 2015b). Products are destined for both domestic and international markets (ibid.). The most important export products are: frozen northern prawn; frozen small pelagics; frozen, fresh and chilled fish fillets; preserved small pelagics; and smoked fish including salmon and trout (ibid.).

The ITQ system was introduced in Estonia in 2001 (Undrest, 2016). This led to a rapid reduction of fleet size (ibid.). In 2000 there were 197 vessels and 90 companies active in the fish catching segment in Estonia (ibid.). By 2016 there are only 30 active vessels, and 20 companies according to Mart Undrest, executive director of production organisation Eesti Kalapüügiühistu (ibid.). The gross tonnage of the fleet has also reduced (ibid.). Government regulation induced three scrapping rounds aimed at creating a balance between fleet size and fish stock (ibid.). These scrapping rounds occurred in 2005, 2008 and 2013 (ibid.).

While the ITQ system reduced domestic competition in the catching segment, membership of the EU has led to greater international competition as well as opportunities. This has created a "healthy industry", according to Undrest (Undrest, 2016). Mauno Leppik, CEO of producer organisation Eesti Traalpüügi Ühistu, states that the majority of industry leavers left around ten years ago. Now the industry is more or less stable (Leppik, 2016).

As a result of the introduction of the ITQ system and the reduction in fleet size, employment in the fisheries sector also decreased (Undrest, 2016). Undrest states that this process was gradual and adds that there was no shift of employment from the fish catching segment to the fish processing segment (ibid.). In fact, it is now increasingly difficult for Estonian fishing companies to find qualified personnel (ibid.).

8.2. Producer organisations

There are five main producer organisations in Estonia, with five to seven members each. Table 23 provides more information.

Table 23: Estonia: Recognized producer organisations

Producer organisation	No. of members	No. of vessels	Member company
Eesti Kalapüügiühistu (EstoFish - Estonian Fishing Association)	6	64 active trawlers and fishing vessels under 12 metres	Hiiu Kalur AS
			Kaabeltau OÜ
			Keskpunkt OÜ
			Monistico OÜ
			Pärnu Rannakalurid TÜ
Eesti Kutseliste Kalurite Ühistu (Estonian Professional Fishermen's Cooperative)	5		Saare Kalapüügi OÜ
			Abimerk OÜ
			Bentros OÜ
			Caroline AS
			Fortem Holding OÜ
Eesti Rannapüügi Ühistu (Estonian Trawling Cooperative)	7		Morobell OÜ
			Ain Killing FIE
			Järve OÜ
			Kipper Kala OÜ
			MMMSprattus OÜ
			Peipsi Kalatööstus OÜ
			Purekkari Rand OÜ
Eesti Traalpüügi Ühistu (Estonian Coastal Fishing Cooperative)	5		Wats OÜ
			DGM Shipping AS
			Eru Kalandus OÜ
			Kalalaev Kotkas OÜ
			Krapesk AS
Kalakasvatajate Ühistu Ecofarm			Prangli Kalandusühistu

Source: Official Journal of the European Union (2013, March), "Information and notices", 56, p. 68/22; Eesti Kalapüügiühistu (n.d.), "About", online: <http://www.estofish.ee/pages/et/avaleht.php>, viewed in February 2016; Ministry of Rural Affairs (n.d.), "Estonia fishing and aquaculture producer organisations", online: <http://www.agri.ee/et/eesti-kalapüügi-ja-vesiviljelussektori-tootjaorganisatsioonid>, viewed in February 2016; Eesti Kalapüügiühistu (2015), Annual Report 2014, p. 3.

A number of companies are members of more than one producer organisation. For example, Hiiu Kalur is a member of Eesti Kalapüügiühistu. Its affiliate, Krapesk is member of Eesti Traalpüügi Ühistu. In fact, Krapesk holds a 20% share in Eesti Traalpüügi Ühistu (Aktiaselts Krapesk, 2015, p. 16). In its annual report, Eesti Traalpüügi Ühistu, states “Eesti Traalpüügi Ühistu belongs to a group KRAPESK AS, which prepares and publishes consolidated financial statements” (Eesti Traalpüügi Ühistu, 2015, p. 8). Two other Krapesk subsidiaries are also members and 40% owners of Eesti Traalpüügi Ühistu, Eru Kalandus and Kalalaev Kotkas. Additionally, a member of the management board of Eesti Traalpüügi Ühistu, Oleg Omeltšenko, is also the owner of Kajax Fishexport in a joint venture with Hiiu Kalur and the European Fish Investment Company (E-Business Register, 2016d, p. 2 and E-Business Register, 2016b, p. 2).

Fortem Holding management board member, Raivo Baum, is also the only listed management board member of the producer organisation Eesti Kutseliste Kalurite Ühistu, of which Fortem Holding is also a member, and the only listed management board member of Fortem subsidiary Caroline, which is also a member of the same producer organisation. It is also possible that Raivo Baum is related to the owner of Fortem Holding, Ragnar Baum (E-Business Register, 2016f, p. 2; Eesti Kutseliste Kalurite Ühistu, 2015, p. 18; Fortem Holding, 2015, p. 8 and Caroline, 2015). Raivo Baum is the 85% owner of Morobell, which is also a member of Eesti Kutseliste Kalurite Ühistu. Morobell further owns two fish catching subsidiaries in Finland (Morobell, 2015, p.14, p. 32).

8.3. Company analysis

In Estonia there is a steady increase in the importance of larger, horizontally and vertically integrated companies (Eurofish, 2015b). These companies have direct ownership of all production activities in the fish industry value chain, from fish catching to fish processing and export (ibid.). There is also an increase in long-term contractual supplier-customer relationships between producing and processing companies and supermarkets (ibid.). In the Baltic trawl fisheries, vertical integration is very common (ibid.). Vertical integration takes the form of processing or fishing companies owning quotas, hiring external fishers, processing raw materials and managing trade relations including export (ibid.). Most vertically integrated companies export almost all of their production (ibid.). In the Baltic Sea fisheries, vertically integrated companies are organized in producer organisations (ibid.).

As mentioned in section 8.1, the Estonian fish catching sector is composed of four segments: the Atlantic distant water, the Baltic trawl, the Baltic coastal, and the inland water fleets. Given the size of the segments, and their relevance to the Common Fisheries Policy, this analysis focusses on the Baltic trawl and Baltic coast fisheries.

8.3.1. Baltic Sea and Gulf of Riga segment

Table 24 provides an overview of the 20 largest fishing companies in the Baltic Sea and Gulf of Riga (Baltic trawl) segment based on total catch between 2011 and 2014. This allows to identify Hiiu Kalur, Morobell and Kaabeltau as the top three fishing companies in the Baltic Sea and Gulf of Riga segment.

Table 24: Baltic trawl catch by company (tonnes)

Company	2011	2012	2013	2014	Total
Hiiu Kalur AS	13,529	10,860	11,157	11,088	46,633
Morobell OÜ	6,236	5,925	5,247	3,535	20,942
Kaabeltau OÜ	3,862	4,920	4,430	4,377	17,589
DGM Shipping AS	4,050	3,211	3,447	3,389	14,097
Fortem Holding OÜ	2,137	1,531	3,189	4,426	11,283
Krapesk AS	3,361	2,351	2,758	2,215	10,684
Abimerk OÜ	2,750	1,448	1,708	1,692	7,599
Keskpunkt OÜ	1,862	1,841	1,758	1,762	7,223
Monistico OÜ	1,795	1,342	1,695	1,856	6,687
Caroline OÜ	1,659	1,678	1,513	1,549	6,399
Bentros OÜ	1,656	1,490	1,058	1,806	6,010
Kalalaev Kotkas OÜ		902	2,476	1,979	5,358
Saare Kalapüügi OÜ	1,774	1,054	914	1,129	4,871
Saare Rand AS		1,137	1,310	1,206	3,653
Novirina Kalaparadiis OÜ	864	909	890	963	3,626
Kalavara OÜ	2,257	1,083			3,340
Prangli Kalandusühistu	833	791	645	722	2,991
Ramsun AS	507	345	440	553	1,845
Rosalie OÜ	1,241	295			1,537
Mootorlaev Ermistu OÜ	1,017	99			1,116

Source: Ministry of Rural Affairs (2015, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2014; Ministry of Rural Affairs (2014, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2013; Ministry of Rural Affairs (2013, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2012; Ministry of Rural Affairs (2012, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2011.

After an analysis of the company structures, this research has identified the parent companies of the companies listed in Table 24. Table 25 lists the top-10 Baltic trawl fishing companies by total catch for the period 2011-2014. It shows that the Hiiu Kalur group had by far the largest catch during the period. It is followed by companies owned by Raivo Baum, Fortem Holding and Kaabeltau.

Table 25: Baltic trawl catch by parent company (tonnes)

Rank	Company	2011	2012	2013	2014	Total
1	Hiiu Kalur	16,890	14,113	16,390	15,283	62,675
2	Raivo Baum companies	7,892	7,415	6,305	5,340	26,952
3	Fortem Holding	3,796	3,209	4,702	5,975	17,682
4	Kaabeltau	3,862	4,920	4,430	4,377	17,589
5	DGM Shipping	4,050	3,211	3,447	3,389	14,097
6	Monistico	3,569	2,396	2,609	2,985	11,558
7	Abimerk	2,750	1,448	1,708	1,692	7,599
8	Keskpunkt	1,862	1,841	1,758	1,762	7,223
9	Saare Rand		1,137	1,310	1,206	3,653
10	Novirina Kalaparadiis	864	909	890	963	3,626

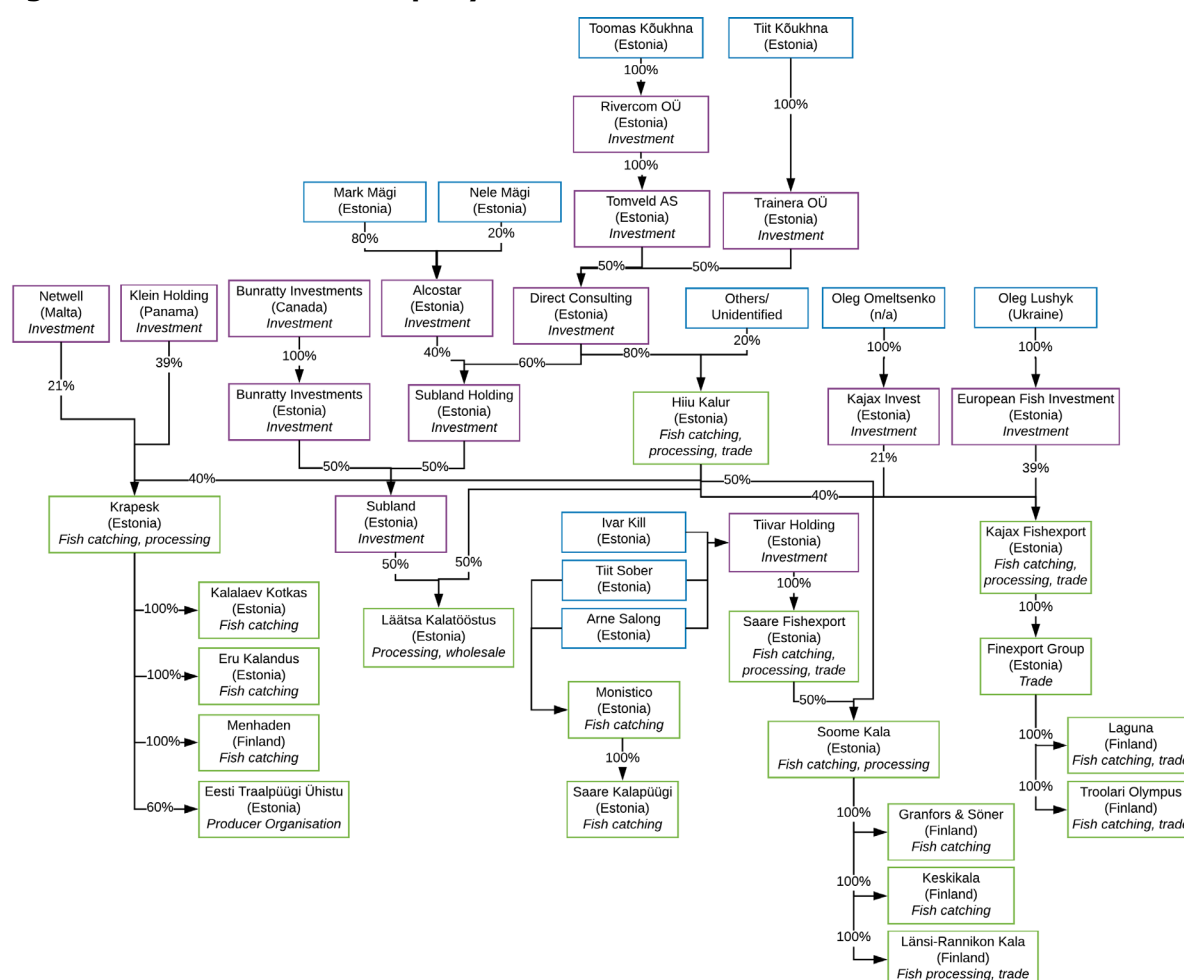
Source: Ministry of Rural Affairs (2015, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2014; Ministry of Rural Affairs (2014, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2013; Ministry of Rural Affairs (2013, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2012; Ministry of Rural Affairs (2012, January), Baltic Sea (including Gulf of Riga): Commercial fishing catch by company, 2011.

The remainder of this section will provide an analysis of the company structures of the parent fishing companies with accumulated annual catches of more than 5,000 tonnes for the period 2011 to 2014. It should be noted that due to data limitations and the restrictions in functionalities of the Estonian company register, it is not always possible to identify companies on the basis of their owners. For example, it is not possible to extract a list of companies owned by Ragnar Baum. However, it is possible to identify corporate ownership.

8.3.1.1. Hiiu Kalur

As shown in Table 25, Hiiu Kalur had an accumulated catch of 62,675 tonnes in the period 2011 to 2014. Annual catches fluctuated between 14,113 and 16,890 tonnes. In 2014, Hiiu Kalur generated revenues of € 3.3 million, a 50% decrease from the previous year (Hiiu Kalur, 2015). The company owned total assets with a value of € 14 million (ibid.).

Figure 27: Hiiu Kalur company structure



Source: Orbis (2018, July), "Current subsidiaries: Krapesk", viewed in July 2018; Orbis (2018, July), "Current shareholders: Krapesk", viewed in July 2018; Kajax Fishexport (2018, June), *Annual Report 2017*; Krapesk (2018, May), *Annual Report 2017*; Orbis (2018, July), "Current shareholders: Alcostar", viewed in July 2018; Orbis (2018, July), "Current shareholders: Subholding", viewed in July 2018; Orbis (2018, July), "Beneficial owners: Subland", viewed in July 2018; Orbis (2018, July), "Current shareholders: Läätsa Kalatööstus", viewed in July 2018; Läätsa Kalatööstus (2018, March), *Annual Report 2017*; Soome Kala (2018, May), *Annual Report 2017*; Orbis (2018, July), "Current subsidiaries: Hiiu Kalur", viewed in July 2018; Orbis (2018, July), "Current shareholders: Direct Consulting", viewed in July 2018; Orbis (2018, July), "Beneficial owners: Kajax Fishexport", viewed in July 2018; *Njord* (2018, March 10), "Finland's largest fishing boats 2018", online: <http://fiske.zaramis.se/2018/03/10/finlands-storsta-fiskebatar-2018/>, viewed in July 2018; E-Business Register (2016, February), Entrepreneur: Aktsiaselts Tomveld (10419504), p. 2; E-Business Register (2016, February), Entrepreneur: Osaühing Trainera (10649836), p. 2; E-Business Register (2016, March), Entrepreneur: Tiivar Holding OÜ (12346850), p. 2; E-Business Register (2016, March), Entrepreneur: Osaühing Monistico (10574096), p. 2; Monistico (2015), *Annual Report 2014*, p. 3; E-Business Register (2016, March), Entrepreneur: SAARE KALAPÜÜGI OÜ (10582492), p. 2; Osaühing Soome Kala (2015), *Annual Report 2014*, p. 10.

Hiiu Kalur is member of Eesti Kalapüügiühistu PO. Through its subsidiaries it owns and is also a member of the Eesti Traalpüügi Ühistu PO.

Figure 27 provides an overview of the Hiiu Kalur company structure. It shows that the company structure is comparatively complicated. Through several intermediary subsidiaries, Toomas Kõuhkna and Tiit Kõuhkna own Hiiu Kalur and a number of other companies. The main investment subsidiary is Direct Consulting. Direct Consulting is the majority investor in Hiiu Kalur. The investment company also owns port service companies Veere Sadam and Vesilahendused, as well as a number of other non-related companies.

Hiiu Kalur owns 40% of Krapesk, a fish processing company with several subsidiaries. It is possible that the two other shareholders of Krapesk, Klein Holding Group (Panama) and Netwell (Malta), also have a link to Toomas Kõuhkna and Tiit Kõuhkna. Krapesk owns two fish catching companies and 20% of Eesti Traalpüügi Ühistu PO. The two Krapesk fish catching subsidiaries also own 20% each of the Eesti Traalpüügi Ühistu PO. One of the Krapesk fish catching subsidiaries, Menhaden OY, is registered in Finland (see section 9.3.2).

Through its 50% ownership of Soome Kala, Hiiu Kalur has three further fishing subsidiaries in Finland. Hiiu Kalur also has a 40% stake in Kajax Fishexport, a fish processing and trading company. Kajax Fishexport also has a fish processing subsidiary in the Ukraine, an important export destination for Estonian fish.

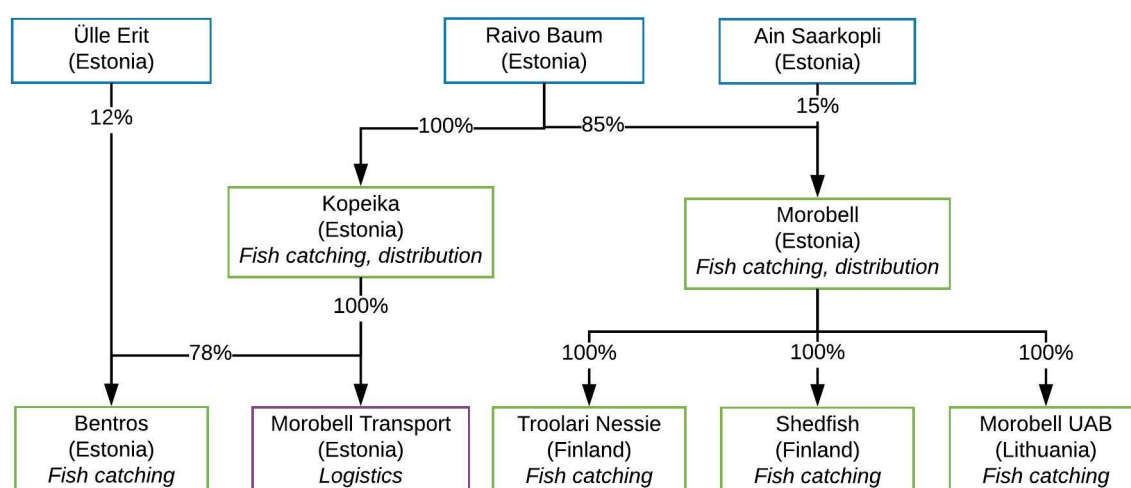
It was not possible to access sufficiently detailed company information from the Panamanian company register to determine the ownership structure of Klein Holding. If Klein Holding is related to Toomas Kõuhkna and Tiit Kõuhkna, then the group has further investments in fish processing in Norway.

Hiiu Kalur exhibits evidence of both vertical and horizontal integration. Vertical integration is found in its investments in fish catching companies, fish processing, trading, a producer organisation, and port services. Horizontal integration is found in its investments in fish catching companies that are members of different producer organisations, as well as fish catching companies in different countries, particularly in Finland. Horizontal integration is also found at the fish processing level with investments in fish processing in at least two countries.

8.3.1.2. Raivo Baum companies

As seen in Table 25, Raivo Baum companies had an accumulated catch of 26,952 tonnes in the period 2011 to 2014. Annual catch volumes fluctuated between 5,430 and 7,892 tonnes.

Investor Raivo Baum has investments in several fishing sector companies. He is the majority shareholder of both Morobell and Bentros. Both these companies are members of the Eesti Kutseliste Kalurite Ühistu PO. The direct parent of Bentros, Kopeika, also owns a freight company, Morobell transport (see Figure 28).

Figure 28: Raivo Baum company structure

Source: Morobell (2017, June), *Annual Report 2016*; Kopeika (2018, June), *Annual Report 2017*; Bentros (2015), *Annual Report 2014*, p. 17.

Subsidiary Morobell generated 70% of its revenue from the wholesale distribution of fish and fish products in 2014. 13% of revenue came from freight transport, and only 11% of revenue was generated by sea fishing (Morobell, 2015). As Figure 28 shows, Morobell has two further subsidiaries. Both are fish catching subsidiaries registered in Finland. In 2014, Morobell generated revenues of € 11 million, while in 2013 it had generated € 13 million. The company had total assets worth € 14 million in 2014 (Morobell, 2015).

Subsidiary Bentros generates 100% of its revenue from sea fishing. In 2014, revenues amounted to approximately € 363,000, in 2012 revenues were approximately € 272,000 (Bentros, 2015). Bentros had total assets of approximately € 994,000 (ibid.).

Morobell has an outstanding loan with Bentros, indicating that although there is no formal relationship between the two companies, there is some form of cooperation due to the common owner (Bentros, 2015).

Raivo Baum is also the only listed management board member of the producer organisation Eesti Kutseliste Kalurite Ühistu (Eesti Kutseliste Kalurite Ühistu, 2015).

He is also related to another fishing sector company: he is the only listed management board member of both Fortem Holding, and its subsidiary Caroline (E-Business Register, 2016f; Fortem Holding, 2015; Caroline, 2015). It is possible that he is also related to the owner of Fortem Holding, Ragnar Baum.

Both Fortem Holding and Caroline are also members of Eesti Kutseliste Kalurite Ühistu. Of the five members of the Eesti Kutseliste Kalurite Ühistu PO, only Abimerk does not seem to have an official relationship with Raivo Baum.

Raivo Baum companies exhibit evidence of both vertical and horizontal integration. Vertical integration is found particularly in Morobell with activities in the wholesale, primary processing and fish catching segments. However, vertical integration is also found in Raivo Baum's role in the Eesti Kutseliste Kalurite Ühistu PO and through his investments in the freight segment.

There is also a degree of horizontal integration. This is found in Raivo Baum's investments in multiple fishing companies with the same producer organisation, as well as investments in fishing companies in Finland (see section 9.3.5).

8.3.1.3. Fortem Holding company structure

As seen in Table 25, Fortem Holding had an accumulated catch of 17,682 tonnes in the period 2011 to 2014. Annual catches fluctuated between 3,209 and 5,975 tonnes, with the highest volume caught in 2014.

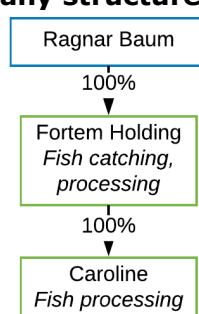
As Figure 29 shows, Fortem Holding is owned by Ragnar Baum. Fortem Holding is also the parent of Caroline. Both companies are members of Eesti Kutseliste Kalurite Ühistu PO.

According to its annual report, Caroline generates 100% of its revenue through the wholesale of fish and fish products (Caroline, 2015, p.15). This is noteworthy, since it is also a member of the PO, and has a quota allocated, which would imply that it also engages in fish catching. Fortem Holding, on the other hand, reports that 99% of its revenues are generated through fish catching, while 1% is generated through other services (Fortem Holding, 2015, p.27).

In 2014, Fortem Holding generated revenues of approximately € 1.2 million, up from approximately € 947,000 in 2013 (Fortem Holding, 2015, p.4-5). The company had total assets of approximately € 4.7 million in 2014 (ibid.).

Caroline generated revenues of approximately € 312,000 in 2014, up from approximately € 261,000 in 2013 (Caroline, 2015, p.3-4). In 2014, the company had total assets of approximately € 897,000 (ibid.).

Figure 29: Fortem Holding company structure



Source: E-Business Register (2016, March), *Entrepreneur: osaühing Fortem Holding (10541642)*, p. 2; Eesti Kutseliste Kalurite Ühistu (2015), *Annual Report 2014*, p. 18; Fortem Holding (2015), *Annual Report 2014*, p. 8; Caroline (2015), *Annual Report 2014*, p. 15.

Fortem Holding exhibits evidence of vertical integration through its activities in both fish catching and fish processing. As noted above, it is curious that Caroline, the fish processing company, is also a member of the PO. This gives Fortem access to a large quota and would thus imply a degree of vertical integration.

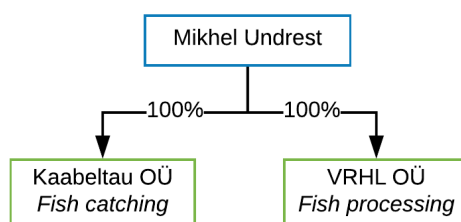
There is probably further cooperation with the Raivo Baum companies described above, and possibly influence in Eesti Kutseliste Kalurite Ühistu through the connection with the investor. Ragnar Baum is the only listed management board member of both Fortem Holding and its subsidiary Caroline (E-Business Register, 2016f; Fortem Holding, 2015; Caroline, 2015).

8.3.1.4. Kaabeltau

As seen in Table 25, Kaabeltau had an accumulated catch of 17,589 tonnes in the period 2011 to 2014. Annual catch volumes fluctuated between 3,862 and 4,920 tonnes.

Kaabeltau is owned by Mikhel Undrest. As Figure 30 shows, the investor also owns VRHL, a fish processing company. In 2014, Kaabeltau generated revenues of approximately € 1.1 million, in 2013 this was € 1.3 million. The company had total assets of € 4 million in 2014. 100% of Kaabeltau's revenues are generated through fish catching at sea (Kaabeltau, 2015).

VRHL also had revenues of approximately € 1.1 million in 2014, down from € 1.2 million in 2013. It had total assets of € 1.5 million in 2014. 99% of VRHL's revenues are generated through fish processing and preservation. The remaining revenues are generated through other services (VRHL, 2015).

Figure 30: Kaabeltau company structure

Source: Kaabeltau (2015), Annual Report 2014, p. 3; E-Business Register (2016, March), Entrepreneur: osaühing Kaabeltau (10121058), p. 2; E-Business Register (2016, March), Entrepreneur: Osaühing VRHL (10538284), p. 2; VRHL (2015), Annual Report 2014.

75% of the fish sold by Kaabeltau were sold on the Estonian market, the remaining 25% were sold on the Latvian market. Kaabeltau sold the majority of its fish to affiliate VRHL and producer organisation Eesti Kalapüügiühistu, of which it is a member (Kaabeltau, 2015, p. 3).

Mikhel Undrest has created vertical integration in his portfolio through investments in both fish catching company Kaabeltau and fish processing company VRHL. This is further supported by the clear off-take relationship between the two companies as mentioned by Kaabeltau indicating informal vertical integration (Kaabeltau, 2015).

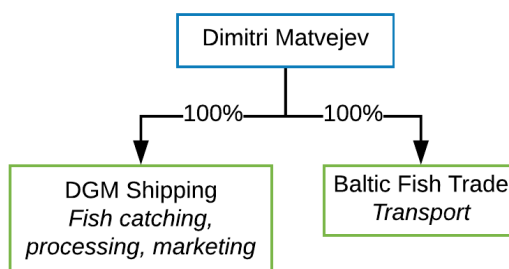
8.3.1.5. DGM Shipping

As seen in Table 25, DGM Shipping's accumulated catch for the period 2011-2014 was 14,907 tonnes. Catch volumes fluctuated between 3,211 and 4,050 tonnes.

Figure 31 shows that DGM Shipping is owned by Dimitri Matvejev, who also owns Baltic Fish Trade. 100% of Baltic Fish Trade's revenues are generated through freight transport by road (Baltic Fish Trade, 2015, p. 17). Given its relationship with DGM Shipping, and its name, it is likely that this is cold chain transport to support the fish processing sector.

93% of DGM Shipping's revenues in 2015 were generated through fish processing, the remaining 7% were generated from fish catching (DGM Shipping, 2016, p. 18).

DGM Shipping's revenue was € 2.8 million in both 2015 and 2014 (DGM Shipping, 2016, p. 4-5). In 2015, it had total assets of € 8.5 million (ibid.). The company is a member of the same PO as Hiiu Kalur subsidiary Krapesk and its subsidiary, Eesti Traalpüügi Ühistu.

Figure 31: DGM Shipping company structure

Source: E-Business Register (2016, March), Entrepreneur: AKTSIASELTS DGM SHIPPING (10061617), p. 2; DGM Shipping (2016), Annual Report 2015, p. 18; Baltic Fish Trade (2015), Annual Report 2014.

The company markets its fish under the brand Briis. DGM Shipping has at least seven shops in Estonia where its products are sold (DGM Shipping, n.d.).

DGM Shipping's investments throughout the value chain from fish catching, to fish processing, to marketing are evidence of vertical integration. The company structure does not show any evidence of horizontal integration, nor did this research identify any other investments by Dimitri Matvejev in other fisheries sector companies.

8.3.1.6. Monistico

As seen in Table 25, Monistico's accumulated annual catch for the period 2011-2014 was 11,558 tonnes. Annual catch volumes fluctuated between 1,448 and 2,750 tonnes.

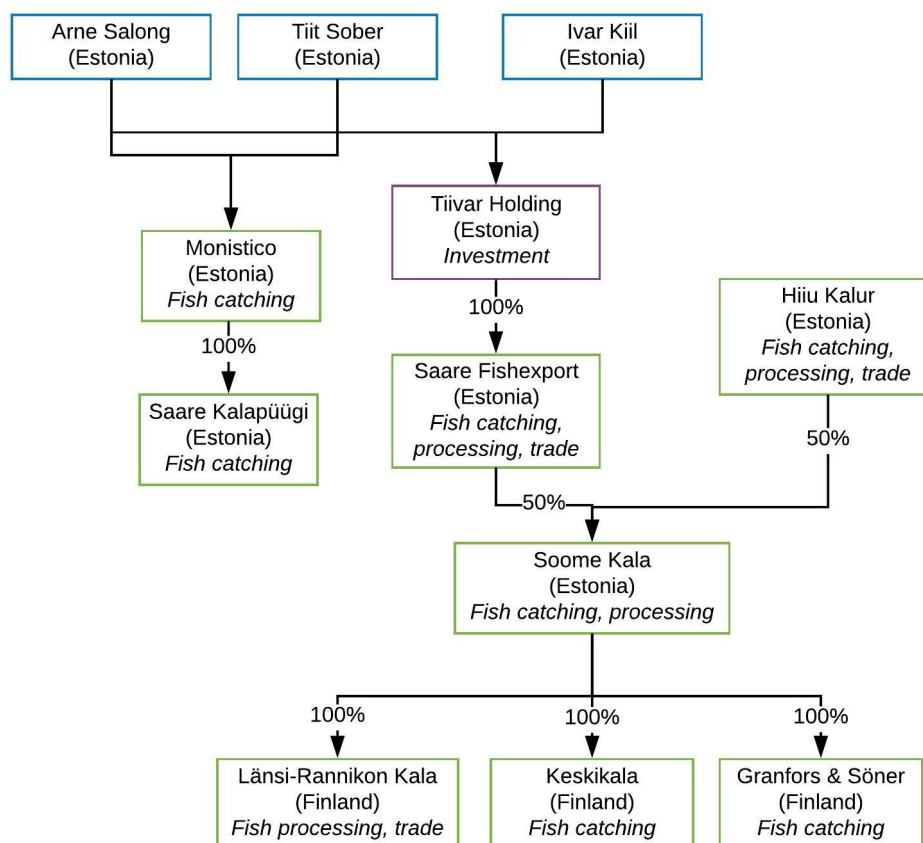
Monistico is owned by Arne Salong and Tiit Sober (see Figure 32). Monistico and its subsidiary Saare Kalapüügi are both members of the Eesti Kalapüügiühistu PO.

The owners of Monistico also own Tiivar Holding together with Ivar Kiil. Kiil is also a member of the management board of Saare Kalapüügi. Tiivar Holding is the parent of Saare Fishexport which, together with Hiiu Kalur (see section 8.3.1.1), owns Soome Kala, a fish catching company with fish catching and fish processing subsidiaries in Finland.

Monistico generated revenues of approximately € 920,000 in 2014, down from approximately € 1.4 million in 2013 (Monistico, 2015, p. 4-5). In 2014, the company had total assets of € 5.2 million (ibid.). 75% of Monistico's revenues were generated through fish catching (ibid.). The remaining 25% were generated through retail sales (ibid.).

In 2014, Saare Kalapüügi generated revenues of approximately € 270,000, down from € 507,000 in 2013 (Saare Kalapüügi, 2015). The company had total assets worth € 1.4 million in 2014. 100% of Saare Kalapüügi's revenues came from fish catching (ibid.).

Figure 32: Monistico company structure



Source: E-Business Register (2016, March), *Entrepreneur: Osaühing Monistico (10574096)*, p. 2; Monistico (2015), *Annual Report 2014*, p. 3; E-Business Register (2016, March), *Entrepreneur: SAARE KALAPÜÜGI OÜ (10582492)*, p. 2; E-Business Register (2016, March), *Entrepreneur: Osaühing Soome Kala (12261319)*, p. 2; Osaühing Soome Kala (2015), *Annual Report 2014*, p. 10; E-Business Register (2016, March), *Entrepreneur: Tiivar Holding OÜ (12346850)*, p. 2; E-Business Register (2016, March), *Entrepreneur: Osaühing SAARE FISHEXPORT (10723478)*, p. 2.

Saare Fishexport, the direct parent of Soome Kala which has subsidiaries in Finland, generated revenues of € 3.3 million in 2014, down from € 5.6 million in 2013 (Saare Fishexport, 2015). The company had total assets of approximately € 5.2 million in 2014

(ibid.). 95% of Saare Fishexport's revenues were generated through fish processing (ibid.). 90% of Saare Fishexport's products are exported to Europe, the majority of which is exported to the Ukraine (Saare Fishexport, n.d.).

The owners of Monistico have created a portfolio that exhibits evidence of both vertical and horizontal integration. Vertical integration is found in the fish catching and retail of fish by Monistico and its subsidiary. There does not seem to be any processing activity. The owners also have investments through Tiivar Holding in Saare Fishexport, which does have fish processing activities.

There is also evidence of horizontal integration. Domestically, this is through the membership of Monistico and its subsidiary Saare Kalapüügi in the Eesti Kalapüügiühistu PO. Investments in Finland are evidence of international horizontal integration.

8.3.1.7. Abimerk

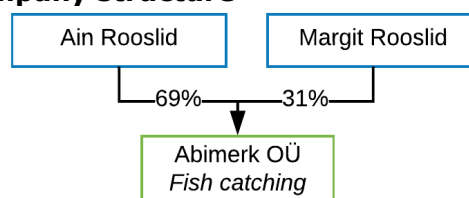
As seen in Table 25, Abimerk had an accumulated catch of 7,599 tonnes in the period 2011-2014. Annual catch volumes fluctuated between 1,448 and 2,750 tonnes.

Abimerk is a member of the Eesti Kutseliste Kalurite Ühistu PO. It is the only member of that PO for which this research did not identify any links to Raivo Baum.

In 2014, Abimerk had revenues of approximately € 340,000, down from € 518,000 in 2013 (Abimerk, 2015, p. 3-4, p 22). The company had total assets of € 1.6 million in 2014 (ibid.). Nearly 100% of its revenues are derived from sea fishing (ibid.).

As Figure 33 shows, Abimerk is owned by Ain and Margit Rooslid. It does not have any subsidiaries. This research did not identify any other companies linked to the owners.

Figure 33: Abimerk company structure



Source: Abimerk (2015), *Annual Report 2014*, p. 22.

The company structure of Abimerk does not show any signs of formal integration.

8.3.1.8. Keskpunkt

Keskpunkt had an accumulated catch of 7,223 tonnes in the period 2011 to 2014 (see Table 25). Annual catches fluctuated between 1,762 and 1,862 tonnes.

Keskpunkt is a member of the Eesti Kalapüügiühistu PO of which Hiiu Halur, Kabeltau and Monistico are also member.

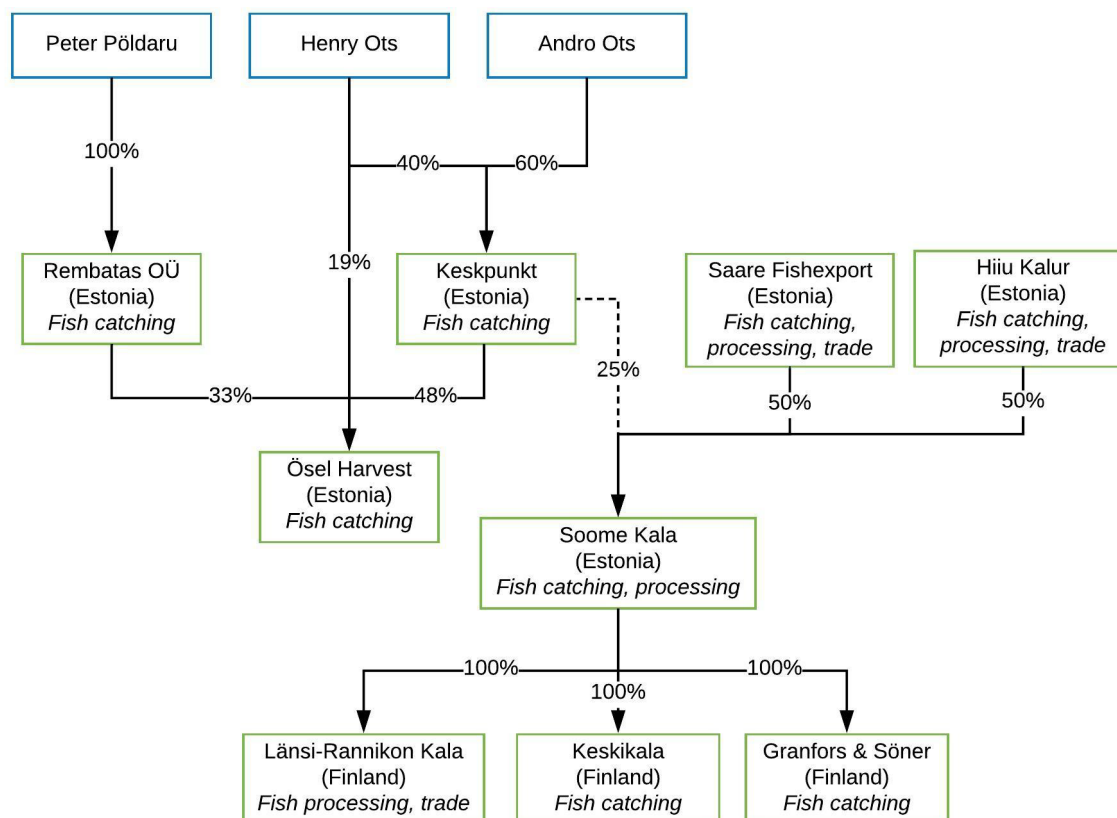
Figure 34 shows that Keskpunkt is owned by entrepreneurs Andro and Henry Ots. Keskpunkt, together with owner Henry Ots, is also majority shareholder of Ösel Harvest. Ösel Harvest's parent company, Rembatas, is engaged in an unrelated sector. It generates almost 60% of its revenues from the retail sale of motor vehicle parts and accessories, 19% from freight transport by road, and the remainder from other business activities not related to the fisheries sector (Rembatas, 2015, p. 18).

The Keskpunkt annual report claims that Keskpunkt also owns 25% of Soome Kala, with fishing activities in Finland. However, Soome Kala documentation does not verify this. Soome Kala documentation refers to Hiiu Kalur and Saare Fishexport as its shareholders (E-Business Register, 2016i, p. 2).

Keskpunkt derived 64% of its revenues from fish catching in 2014 (Keskpunkt, 2015, p. 4-5, p. 22). A further 34% was generated through the wholesale of fish products (ibid.). In 2014, Keskpunkt generated revenues of € 980,000, down from € 1.4 million in 2013 (ibid.). The company had total assets of € 5.2 in 2014 (ibid.).

Ösel Harvest is an aquaculture company: 97% of its revenues were attributed to aquaculture in 2014 (Ösel Harvest, 2015, p. 4-5, p. 21). The company had revenues of € 228,000 and € 184,000 in 2014 and 2013 respectively (ibid.). Ösel Harvest had total assets of € 4.2 million in 2014 (ibid.).

Figure 34: Keskpunkt company structure



Source: Keskpunkt (2015), *Annual Report 2014*, p. 8, 22; E-Business Register (2016, March), *Entrepreneur: osaühing Ösel Harvest (10297188)*, p. 2; E-Business Register (2016, March), *Entrepreneur: OÜ Rembatas (11288228)*, p. 2; E-Business Register (2016, March), *Entrepreneur: Osaühing Soome Kala (12261319)*, p. 2; Osaühing Soome Kala (2015), *Annual Report 2014*, p. 10.

Keskpunkt shows evidence of integration. Firstly, there is vertical integration within Keskpunkt itself as it is engaged in both fish catching and the wholesale of fish products. There is also a form of horizontal integration through its investment in Ösel Harvest which is engaged in a different, yet very similar, industry segment. Finally, if the Keskpunkt documentation is correct, then Keskpunkt is also engaged in horizontal and vertical integration through its investments in Soome Kala with its activities in the fish catching and fish processing sectors in Finland and Ukraine. However, Soome Kala documentation does not refer to Keskpunkt.

8.3.1.9. Smaller companies

Smaller companies, such as Saare Rand and Novirinia Kalaparadiis, show fewer signs of integration (E-Business Register, 2016c; E-Business Register, 2016h; E-Business Register, 2016g; Novirinia Kalaparadiis, 2015).

8.3.2. Baltic coastal fishing segment

Table 26 provides an overview of the 15 largest fishing companies in the Baltic coast segment based on total catch between 2012 and 2014. The remainder of this section will provide an analysis of the company structures of the top-5 companies in terms of accumulated catch in the Baltic coastal segment.

Table 26: Baltic coastal catch by company (tonnes)

Company	2012	2013	2014	Total
Japs AS	490	285	432	1,206
Margus Post	414	358	420	1,192
Ain Mango	369	312	304	985
Krüger & Mets ÖU	286	286	374	946
Valdo Palu Rannametsa talu	202	223	231	656
Aldo Koppel	108	235	306	649
Tinurek ÖU		5	626	632
Arso EE OÜ	190	261	176	627
Maido Kaja	149	342	130	621
Viktor Niit	152	259	198	610
Võiste Sadama OÜ	295	48	265	608
Peipus ÖU	126	155	300	581
Kalju Vatt	137	155	272	564
Kevadräim OÜ	60	146	288	494
Tahkuranna Kala OÜ	138	146	162	446

Source: Ministry of Rural Affairs (2015, January), *Baltic Coast: Commercial fishing catch by company, 2014*; Ministry of Rural Affairs (2014, January), *Baltic Coast: Commercial fishing catch by company, 2013*; Ministry of Rural Affairs (2013, January), *Baltic Coast: Commercial fishing catch by company, 2012*.

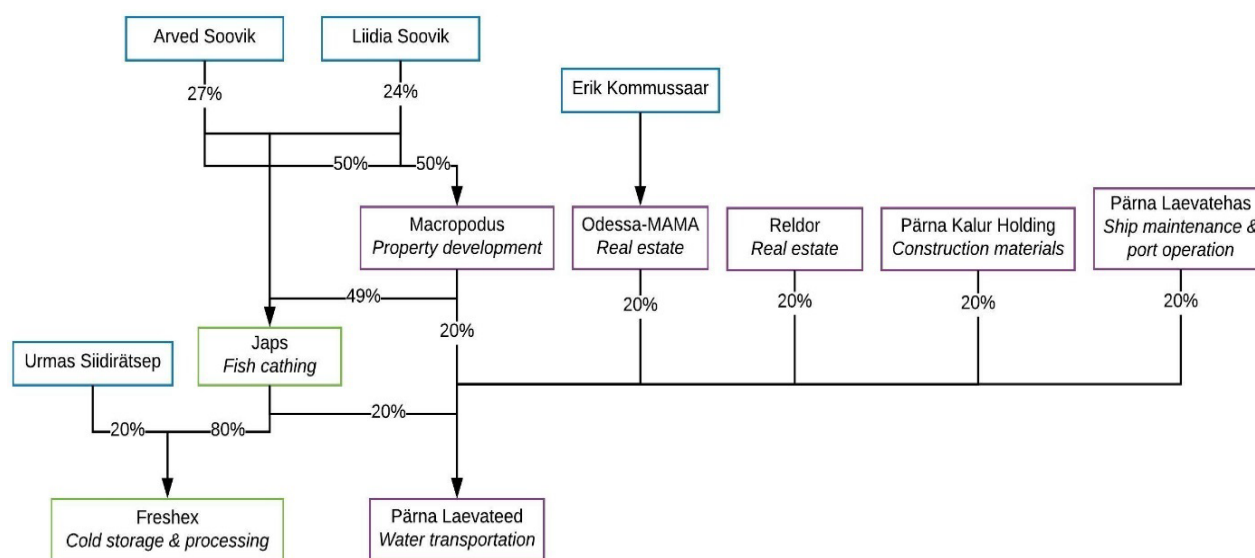
8.3.2.1. Japs

As seen in Table 26, Japs had an accumulated catch of 1,206 tonnes in the period 2012-2014. Annual catch volumes fluctuated between 285 and 490 tonnes.

Figure 35 shows the company structure of Japs. Japs is owned by Arved and Lidia Soovik, also through another company they own, Marcopodus. Japs has one fish processing and storage subsidiary, Freshex Group, which is partly owned by Urmas Siidirätsep.

In 2014, Japs generated revenues of € 6.2 million, down from € 6.3 million in 2013 (Japs, 2015, p. 4-5, p. 22). The company had total assets of € 5.6 million in 2014. Nearly all of Japs' revenue is generated through its processing segment (ibid.).

Japs subsidiary Freshex Group generated € 976,000 in revenue in 2014, down from € 1.1 million in 2013 (Freshex Group, 2014, p. 4-5, p. 22). The company's total assets were approximately € 869,000 in 2014 (ibid.). As with Japs, Freshex's revenues were almost all derived from fish processing (ibid.).

Figure 35: Japs company structure

Source: Macropodus (2015), *Annual Report 2014*, p. 9; E-Business Register (2016, March), *Entrepreneur: Osaühing Macropodus* (10795740), p. 2; E-Business Register (2016, March), *Entrepreneur: aktsiaselts Japs* (10033414), p. 2; Japs (2015), *Annual Report 2014*, p. 9; E-Business Register (2016, March), *Entrepreneur: OÜ FRESHREX GROUP* (10483531), p. 1-2; E-Business Register (2016, March), *Entrepreneur: Osaühing Pärnu Laevateed* (10374730), p. 2; E-Business Register (2016, March), *Entrepreneur: Osaühing Pärnu Laevateed* (10374730), p. 2; E-Business Register (2016, March), *Entrepreneur: Odessa-MAMA OÜ* (10951179), p. 1; Odessa-MAMMA (2015), *Annual Report 2014*, p. 15; E-Business Register (2016, March), *Entrepreneur: aktsiaselts Pärnu Laevatehas* (10124004), p. 1; E-Business Register (2016, March), *Entrepreneur: aktsiaselts Pärnu Kalur Holding* (10052469), p. 1; E-Business Register (2016, March), *Entrepreneur: Aktsiaselts Reldor* (10007753), p. 1.

Japs shows signs of vertical integration through its investments in both fish catching and fish processing segments. The owners also have a diversified portfolio of investments likely designed to spread risk.

8.3.2.2. Margus Post

In the period 2012 to 2014 Margus Post had an accumulated catch of 1,192 tonnes. Yearly catch volumes fluctuated between 358 and 420 tonnes (see Table 26).

Margus Post is registered as a sole trader, or individual entrepreneur (E-Business Register, 2016e).

8.3.2.3. Ain Mango

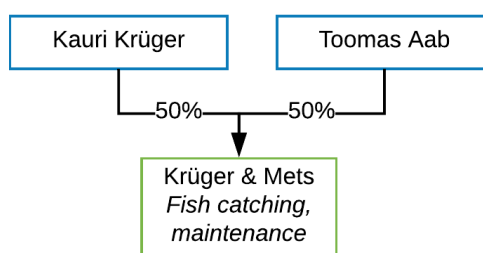
As seen in Table 26, Ain Mango had a total accumulated catch of 985 tonnes in the period 2012 to 2014. Annual catches varied between 304 and 369 tonnes.

Ain Mango is registered as a sole trader, or individual entrepreneur (E-Business Register, 2016a).

8.3.2.4. Krüger & Mets

In the period 2012 to 2014, Krüger & Mets had an accumulated catch of 946 tonnes, with fluctuations between 286 and 374 tonnes (see Table 26).

As Figure 36 shows, Krüger & Mets is owned by Kauri Krüger and Toomas Aab, it does not have any registered subsidiaries.

Figure 36: Krüger & Mets company structure

Source: E-Business Register (2016, March), *Entrepreneur: Osaühing Krüger & Mets (10314834)*, p. 2.

In 2014, Krüger & Mets generated revenues of € 130,000, up from € 108,000 in 2013 (Krüger & Mets, 2015). Total assets were € 273,000 in 2014 (ibid.). 84% of revenues were derived from fish catching, the remaining 16% were generated through maintenance services (ibid.).

8.3.2.5. Valdo Palu Rannametsa talu

As seen in Table 26, Valdo Palu Rannametsa talu had an accumulated catch of 656 tonnes in the period 2012 to 2014.

Valdo Palu Rannametsa talu is registered as a sole trader, or individual entrepreneur (E-Business Register, 2016j).

8.4. Integration

There are pronounced differences in the levels and forms of integration in the two main sea fishing segments in Estonia. Little integration is observed in the Baltic coastal fishing segment. Most of the fishing companies are in fact sole traders or individual entrepreneurs. Only Japs AS shows a degree of vertical integration within the Baltic coastal fishing segment.

In the Baltic Sea and Gulf of Riga fishing segment, both vertical and horizontal integration are more common. Vertical integration is found most commonly in the form of integration in the fish catching and fish processing sectors, and slightly less commonly also in distribution.

Horizontal integration is common in three forms. Firstly, through investments in companies belonging to the same PO. Secondly, through investments in fish catching companies in other POs. Finally, investments in companies active in the fisheries of another country.

In an interview, Mart Undrest, executive director of Eesti Kalapüügiühistu, stated that vertical integration in Estonian fisheries had reached its limits after 15 years. Most fishing companies own their own processing and storage facilities. Additionally, his PO also has processing and storage facilities (Undrest, 2016). Mauno Leppik, CEO of Eesti Traalpüügi Ühistu, also states that his PO has processing and production facilities. The PO further provides trade and distribution services to its members (Leppik, 2016).

Within POs there is also integration. Both Undrest and Leppik report that their POs have processing and storage facilities. Leppik, of Eesti Traalpüügi Ühistu, states that the PO also markets the fish. It does so under the Krapesk brand which belongs to Krapesk, and ultimately Hiiu Kalur. He argues that this is because Krapesk has a traditionally strong brand name. The prices for fish sold by the fish catching companies to the PO are a matter of negotiation, essentially a *"friendly discussion with yourself"*, according to Leppik. He states that the PO was created to produce more efficiently and to improve sales. It was created by fishermen for fishermen. Profits are split between the members, although the PO has not made significant profits to date according to Leppik (Leppik, 2016). In fact, in 2014 the PO made a loss of € 61,000, and in 2013 it made a loss of € 46,000 (Eesti Traalpüügi Ühistu, 2015).

The producer organisation Eesti Traalpüügi Ühistu is majority owned by Krapesk (see section 8.3.1.1), and by extension its parent Hiiu Kalur. Leppik could not comment on what this ownership structure implied for the running of the PO, beyond stating that the PO was created by and for the fishermen (Leppik, 2016).

Regarding investments by fishing companies in more than one PO, Undrest states that individual companies that are a member of one PO cannot be a member of another PO in Estonia. There are historical and legal reasons for this. However, the owners can have several companies active in different POs. Hiiu Kalur is the only example Undrest is aware of where the owner makes use of such a construction (Undrest, 2016).

The dominant form of horizontal integration in the Estonian fisheries sector is international investment, particularly Estonian fisheries sector companies investing in Finland. Finnish companies do not invest in the Estonian fisheries sector (Leppik, 2016). This is because it is cheaper for Estonian companies to invest in the Finnish fisheries sector than vice-versa (Undrest, 2016).

Both Undrest and Leppik state that Estonian investments in the Finnish fisheries sector can be attributed to a number of factors. Firstly, Leppik reports that there has been a reduction in quotas available in Estonia, while there has been an increase in market demand. Fish catching companies are therefore investing in Finland to gain access to more quotas. Additionally, fish processing companies (often part of the same group of companies) are concerned by the surplus capacity caused by a reduction in Estonian quotas which would decrease the economic efficiency of the processing and distribution facilities (Leppik, 2016).

Undrest adds that Estonian quotas have sold out, whereas in Finland they have not. Investments are made into existing Finnish fishing companies to gain access to the quotas. Finland operated what is known as the Olympic fisheries management system, also known as the "race for fish", until 2017. This refers to a management system that sets a quota and start date for the entire fishery and then individual boats "race" to get as much of the Total Allowable Catch (TAC) as possible before the fishery closes. It was therefore an attractive investment opportunity for Estonian fishing companies (Undrest, 2016).

However, as of 2017 Finland no longer uses the Olympic system (see Chapter 9). Undrest believes that this will have a positive impact on the Estonian fishing companies active in Finland. There will be less pressure, better management of the fishing vessels, and the companies will become more cost effective (Undrest, 2016).

In terms of non-structural forms of vertical integration, Leppik states that a number of Finnish fish catching companies have off-take contracts with Estonian fish processing companies. He says that often these Finnish fish catching companies are actually owned by Estonian parent companies (Leppik, 2016).

Further non-structural forms of integration include the renting and swapping of quotas. Undrest states that quotas are not often bought and sold anymore. However, swapping and renting quotas is quite common. There is no formal system of swapping and renting. A system known as FishQ will be launched to provide such a service. Initially it will focus on the Baltic region, facilitating quota flexibility both nationally and internationally. Undrest reports that quota swaps and renting can currently take place at three different levels: inter-governmental, inter-company, or between individuals. There is no financial compensation for quota swaps. Differences in tonnage are used to represent the values of the different species of quota being swapped (Undrest, 2016).

In sum, there is both vertical and horizontal integration in the fisheries industry in Estonia. Vertical integration is already well-established with investments in fish catching, fish processing, and trade. Horizontal integration is driven by access to quotas. One key form this has taken is investment in the Finnish fish catching segment due to its easily accessible fish management system.

9. FINLAND

KEY FINDINGS

- **Significant international horizontal integration** in the pelagic segment – particularly by **Estonian companies**
- **Limited horizontal integration** in demersal segment as is not lucrative
- **No vertical integration** due to previously unstable resources
- Recent **introduction of company allocated quotas** will mean **adjustments to corporate strategies** in the years ahead

9.1. Composition of Finnish seafood sector

Finnish fishing companies generated € 35 million in landings income in 2015. Processing companies generated € 311 in production revenues.

Finland had a high trade deficit in fish and fish products of approximately € 330 million in 2016. The country exported € 53 million in fish products in 2016. 70% of these exports were destined for other EU countries. The main destinations for its fish and fish product exports were Estonia (40%), Denmark (14%) and Belarus (14%). Senior Ministerial Adviser for Fisheries, Ministry of Agriculture and Forestry in Finland – Risto Lampinen – believes that Finland could reduce its EU imports of fish, and re-balance their fish trade deficit because they have sufficient resources (Lampinen, 2018). The government is currently taking steps to address this issue (ibid.).

Finland imported € 383 million in fish products in 2016. More than half of these imports came from other EU countries. Finland's three main import partners were Norway (40%) and Sweden (29%) followed by Estonia (6%).

There were 3,092 registered commercial fishing vessels in Finland in 2016. Less than half of these were active. Vessel were registered to 1,199 enterprises. 287 enterprises – 24% of all fishing enterprises – owned more than one vessel.

The fish catching segment in Finland employed 358 fte in 2015. The fish processing segment employed approximately twice as many workers, 748 fte.

Table 27: Finnish seafood sector key figures

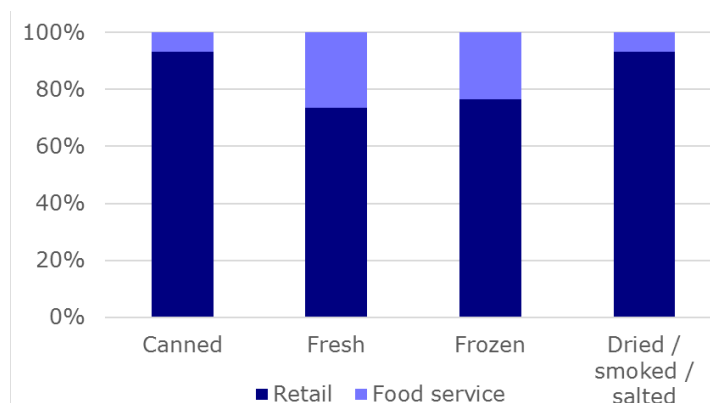
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	3,092	
	Active vessels (2016)	1,499	48%
	Average vessel tonnage per vessel (2015, GT)	6	
	Average vessel tonnage per enterprise (2015, GT)	13	
<i>Enterprises</i>	Number of fishing enterprises (2015)	1,199	
	Enterprises with more than one vessel (2015, number, % enterprises)	287	23.9%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	35	0.02%
	Average landing income per fte employed (2015, €)	97,022	
	Average landing income per vessel (2015, €)	12,784	
	Average landing income per enterprise (2015, €)	28,969	

Segment	Measure	Value	Proportion
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	358	0.02%
	Average employment per vessel (2015, fte)	0.1	
	Average employment per enterprise (2015, fte)	0.3	
Processing	Processing production (2016, € mln, % GDP)	311	0.14%
	Employment in the fish processing sector (2015, fte, % workforce)	748	0.03%
	Average processing production per fte employed (2015, €)	416,176	
Trade	Trade balance (2016, € mln, % GDP)	-330	0.15%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	53	0.02%
	1. Estonia (2016, € mln, % export)	21	40%
	2. Denmark (2016, € mln, % export)	8	14%
	3. Belarus (2016, € mln, % export)	8	14%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	383	0.18%
	1. Norway (2016, € mln, % import)	152	40%
	2. Sweden (2016, € mln, % import)	111	29%
	3. Estonia (2016, € mln, % import)	25	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

84% of fish products sold in Finland are sold through the retail segment, the remainder is sold in food service. About 40% of the fish products that enter the market are sold as fresh, canned and dried/smoked/salted account for approximately a quarter each. As Figure 37 shows, more than 90% of canned fish and dried/smoked/salted is sold in retail outlets. Approximately three quarters of fresh and frozen fish in Finland is sold through retailers.

Figure 37: Finland: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Table 28 shows that more than 90% of fresh fish in Finland is sold unbranded. The other categories of fish products are predominantly sold as branded products.

Table 28: Finland: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	3%	77%	75%	91%
Unbranded	92%			
Own label	5%	23%	25%	10%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Important brands for fresh fish include Chipsters with a market share of approximately 19% of the fresh segment, and Cermaq (Norway, part of Mitsubishi (Japan)) with around 13% (FFT, 2018). Findus (part of Nomad (UK) holds a market share of around 34% in the frozen fish segment of the country, HKScan accounts for around 30% of this segment (ibid.). In the canned segment, Orkla (Norway) accounts for approximately 37% of the Finnish market, while the King Oscar brand (part of Thai Union (Thailand)) holds a share of around 23% of the canned segment (ibid.). Kalaneuvos Oy (formerly known as V. Hukkanen Oy), holds a share of around 28% of the dried/smoked/salted fish segment in Finland, while Saaristomeren (part of Heimunkala) accounted for approximately 19% of this segment (ibid.)

9.2. Producer organisations

There are no fisheries producer organizations recognized by the EU in Finland. The Finnish Association of Professional Fishers (Suomen Ammattikalastajaliitto – SAKL), represents commercial fishermen in Finland.

Until 2017 the Finnish fisheries were totally “free” for TAC and quota species (Lampinen, 2018). The Finnish system was known as the “Olympic fisheries” system (ibid.). There was a race to the finish approach, where restrictions on fishing efforts were only put in place when Finland’s quota for a particular species was almost used up (ibid.). These species were therefore especially interesting and lucrative (ibid.). Before last year (2017), these species were interesting for Estonian fishermen as well as they were subject to quota restrictions in their own country (ibid.).

An individual quota system has now been implemented in Finland in 2017 (Lampinen, 2018). The individual quota system has been introduced for herring and sprat in the pelagic/trawling segment (ibid.). In the demersal/coastal segment, the individual quota management system was introduced for salmon (ibid.). The quota is still state-owned; however, it is given to companies (ibid.). This has moved responsibility of quota management, and sustainable fishing practices, from the state to companies (ibid.). Quota is allocated per company, not per vessel (ibid.). Companies can sell the rights/shares between each other (ibid.). For pelagic/trawling companies, the quota concentration limit is set at 20% (ibid.). For demersal/coastal fishermen/companies the quota concentration limit is set at 15% for salmon quota per company/group. Companies are granted the rights to use the common resources for a period of ten years per company, with renewal every five years (ibid.). The fisheries management system is now fairer, as fishermen can adjust their strategies better to maximize income and minimize costs, and to overcome situations where they may briefly not be able to fish, e.g. if their vessel needs repairs (ibid.).

Finland’s responsible agencies have learned from Iceland’s experience regarding the introduction of individual quotas (Lampinen, 2018). The pelagic and coastal herring and sprat quotas have been separated (ibid.). Companies with pelagic herring and sprat quotas cannot buy coastal herring and sprat quota shares (ibid.). They have been separated to protect

employment in the coastal fisheries segment. The separation is meant to avoid negative socio-economic impacts as the coastal segment employs more people but doesn't have the capital resources that companies in the pelagic segment have (ibid.).

The biggest and most important quota in Finland is the Baltic herring (Lampinen, 2018). Last year this quota was so big that it wasn't filled, i.e. completely harvested (ibid.). For 2018, it has been cut by 32%, making Baltic herring a scarce resource (ibid.).

Coastal, particularly salmon, fisheries are a very sensitive issue in Finland as it affects the livelihoods of coastal fishermen (Lampinen, 2018). Salmon is mostly targeted by individual Finnish fishermen (ibid.). Cod has a small catch history in Finland, and the TACs are kept low to replenish the stocks (ibid.). Therefore, it is now not really targeted by Finnish vessels (ibid.).

9.3. Company analysis

The Finnish fisheries are separated into two segments: pelagic and coastal. In the pelagic segment, a small number of large companies operate. The coastal segment is characterized by a large number of small-scale fishermen. There are no large companies in this segment (Lampinen, 2018).

The following companies have been identified as the largest fish catching companies in Finland (Svensson, 2016). These companies operate exclusively in the country's pelagic trawl segment:

- Kotka Fisheries Oy
- Menhaden Oy
- Omega Shipping AB
- Seagull AB Fishing Company
- Shedfish
- Sonnfish
- Troolari Olympos

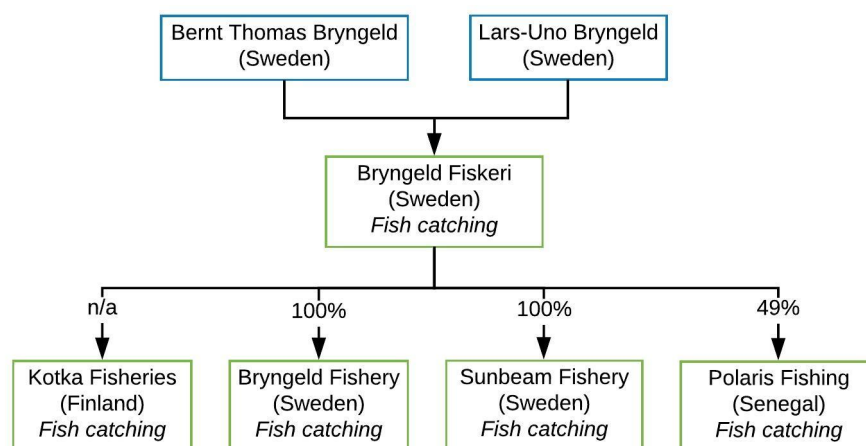
The remainder of this section will provide a detailed analysis of the company structures of these companies.

9.3.1. Kotka Fisheries

Ab Kotka Fiskeri - Kotkan Kalastus Oy is a fish catching company based in Turku, Finland. It is owned – at least in part – by Swedish fishing company Bryngeld Fiskeri. Bryngeld Fiskeri is owned by the Bryngeld family. Bryngeld Fiskeri operates its own fishing vessels directly, as well through its subsidiaries and associates in Sweden, Finland and Senegal (Figure 38).

In 2015, Kotka Fiskeri generated revenues of approximately € 738,000 (Orbis, 2018u). This was approximately half of the turnover it generated in 2014, € 1.4 million (ibid.). The company held total assets worth approximately € 2.3 million in both 2014 and 2015 (ibid.).

Parent company, Bryngeld Fiskeri, generated revenues of € 2.6 million in 2017, up from € 2.3 million in 2016 (Bryngeld Fiskeri, 2017). In 2017, Bryngeld Fiskeri owned total assets worth € 9.8 million (ibid.). This was composed of, among others, € 6.1 million in vessels, € 774,000 in fishing rights, and € 1.5 million in receivables from related parties (ibid.). The company also had € 5.4 million in outstanding loans to banks in 2017 (ibid.). In 2016, Bryngeld Fiskeri held total assets worth € 10.2 million (ibid.). This consisted of, among others, € 6.5 million in fishing vessels, € 890,000 in fishing rights, and € 2 million in receivables from related parties (ibid.). In 2016, the company had € 6.2 million in outstanding bank loans.

Figure 38: Kotka Fisheries company structure

Source: Orbis (2018, July), "Current subsidiaries: Bryngeld Fiskeri", viewed in July 2018; Bryngeld Fiskeri (2017, November), *Financial Report: 2016-07-01 to 2017-06-30*; Svensson, A. (2013, October), "Bryngeld", *Njord*, online: <http://fiske.zaramis.se/2013/10/21/bryngeld/>, viewed in April 2018; Orbis (2018, July), "Current directors: Ab Kotka Fiskeri - Kotkan Kalastus Oy", viewed in July 2018.

From the above description and company structure it can be seen that Kotka Fisheries is part of a horizontally structurally integrated fishing group. The Swedish parent company has fish catching activities both in Sweden, Finland and Senegal. Bryngeld Fiskeri does not seem to have engaged in structural vertical integration.

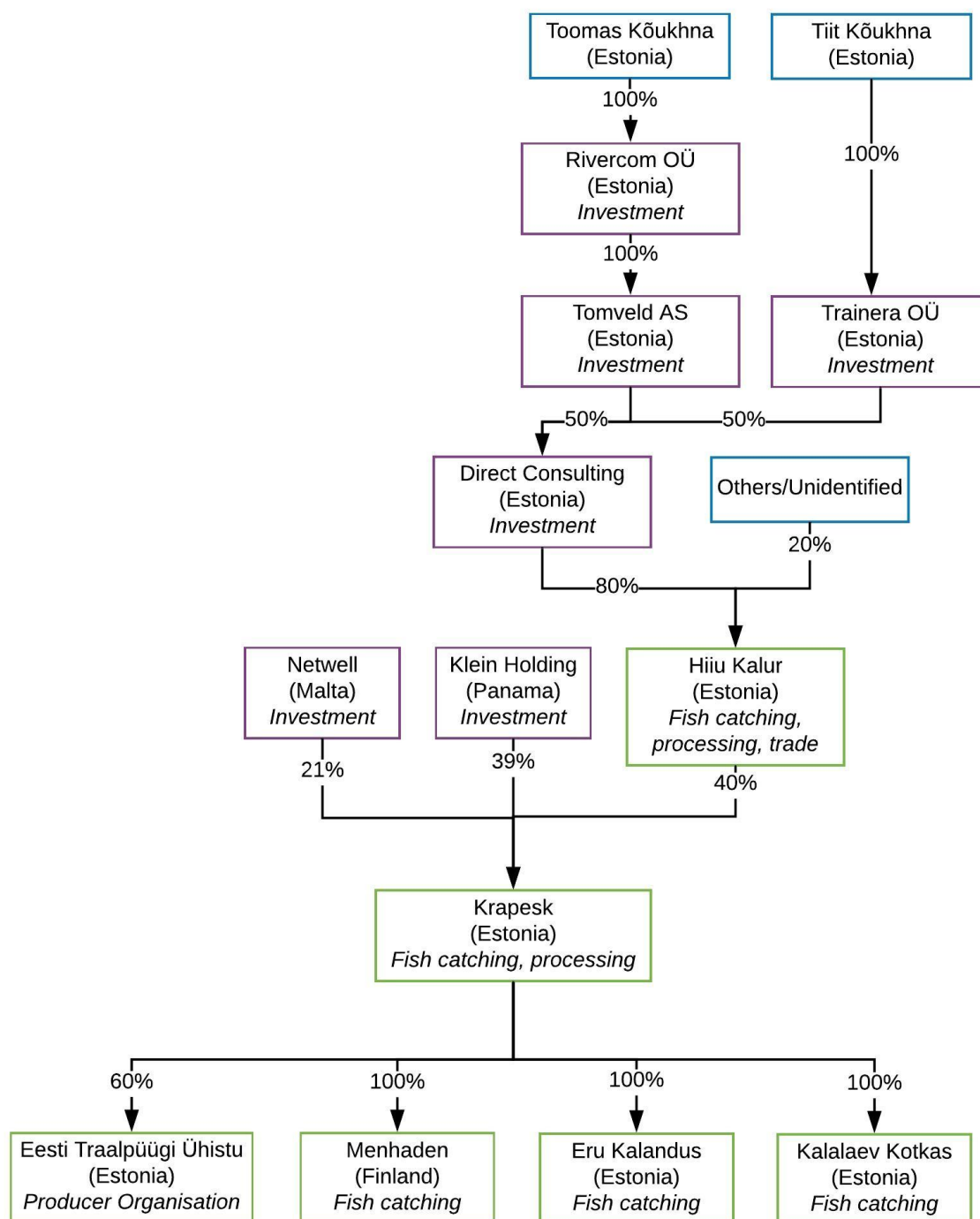
9.3.2. Menhaden

Menhaden is a pelagic fishing company active in Finland. Figure 39 shows that Menhaden is the direct subsidiary of Estonian Krapesk. Krapesk in turn is an affiliate of Hiiu Kalur (see section 8.3.1.1). Krapesk is engaged in fish catching and fish processing itself and through its subsidiaries. The company also owns 60% of an Estonian PO. Section 8.3.1.1 provides more details regarding Menhaden's Estonian parent companies.

Hiiu Kalur is one of the joint venture partners in Läätsa Kalatööstus. The latter produces frozen seafood, marketed under the Kaluri, Saaremaa and Subland brands (Läätsa Kalatööstus, 2018).

In 2015, Menhaden generated approximately € 1 million in revenues, down from € 1.5 million the previous year (Orbis, 2018aj). The company owned total assets worth approximately € 1.3 million in 2015, up from € 605,000 in 2014 (ibid.). The latter indicates a large acquisition.

Figure 39: Menhaden company structure



Source: Orbis (2018, July), "Current shareholders: Krapesk", viewed in July 2018; Krapesk (2018, May), *Annual Report 2017*; Orbis (2018, July), "Current shareholders: Direct Consulting", viewed in July 2018; Orbis (2018, July), "Beneficial owners: Kajax Fishexport", viewed in July 2018; *Njord* (2018, March 10), "Finland's largest fishing boats 2018", online: <http://fiske.zaramis.se/2018/03/10/finlands-storsta-fiskebatar-2018/>, viewed in July 2018; E-Business Register (2016, February), Entrepreneur: Aktsiaselts Tomveld (10419504), p. 2; E-Business Register (2016, February), Entrepreneur: Osaühing Trainera (10649836), p. 2.

From the company structure and description above it is evident that Menhaden is part of a large fully-integrated seafood group. The Estonian group which it belongs to has engaged in both structural horizontal integration through its investments in fishing companies in Estonia and Finland, and structural vertical integration through its investments in fish catching, processing and trading companies, as well as wholesale in frozen foods.

9.3.3. Omega Shipping

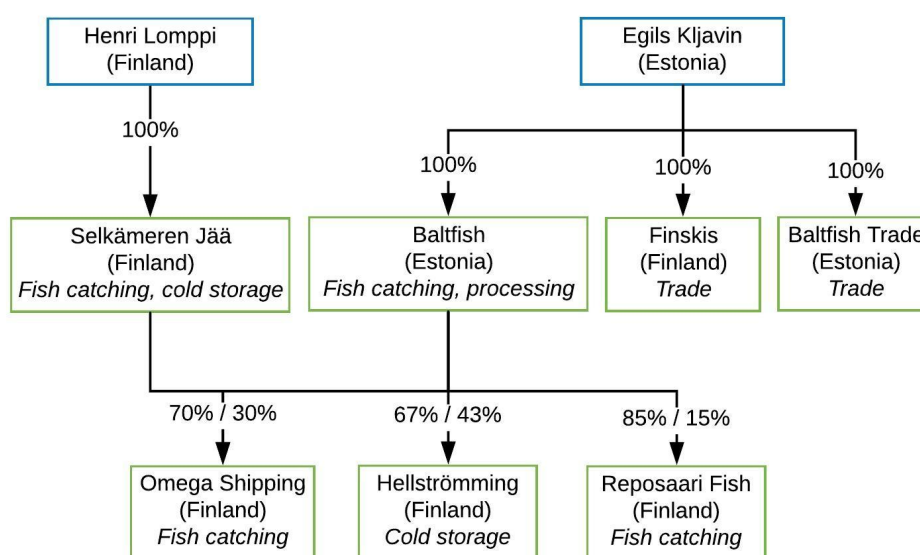
Omega Shipping is a joint venture between two Finnish and Estonian companies. Finnish company Selkämeren Jää – owned by Henri Lomppi – owns 70% of Omega Shipping. The remaining 30% belong to the Estonian company Baltfish – owned by Egils Kljavin. Lompi and Kljavin also jointly own two other companies: Hellströmning and Reposaari Fish (Figure 40).

Omega Shipping operates two vessels, Hanne and Westfjord (Selkämeren Jää, 2018a). Both vessels target Baltic herring and sprat and are both certified (ibid.). Selkämeren Jää engages in fish breeding and freezing (Selkämeren Jää, 2018b). Hellströmning sorts and freezes Baltic Herring (Hellströmning, 2018). This is then delivered to affiliate company Finskis – which is owned by Kljavin – in the same harbour (ibid.).

In 2016, Omega Shipping generated revenues of approximately € 2.3 million (Orbis, 2018ak). A year earlier it generated € 1.9 million (ibid.). In 2016, the company held total assets worth € 3.3 million, up from € 2.8 million in the previous year (ibid.).

Baltfish reports that due to the closure of the market of the Commonwealth of Independent states, it did not earn any revenue in 2016 (Baltfish, 2017). Affiliate company Baltfish Trade generated approximately € 547,000 in 2016 (Baltfish Trade, 2017). The previous year it generated revenues of approximately € 554,000 (ibid.). In 2016 and 2015, Baltfish Trade owned total assets worth approximately € 1.9 million (ibid.).

Figure 40: Omega shipping company structure



Source: Orbis (2018, July), "Current shareholders: Omega Shipping", viewed in July 2018; Baltfish (2017), *Annual Report 2016*; Selkämeren Jää (2018, July), "Home", online: <https://www.selkamerenjaa.fi/en/>, viewed in July 2018; Finskis (2018, July), "Contact", online: <http://www.finskis.fi/yhteystiedot2>, viewed in July 2018.

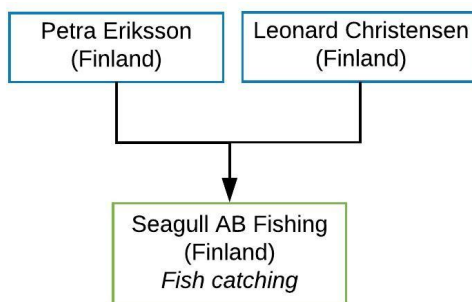
From the company structure and descriptions above it is apparent that Omega Shipping is part of a structurally integrated group. Fish catching is predominantly taking place in Finland. However, at the processing and trade level there is structural horizontal integration through the activities carried out in Finland and Estonia. Structural vertical integration is seen in the integration between fish catching, processing and trade activities.

9.3.4. Seagull AB Fishing Company

Seagull Fishing company is a Finnish pelagic trawling company based in Åland. It is owned by two Finnish individuals – Petra Eriksson and Leonard Christensen. At the reporting date in February 2017, Seagull Fishing had generated an annual turnover of € 3.2 million (Orbis,

2018a). This was almost double the turnover it generated the year before - € 1.5 million. In February 2017, the company held total assets worth € 3 million, while the year before it held assets worth approximately € 693,000 (ibid.).

Figure 41: Seagull Fishing company structure



Source: Orbis (2018, April), "Director report: Leonhard Johannes Christensen", viewed in April 2018; Orbis (2018, April), "Director report: Petra Lea Isabel Eriksson", viewed in April 2018; Orbis (2018, April), "Current shareholders: Fiskefartyget Seagull Ab", viewed in April 2018.

The above company structure indicates that Seagull Fishing has not engaged in vertical or horizontal integration.

9.3.5. Shedfish

Finnish pelagic trawling company Shedfish is part of the Estonian Raivo Baum group of companies (see section 8.3.1.2). With Estonian, Finnish and Lithuanian fish catching affiliates it is part of a structurally horizontally integrated seafood group. Moreover, with its parent company and affiliates engaged in primary processing and distribution, there is also structural vertical integration present in the company structure.

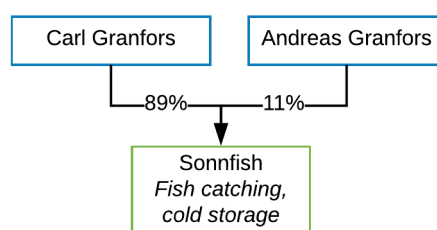
In 2016, Shedfish generated approximately € 2.3 million in revenues (Orbis, 2018am). The year before it had generated approximately € 1.7 million (ibid.). In 2016, the company held total assets worth approximately € 3.0 million, a slight increase from the year before when Shedfish held total assets of € 2.8 million (ibid.).

As the company structure in section 8.3.1.2 and the description above shows, Shedfish is part of a structurally vertically and horizontally integrated seafood group.

9.3.6. Sonnfish

Finnish pelagic trawling company Sonnfish is owned by father Carl and son Andrea Granfors (Sonnfish, 2018a). The company operates one trawler – Sonnskär FIN-13-V (ibid.). Sonnfish has a fish logistic centre with a capacity of 5,000 tonnes (Sonnfish, 2018b). Most of Sonnfish's frozen fish is exported to Russia, with a small part sent to Moldova (ibid.). The remainder is sold to feed producer Molpe Frys to be used as feed in mink farms (ibid.).

Sonnfish generated annual revenues of approximately € 1.7 million at the reporting date in February 2017 (Orbis, 2018an). A year earlier it had generated slightly more turnover - € 1.9 million (ibid.). In 2017, the company held total assets worth € 1.4 million (ibid.). The year before this was € 1.3 million (ibid.).

Figure 42: Sonnfish company structure

Source: Orbis (2018, July), "Current shareholders: Sonnfish", viewed in July 2018.

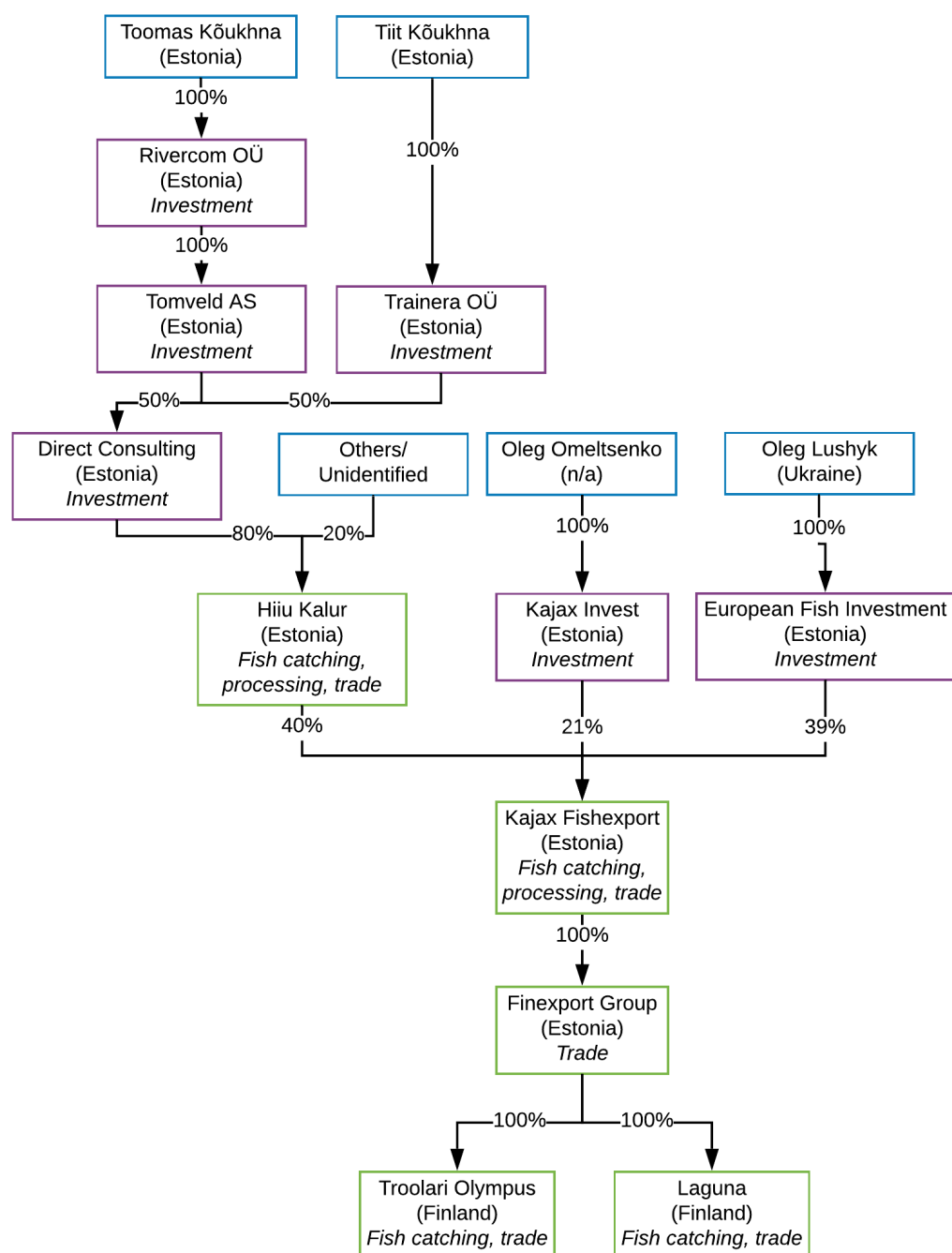
From the company structure and description above, Sonnfish does not appear to have undertaken horizontal integration. There is marginal vertical integration through the cold store facilities.

9.3.7. Troolari Olympos

Finnish pelagic trawling company Troolari Olympos is part of the Estonian Hiiu Kalur group (see section 8.3.1.1), and an affiliate therefore of Finnish fish catching company Menhaden (see section 9.3.2). Figure 43 presents a focused company structure of companies directly related to Troolari Olympos. Troolari Olympos and its Finnish fish catching sister company Laguna are both owned by Finexport Group, which in turn is owned by Kajax Fishexport. The latter is ultimately owned by Estonian investors Toomas Kõukhna and Tiit Kõukhna, Ukrainian investor Oleg Lushyk, and Oleg Omeltsenko.

Troolari Olympos generated revenues of € 2.4 million in 2017, and held total assets worth € 2.2 million (Orbis, 2018ao). Kajax Fishexport reports consolidated figures for its subsidiaries including Troolari Olympos and Laguna. In 2017, Kajax Fishexport generated revenues of € 8.2 million, an increase of approximately € 5 million from 2016 when its turnover was € 3.6 million (Kajax Fishexport, 2018). In 2017, the company held total assets worth € 14 million, an approximate € 10 million increase from the year before when it held total assets worth € 3.8 million (ibid.). This was due to its acquisition of Troolari Olympos and Laguna, as well as its purchase of an additional fishing vessel with quota in Estonia (ibid.).

It should be noted that the managing director of Troolari Olympos and Laguna – Mauno Leppik – is also the managing director of Estonian pelagic fisheries producer organization Eesti Traalpüügi Ühistu (Orbis, 2018ap; Eesti Traalpüügi Ühistu, 2018).

Figure 43: Troolari Olympus company structure

Source: Kajax Fishexport (2018, June), *Annual Report 2017*; Orbis (2018, July), "Current subsidiaries: Hiiu Kalur", viewed in July 2018; Orbis (2018, July), "Current shareholders: Direct Consulting", viewed in July 2018; Orbis (2018, July), "Beneficial owners: Kajax Fishexport", viewed in July 2018; *Njord* (2018, March 10), "Finland's largest fishing boats 2018", online: <http://fiske.zaramis.se/2018/03/10/finlands-storsta-fiskebatar-2018/>, viewed in July 2018; E-Business Register (2016, February), Entrepreneur: Aktsiaselts Tomveld (10419504), p. 2; E-Business Register (2016, February), Entrepreneur: Osaühing Trainera (10649836), p. 2.

From the company structure and description above it is clear that Troolari Olympos and its sister company Laguna are part of a large structurally vertically and horizontally integrated seafood group. The group has fish catching activities in Finland and Estonia, and fish processing activities in Estonia. The level of integration is characterized by the fact that the managing director of the two Finnish fish catching companies is also the managing director the Estonian pelagic fisheries producer organization.

9.4. Integration

The analysis above has shown that there is significant horizontal integration in the Finnish pelagic segment. This is predominantly foreign investment in Finnish trawlers – particularly by Estonian fishermen. There is no horizontal integration in the demersal segment, as this remains largely small-scale. Approximately 300 coastal fishermen catch 25,000 individual salmon (Lampinen, 2018). Therefore, salmon fishing can only be one part of their income (ibid.). Moreover, in Finland, demersal fishermen are scattered all along the coast (ibid.). There are no real fishing ‘villages’ as you might find in other countries (ibid.). There are also no villages that are totally dependent on fisheries, potentially limiting the ability or need to horizontally integrate (ibid.). Previously, the coastal segment was seen as a low-cost segment, however, the costs are now increasing due to measures that need to be taken to mitigate seal damage (ibid.). Given these costs, and the limited scale of coastal fishing in Finland, the segment is not very lucrative and therefore not attractive to larger companies (ibid.).

There has been limited vertical integration in both the demersal and pelagic segments. This is mainly due to instability of raw material supply (Lampinen, 2018). There has been vertical integration in aquaculture though (ibid.). One of the biggest processing companies bought the biggest aquaculture companies (ibid.). It can be observed that processing companies apply for aquaculture licenses in order to guarantee supply of raw materials (ibid.).

Senior Ministerial Adviser for Fisheries, Ministry of Agriculture and Forestry in Finland – Risto Lampinen – believes that this thinking may also start to apply to coastal and pelagic/trawling segments (Lampinen, 2018). In the pelagic/trawling segment there has not been much vertical integration so far, but there is the expectation that this will increase in the future. The individual quota management system brings more stability in the supply of raw materials (ibid.). This stability is a key component in considering the development of processing facilities. Now, because the resource is scarce, processing companies mostly make (long-term) deals with fishing companies (ibid.). Lampinen believes that in the future there will be full value chain integration and optimization in the Finnish fisheries (ibid.).

There is not much vertical integration in Finnish coastal fisheries (Lampinen, 2018). Almost all coastal fishermen are doing some processing of their own catch, e.g. head-gut(-tail) and/or filleting (ibid.). Lack of raw material is an issue for all sectors. If there were more fish it would be easier to engage in vertical integration (ibid.). Lampinen states that the pelagic/trawling segment has overcome its raw material problem, and it is now time for the coastal segment to do so too (ibid.). The goal of the introduction of the TAC quota management system for salmon was to incentivize fishermen to concentrate more on generating value from salmon rather than increasing income from the amount of salmon they harvest (ibid.).

Lampinen believes that the individual quota system will be the main driver for vertical and horizontal integration (Lampinen, 2018). Fishermen need to be more business-minded under the new management system (ibid.). It is expected that fleet sizes in both the pelagic and demersal segments will decrease as fewer vessels are needed to catch the full quota (ibid.). In the pelagic/trawling segment it has already been observed that smaller vessels have been sold to bigger companies (ibid.). Lampinen argues that some concentration is good, but employment is also important (ibid.). Concentration is good for profitability (ibid.). Fishermen can buy shares from retired fishermen or those that no longer want to fish, as happened for example in Denmark (see Chapter 7) and the United Kingdom (see Chapter 25) (ibid.).

As has been noted above, there is significant foreign investment – particularly by Estonian companies – in the Finnish pelagic segment. Lampinen argues that Estonian companies had a clear advantage over Finnish companies because the ITQ system was introduced in Estonia

in 2004 (Lampinen, 2018). Estonians were very interested in buying Finnish vessels (ibid.). The most important markets for Baltic herring and sprat are Eastern Europe and Russia (ibid.). Estonian fishermen are more familiar with these markets, explaining their interest in Finnish quotas for these species (ibid.).

There has also been some interest from Swedish fishermen to invest in the Finnish pelagic segment, however, less than from Estonians (Lampinen, 2018). This is likely because in contrary to Estonia, for Sweden fishing activities in the North Sea are more important than in the Baltic Sea (ibid.).

10. FRANCE

KEY FINDINGS

- Approximately 18,000 fte employed in fish catching and processing sectors
- Fish and seafood market estimated to be worth US\$ 10 billion, 3rd largest in Europe
- **Limited structural vertical** integration
- **Structural horizontal integration mainly domestic**, increased investments by Spanish fishing companies
- **Limited non-structural vertical** integration due to varied catch composition
- **Quota leasing is illegal**, quota swapping is common

10.1. Composition of the French seafood sector

The French fish and seafood market was estimated to be worth US\$ 10 billion in 2015 and forecast to reach US\$ 11 billion by 2020 (Infinity Research, 2015a, p. 27). France is the third-largest fish and seafood market in Europe, accounting for 12.56% of total European revenue in 2015 (ibid.).

France has a coastline of 18,000 km, representing 17% of the total EU-23 coastline (European Commission - Maritime affairs and Fisheries, 2016, p. 1). In total, it has 65 fishing harbours with access across the Atlantic Ocean, the Channel, the North Sea and the Mediterranean Sea (ibid.).

In 2015, French fishing companies generated € 1.2 billion in landings income (Table 29). Processing companies generated a further € 3.8 billion in production revenues in 2016.

France maintained a significant trade deficit in fish and fish products of € 4.1 billion. While it exported approximately € 1.5 billion, it imported € 4.6 billion worth of fish and fish products in 2016.

With 67%, the majority of France's fish imports originated from other EU member states. Its main import partners were the United Kingdom (13%), Sweden (11%) and the Netherlands (9%).

77% of France's fish exports were to other EU countries. Its largest export partners were Spain (18%), Italy (16%) and Belgium (12%).

France had 6,835 registered fishing commercial fishing vessels in 2016, of which 83% were active. These vessels were registered to 5,961 enterprises. In 2015, 713 enterprises – 12% of all fishing enterprises – owned more than one vessel.

The fish catching segment employed approximately 6,865 fte. The fish processing segment had almost twice as many employees, at 11,218 fte.

Table 29: French seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	6,835	
	Active vessels (2016)	5,683	83%
	Average vessel tonnage per vessel (2015, GT)	25	
	Average vessel tonnage per enterprise (2015, GT)	29	

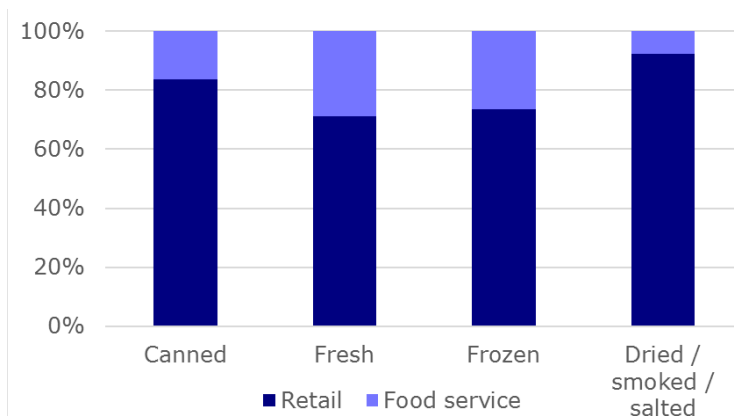
Segment	Measure	Value	Proportion
<i>Enterprises</i>	Number of fishing enterprises (2015)	5,961	
	Enterprises with more than one vessel (2015, number, % enterprises)	713	12.0%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	1,179	0.05%
	Average landing income per fte employed (2015, €)	171,698	
	Average landing income per vessel (2015, €)	170,551	
	Average landing income per enterprise (2015, €)	197,731	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	6,865	0.03%
	Average employment per vessel (2015, fte)	1.0	
	Average employment per enterprise (2015, fte)	1.2	
Processing	Processing production (2016, € mln, % GDP)	3,789	0.17%
	Employment in the fish processing sector (2015, fte, % workforce)	11,218	0.04%
	Average processing production per fte employed (2015, €)	337,743	
Trade	Trade balance (2016, € mln, % GDP)	-4,096	0.18%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	1,532	0.07%
	1. Spain (2016, € mln, % export)	271	18%
	2. Italy (2016, € mln, % export)	248	16%
	3. Belgium (2016, € mln, % export)	183	12%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	5,628	0.25%
	1. United Kingdom (2016, € mln, % import)	715	13%
	2. Sweden (2016, € mln, % import)	644	11%
	3. Netherlands (2016, € mln, % import)	510	9%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

The French fleet is highly diversified as it not only targets different species but also covers 103 types of vessels with different lengths and fishing techniques (European Commission - Maritime affairs and Fisheries, 2016, p. 1).

The French fish processing industry is highly diversified, as it covers a wide range of products (fresh and refrigerated fish fillets; the production of prepared dishes with fish, crustaceans and molluscs; smoked salmon; processing of crustaceans and molluscs; surimi; and canning) (STECF, 2015). Total processing production had a value of € 3.8 billion in 2015.

64% of the fish and fish products that enter the market in France is sold as fresh. Canned and frozen account for 13% and 16%, respectively. Three quarters of fish and fish products are sold through retail outlets, the remainder is sold through the food service sector. 84% of canned fish is sold through retail. Three quarters of fresh and frozen are sold through retail (see Figure 44).

Figure 44: France: Fish product end industry

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Fresh fish is generally sold as unbranded (see Table 30). In contrast, approximately three quarters each of canned, frozen, and dried/smoked/salted fish and fish products are sold as branded, with the remainder of each product type sold as retailers' own brands.

Table 30: France: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	10%	73%	75%	71%
Unbranded	80%			
Own label	10%	27%	25%	29%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

A key brand for fresh fish is Groupe Pomona with a market share of approximately 20% of the fresh segment (FFT, 2018). Findus (part of Nomad (UK)) is the market leader in the frozen fish segment with a market share of around 35% in France (ibid.). In the canned segment, the Le Connétable brand of Chancerelle holds around 22% of the market, while Saupiquet (part of Bolton Group (Netherlands)) accounts for approximately 20% (ibid.). Labeyrie Fine Foods holds a share of around 35% of the dried/smoked/salted fish segment in France, while MerAlliance (part of Thai Union (Thailand)) accounted for approximately 22% of this segment (ibid.)

10.2. Producer organisations

Table 31 gives an overview of the producer organisations in France. Due to lack of data availability, the number of vessels and members is not provided

Table 31: France: Recognized producer organisations

Producer organisations
Association Nationale des Organisations de Producteurs de la Pêche maritime et des Cultures marines
CME - Manche Mer du Nord
Coopérative Bretagne Nord (Cobrenord)
Coopérative des artisans pêcheurs d'Aquitaine
Fédération des organisations de producteurs de la pêche artisanale
FROM Nord (Fond Régional d'Organisation du Marché du poisson)
FROM Sud Ouest (Fonds régional d'organisation du marché du poisson dans le Sud-Ouest)
OP Conchylicoles des Pays de la Loire

Producer organisations

Op de Sud
Organisation de producteurs de Vendée
Organisation de producteurs des Conchyliculteurs du Bassin de Thau
Organisation de producteurs des pêcheurs artisans de Noirmoutier (OPPAN)
Organisation de producteurs du port de la Côtinière
Organisation de producteurs estuaires
Organisation de producteurs huîtres - Marennes-Oléron
Organisation des Pêcheurs Normands (OPN)
Organisation des producteurs conchyliculteurs de Bretagne
Organisation des producteurs de thon tropical congelé et surgelé (ORTHONGEL)
Société coopérative maritime "Les Pêcheurs de Bretagne"
Société coopérative maritime des pêcheurs de Sète-Môle (SA.THO.AN)

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission.

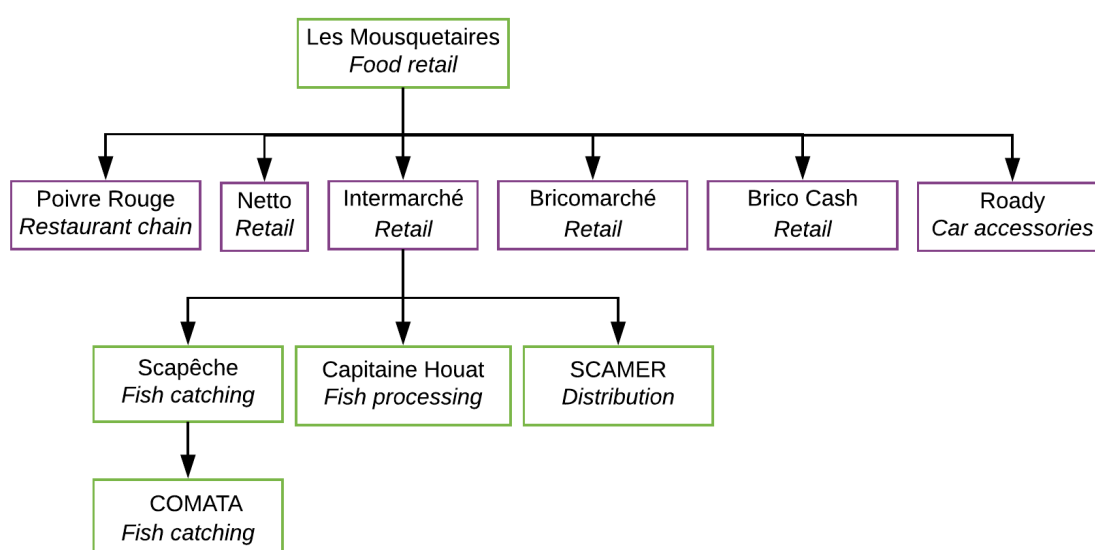
10.3. Company analysis

This section provides an analysis of the company structures of five major French fish catching companies.

10.3.1. Intermarché

Figure 45 provides an overview of the Intermarché company structure. The company is part of the Les Mousquetaires group, which engages predominantly in food retailing. Intermarché has 2,400 retail outlets in France, Portugal, Poland and Belgium (Les Mousquetaires, n.d.). In 2015, Intermarché, together with Netto (discounter chain also owned by Les Mousquetaires group), generated € 25.5 billion in turnover (ibid.). Bricomarché and Brico Cash are also part of the Les Mousquetaires group, specialising in home equipment retail, while Rody and Poivre Rouge are a car accessories retail company and a restaurant chain, respectively (ibid.).

Figure 45: Intermarché company structure



Source: Les Mousquetaires (n.d.), "Acueil - Résultats Annuels 2015", online: <http://www.mousquetaires.com/resultats-annuels-2015/>, viewed in March 2016; Scapêche (n.d.), "Qui sommes-nous - Notre histoire", online: <http://www.scapeche.fr/qui-sommes-nous/notre-histoire/>, viewed in March 2016; Les Mousquetaires (n.d.), "Acueil - Agroalimentaire - Nos Filières - Filière Mer", online: <http://www.mousquetaires.com/agroalimentaire/nos-filieres/filiere-mer/>, viewed in April 2016; Capitaine Houat (n.d.), "Qui sommes-nous - Le groupement", online: <http://www.capitainehouat.fr/qui-sommes-nous/groupement/>, viewed in April 2016; ORBIS database, viewed in April 2016.

Scapêche (Société Centrale des Armements des Mousquetaires à la Pêche), a subsidiary company of Intermarché, is a fishing company which currently owns 22 vessels and operates in five different fishing zones (Atlantic Ocean, North East Atlantic, French Southern and Antarctic Lands, North, and West of Scotland) (Scapêche, n.d.). The company has a 14,600 gross annual fishing tonnage, which covers 65% of the Les Mousquetaires group's needs (Les Mousquetaires, n.d.). COMATA, a subsidiary of Scapêche, present in French Southern and Antarctic Lands (TAAF), is a one vessel holding company (Kerguelen de Trémarec trawler) (Scapêche, n.d.; FIS, 2012).

Capitaine Houat is a fish processing company with an annual fresh fish and shrimp processing capacity of 25,000 tonnes. The company operates two processing facilities located in Boulogne-sur-Mer, France and Lanester, France (Capitaine Houat, n.d.).

SCAMER is responsible for the distribution of sea products for the Les Mousquetaires group and its retail outlets Intermarché and Netto (Les Mousquetaires, n.d.). The company distributes 40,000 tonnes of seafood per year (ibid.).

Scapêche is a vertically integrated fishing company. According to Scapêche director Romain Fageot, Scapêche is the only completely vertically integrated fishing company in France (Fageot, 2016). The founders of Scapêche had envisioned that the supermarket chain would be vertically integrated in all sectors, including meat, water and soda (ibid.). The motivation was to control the quality of the raw materials and the final product (ibid.). The founders of Scapêche also believed that it would become increasingly difficult to access raw materials (ibid.).

Originally Scapêche focused on fresh fish (Fageot, 2016). According to Fageot, if there was no vertical integration with the processing company and supermarket chain then the company would focus on the frozen segment (ibid.). Scapêche lands its harvests in France, the UK and Ireland. This is then transported to France through cold chain logistics partners (ibid.).

Scapêche has also engaged in a process of horizontal integration (Fageot, 2016). It currently has 22 active vessels (ibid.). It carried out horizontal integration through purchasing vessels and taking over companies (ibid.). Horizontal integration was motivated partly as a means to expand production capacity, but also to gain access to different fish species. This allowed to diversify the product portfolio and meet the needs of Intermarché consumers (ibid.). On an international level, the company has considered investing in fish catching companies in the UK and Ireland, for example, in order to expand its product portfolio and capacity (ibid.). However, it decided that the barriers to entry were too high and the company was already meeting consumer demand sufficiently (ibid.).

Given the company's structural vertical integration, there is no need for it to engage in non-structural vertical integration through off-take arrangements with processors (Fageot, 2016). However, Fageot reports that the company does engage in quota swapping with other producers in the POs of which it is a member, other POs in France and internationally (ibid.). He states that this is largely to compensate for by-catch (ibid.). The company does not engage in quota leasing, or in the buying and selling of quota, as these activities are illegal in France (ibid.).

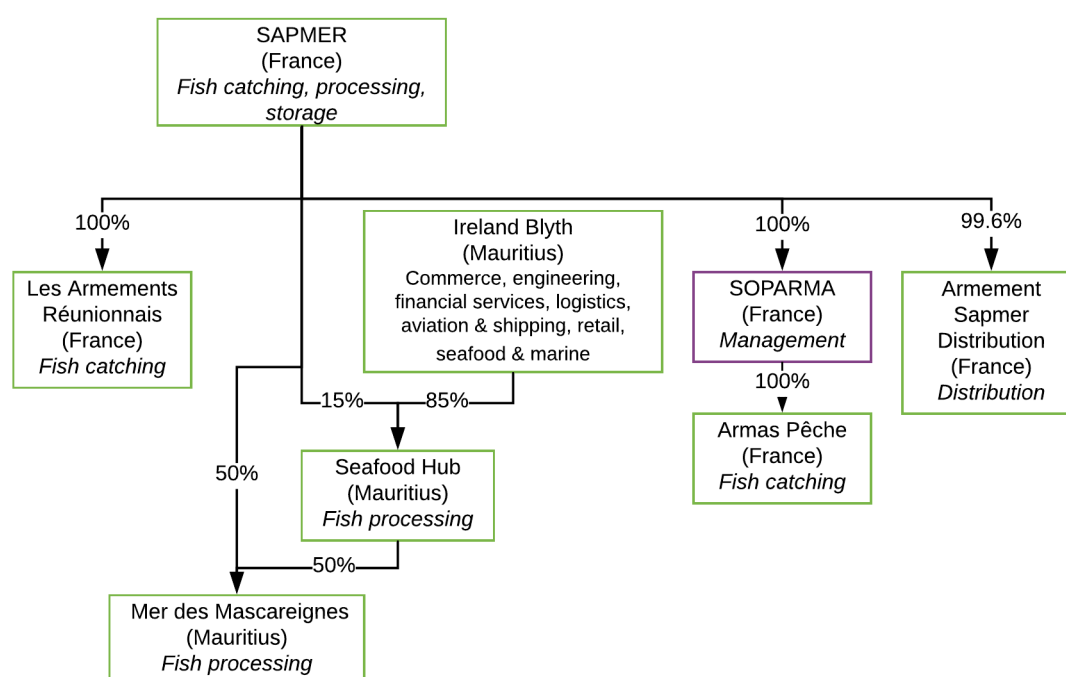
As can be seen from the analysis above, Scapêche shows evidence of both vertical and horizontal integration. Structurally, Scapêche is part of a fully-integrated value chain from fishing company, to processor, and eventually to retail outlets. Scapêche also shows evidence of structural horizontal integration, through investments in fishing vessels and companies in France. The company has not engaged in structural horizontal integration at the international level. In terms of non-structural forms of integration, Scapêche only engages in non-structural horizontal integration through quota swapping, mainly to compensate for by-catch (Fageot, 2016).

10.3.2. SAPMER

SAPMER was established in 1947 on Réunion Island (SAPMER, n.d.). The company fishes in the Indian Ocean and Southern seas, while it also has storage units on Réunion Island and in Mauritius (ibid.). SAPMER owns 12 fishing vessels and manages one patrol boat (ibid.). The company also fully owns one tuna processing factory and participates in a 50% joint venture with Seafood Hub (Mauritius) (a subsidiary of the Ireland Blyth Group) in another one, both located in Mauritius (ibid.). In 2014, the company's total assets amounted to € 173 million, while its revenue reached € 88 million (SAPMER, 2015).

Figure 46 provides an overview of the SAPMER company structure. The company's subsidiaries, Les Armements Réunionnais and Armas Pêche are the owners and operators of toothfish longliners, while Armement Sapmer Distribution controls the company's sales in mainland France. SOPARMA's sole purpose is to manage Armas Pêche (SAPMER, 2015, p. 6). Thus, SAPMER is a vertically integrated company engaging in fishing, processing and the distribution of seafood products.

Figure 46: SAPMER company structure



Source: SAPMER (2015, March), *Financial Annual Report 2014*, p. 6; ORBIS, viewed in March 2016; SAPMER (n.d.), "Corporate Area - Our logistics - Factory", online: <http://www.sapmer.com/en/factory.html>, viewed in March 2016.

SAPMER's company structure shows both vertical and horizontal integration. The company has investments in both the upstream and midstream segments, in fish catching, processing and distribution. The company does not, however, have investments further downstream in the retail sector.

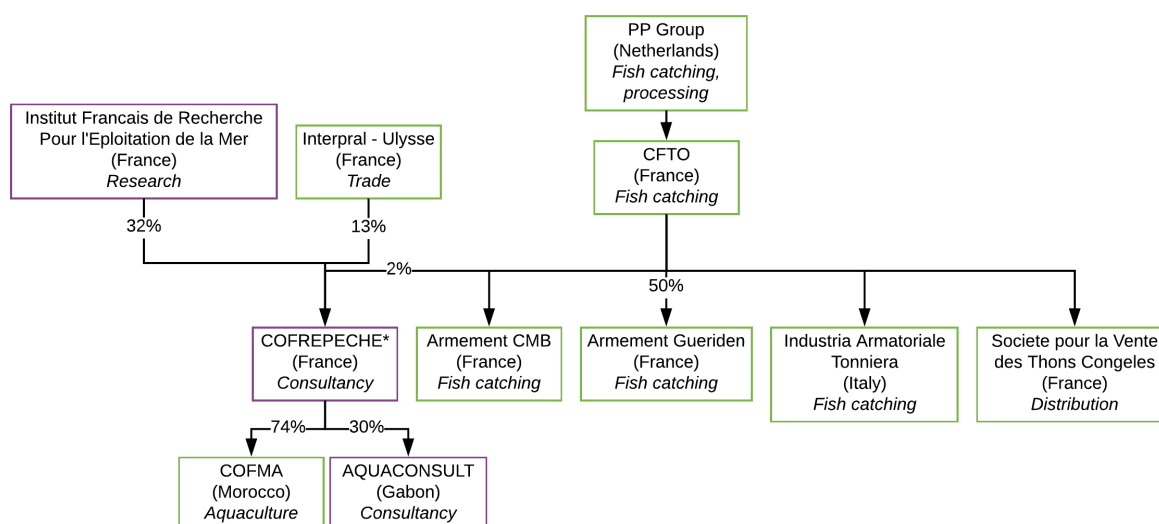
10.3.3. Compagnie Française du Thon Oceanique (CFTO)

Compagnie Française du Thon Oceanique (CFTO) was established in 2011, after the merger of Cobrecaf and France-Thon. Currently, CFTO is the largest tuna fishing company in France with 65,000 tonnes of catch annually (CFTO, n.d.). In 2016, the company owned 14 vessels operating in the Atlantic and Indian Oceans catching tropical tuna (Parlevliet & Van der Plas, 2016a). In 2014, the company's total assets amounted to € 130 million, while its revenue reached € 104 million (Orbis, 2016).

Figure 47 provides an overview of CFTO's company structure. The company's subsidiaries Armement CMB and Armement Gueriden are vessel holding companies, while Industria Armatoriale Tonniera is engaged in catching finfish (Ministere de l'Agriculture et de l'Agroalimentaire et de la Foret, 2016 and Bloomberg, n.d.). CFTO also holds 2.38% of COFREPECHE, a consultancy company specialised in the fisheries and aquaculture sector (ORBIS, 2016 and COFREPECHE, n.d.).

In 2016, Dutch Parlevliet & Van der Plas (PP Group) (see section 18.3.1) acquired CFTO. CFTO's vessels continue to operate under the French flag (Parlevliet & Van der Plas, 2016).

Figure 47: Compagnie Francaise du Thon Oceanique (CFTO) company structure



Source: ORBIS database, viewed in March 2016; COFMA (n.d.), "Qui sommes-nous?", online:

<http://www.cofma.ma/>, viewed in March 2016; Infolegale (2015, March), Fiche d'identité Entreprise - Compagnie Francaise du Thon Oceanique; COFREPECHE (n.d.), "Who We Are", online: <http://www.cofrepeche.fr/index.php/>, viewed in April 2016; Gidi Pols (2016, May 23), "Katwijkse visser koopt Bretonse tonijnvloot", de Volkskrant.

* CIC Ouest SA, Cogesal-Miko, Dimer, Nord Pêcheries, Societe Cooperative de Developpement des Industries Maritimes and Societe d'etudes et de Participations Maritimes are also each holding 2.38% of COFREPECHE

The company structure of CFTO shows evidence of particularly horizontal integration. This is evident both at the CFTO level and at the level of the ultimate parent. CFTO has investments in a number of fish catching companies located in Europe and Africa. PP Group has investments in fish catching and fish processing all over the world, however, it has no investments in fish retailing (see section 18.3.1).

The company structure of CFTO shows a low level of vertical integration. There is only one company active in distribution, with no subsidiaries active in processing.

10.3.4. Comptoir des Pêches d'Europe du Nord

Comptoir des Pêches d'Europe du Nord (EURONOR) was established in 2006 as a joint venture by two large fishing vessels owners of Boulogne-sur-Mer, the Société Boulonnaise d'Armement Le Garrec, and Nord Pêcheries. The company owns six trawlers and operates in the North Sea, West Scotland, Faeroe Island Waters, the Norwegian Sea and Spitsbergen waters (EURONOR, n.d.). In 2013, the company's total assets amounted to € 15 million while its revenue reached € 24 million (Orbis, 2016o).

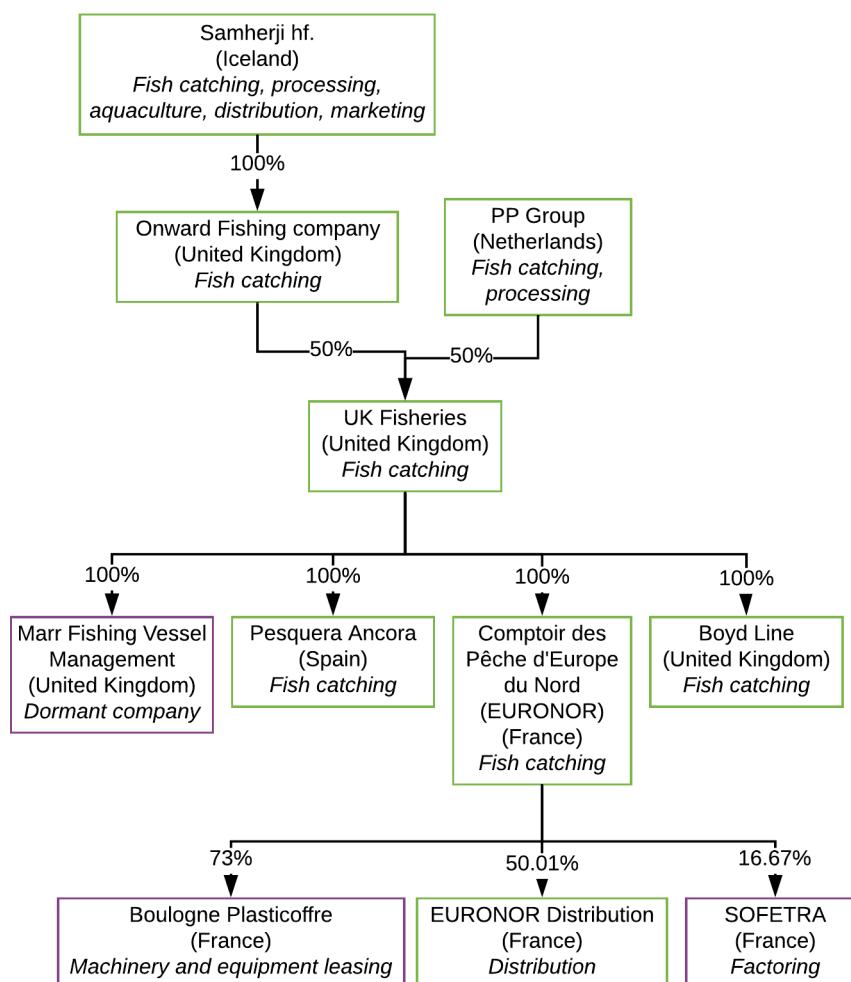
Figure 48 provides an overview of the EURONOR company structure. The company has two subsidiaries in France, Boulogne Plasticoffre (73%) and EURONOR Distribution (50.01%). The company also holds 16.67% of the French company Société de Facturation et d'Encaissement relative aux Transactions commerciales en halle de Boulogne-sur-Mer (SOFETRA) (Orbis, 2016o).

Comptoir des Pêches d'Europe du Nord is a subsidiary of UK Fisheries Ltd (United Kingdom). UK Fisheries Ltd in turn is in joint ownership by Onward Fishing Company (United Kingdom), a wholly-owned subsidiary of Icelandic Samherji hf, and a daughter company of Dutch fisheries company PP Group (see section 18.3.1). UK Fisheries has two more subsidiaries in the United Kingdom, Marr Fishing Vessel Management (currently dormant) and Boyd Line Ltd., together operate two freezer trawlers and one fresh fish trawler (Samherji, n.d.). Pesquera Ancora (Spain) is also a subsidiary of UK Fisheries. The Spanish company operates three vessels in the Barents Sea and off the coast of Canada (ibid.).

Samherji (Iceland) is a vertically integrated seafood company holding multiple subsidiaries in Iceland, the United Kingdom, Germany, Poland and the Faroe Islands, controlling a significant volume of the fishing quota and operating a fleet of fishing vessels, freezer and fresh fish trawlers, as well as multipurpose vessels. The company is also engaged in fish processing and fish farming and has its own distribution and marketing centres (Orbis, 2016o). In 2016, the company had an operating revenue of € 636 million, an increase from the € 571 million generated in the previous year. The company held total assets of € 927 million in 2016, an increase from a year earlier when it held total assets worth € 837 million, with 1,554 employees (Orbis, 2018v). See section 19.3.1 for a more detailed profile of Samherji.

PP Group (Netherlands) is also a vertically integrated company with investments in fish catching, processing, and distribution all over the world. The company does not, however, have investments in fish retail (see section 18.3.1).

Figure 48: Comptoir des Pêches d'Europe du Nord company structure



Source: ORBIS database, viewed in April 2016; Samherji (n.d.), "Home - Operations Abroad - U.K. - UK Fisheries", online: <http://www.samherji.is/en/operations-abroad/u.k./uk-fisheries/>, Samherji (n.d.), "Home -

Erlend Starfsemi - Bretland - UK fisheries", online: <http://www.samherji.is/is/erlend-starfsemi/bretland/uk-fisheries/>, viewed in April 2016; Undercurrentnews (2016, March), "Samherji, P&P-owned Spanish firm orders new 80m trawler", online: <https://www.undercurrentnews.com/2016/03/22/samherji-pp-owned-spanish-firm-orders-new-80m-trawler/>, viewed in April 2016; Samherji (n.d.), "Home - Operations Abroad - U.K. - Seagold", online: <http://www.samherji.is/en/operations-abroad/u.k./seagold/>, viewed in April 2016; Samherji (n.d.), "Home - Operations Abroad - Germany - DFFU", online: <http://www.samherji.is/en/operations-abroad/germany/dffu/>, viewed in April 2016; Icefresh (2016, December), "Icefresh GmbH und CR GmbH kaufen Anteile der norwegischen Fischereigesellschaft Nergaard AS", online: <http://www.icefreshseafood.de/de/ber/nachrichten/icefresh-gmbh-und-cr-gmbh-kaufen-anteile-der-norwegischen-fischereigesellschaft-nergaard-as/>, viewed in April 2016; Samherji (n.d.), "Home - Operations Abroad - Poland - Arctic Navigations", online: <http://www.samherji.is/en/operations-abroad/poland/arctic-navigations/>, viewed in April 2016; Samherji (n.d.), "Home - Operations Abroad - Poland - Atlantex", online: <http://www.samherji.is/en/operations-abroad/poland/atlantex/>, viewed in April 2016; Samherji (n.d.), "Home - Operations in Iceland - see here - Shares in Icelandic Companies", online: http://www.samherji.is/en/moya/page/shares_iceland/, viewed in May 2016.

10.3.5. France Pélagique

France Pélagique was established in 1988. The company engages in the catching of pelagic species such as mackerel, herring, horse mackerel, blue whiting and sardines. The company owns two freezer trawler vessels, both registered in Fécamp, France (Cluster Maritime Français, n.d.). In 2014, France Pélagique's total assets amounted to € 18 million while its revenue was € 24 million (Orbis, 2016a).

Figure 85 in section 18.3.2 presents the company structure of France Pélagique. As we can see from the figures, Cornelis Vrolijk is the parent company of France Pélagique. Cornelis Vrolijk is a Dutch family company established in 1880 (see section 18.3.2). The company, through its subsidiaries in France, the United Kingdom and the Netherlands, engages in fish catching and in the trading of pelagic fish. The company owns and operates freezer trawlers, as well as beam trawlers. The company also operates cold storage facilities in IJmuiden and Scheveningen, the Netherlands (Cornelis Vrolijk, n.d.). Cornelis Vrolijk distributes its products to the markets of Nigeria, Ivory Coast, Egypt, Eastern Europe, China and Japan (Cornelis Vrolijk, n.d.).

The company structure of France Pélagique, particularly of parent company Cornelis Vrolijk (see section 18.3.2), shows a high level of structural horizontal integration. Cornelis Vrolijk has investments in fish catching in several European countries. Additionally, because France Pélagique operates freezer trawlers, there is also a degree of primary processing being carried out aboard the fishing vessels.

10.4. Integration

From the company analysis in section 10.3 it can be concluded that there is a degree of structural vertical integration in a number of fish catching companies in France. Only one company has investments through the whole value chain from fish catching to retail. There is a higher degree of structural horizontal integration, particularly in the form of investments from foreign fish catching companies in France.

Jacques Pichon of fish producer organisation Les Pêcheurs de Bretagne states that there is little vertical or horizontal integration in his PO, and in France in general (Pichon, 2016). He reports that more horizontal integration takes place at the level of the processing companies (ibid.). Pichon notes that there are more than 800 vessels in his PO, but these are mostly owned by individuals (ibid.). Scapêche (see section 10.3.1) is a member of PO Les Pêcheurs de Bretagne. However, other examples of vertical integration tend to be very small-scale (ibid.). In such cases a fisherman may own at the most two to three vessels, and a shop from which to sell the produce (ibid.).

Pichon attributes this lack of vertical integration, particularly in his PO, to the fact that the fisheries are very mixed (Pichon, 2016). For example, in the Les Pêcheurs de Bretagne PO approximately 40 different species, in four to five different sizes, and three grades of quality are marketed each day (ibid.). The majority of the vessels in the PO are bottom trawlers,

therefore it is difficult for the fishermen to forecast their harvest (ibid.). The small number of small pelagic vessels in the PO engage in more targeted fishing (ibid.). This enables them to enter off-take arrangements. Bottom trawlers, on the other hand, are less targeted and therefore sell their produce at auction (ibid.).

There is a degree of horizontal integration in the fish catching sector domestically in France. Fishermen tend to buy vessels that have the licenses they are interested in and are active in areas where the fisherman is already active (Pichon, 2016). French fishing licences are vessel, species, fishing area, and fishing gear specific (ibid.). Licences from old boats can be moved to new boats to expand the quota capacity (ibid.).

In France, horizontal integration within the fish catching and processing sectors is not observed in terms of the international expansion of French fishing companies. On the other hand, horizontal integration is present in the wholesale sector of the fish industry (distribution of fish products). French companies fish within French waters and process the catch domestically. However, they also distribute it internationally within the EU. The most representative example of this form of integration is Les Mousquetaires group with its vast European retail presence.

A recent trend noted by the French respondents was the increased investments of Spanish fishing companies in the French fishing sector. Pichon states that this is due to several factors. Firstly, the national fixed percentage of total allowable catch (TAC), known as the relative stability key, is very low for Spain (Pichon, 2016). This has historical reasons. When Spain joined the EU and became subject to the CFP it was allocated its relative stability key on the basis of its historic track record of fish harvests (ibid.). However, at that time the capacity of its fleet was very low (ibid.). Secondly, there is still overcapacity in the Spanish fishing fleet, despite several decommissioning schemes to reduce the size of the fleet (ibid.). This puts a lot of pressure on fishing companies to access more quotas (ibid.). A number of Spanish fishermen have used the money they received from decommissioning their vessels in Spain to purchase French licences, move these on to the old Spanish vessel which is then flagged in France while the old French vessel is sold on without a fishing licence (ibid.). The Spanish companies then try to join French POs with their newly flagged French vessels. As with French companies, Spanish fishermen try to join POs that have a large proportion of the total French quota of the species that they wish to market (ibid.).

Non-structural methods of horizontal integration are not very commonly utilised, according to Pichon. France does not employ the ITQ fisheries management system. In France, fish resources are considered public goods, and the government plays a leading role in allocating fishing licences and catch quotas (Pichon, 2016). Quotas are non-transferrable and are based on historic track-records (ibid.). Quota allocation is determined at the national level and then handed down to the POs which further subdivide the quota allocations (ibid.). Given that quotas are non-transferable, there is no buying and selling of quota in France (ibid.). Romain Fageot of Scapêche states that quota leasing is illegal in France, however, there is a degree of quota swapping (Fageot, 2016).

11. GERMANY

KEY FINDINGS

- Income from fish landings, processing and trade account for **0.2% of German GDP**
- Around 70% single vessel enterprises, more than **80% small vessels** (<12metres)
- Ongoing **decline in number of fishing vessels**, especially small Baltic Sea cutters
- **High-sea freezer trawler fleet controlled by vertically integrated foreign companies**
- **Limited vertical integration** in small-scale fisheries in form of direct marketing and diversification into gastronomy and tourism
- **Structural horizontal integration both by domestic and foreign fishermen** to obtain additional vessel-bound quota
- **Number of small fishing businesses in Baltic Sea continuously decreases** due to decreasing stocks and quotas for herring and cod

11.1. Composition of the German seafood sector

In 2015, German fish catching companies generated € 141 million in landings income (Table 32). Processing companies generated a further € 2.1 billion in production revenue in 2016.

Germany had a trade deficit in fish and fish products of € 2.7 billion. In 2016, it exported € 2.3 billion in fish products, while it imported products with a value of € 5.1 billion in the same year. A third of Germany's fish imports originated from other EU countries. Its main import partners were Poland (18%), the Netherlands (14%) and Denmark (14%).

More than 88% of Germany's fish exports were destined for other EU countries. The main export destinations for German fish products were the Netherlands (17%), France (12%) and the United Kingdom (11%).

As of year-end 2017, the German fishing fleet operated a total of 1,398 vessels, continuing the decrease from previous years. 386 vessels, 28% of the fleet, are inactive (STECF, 2018). In 2015, the fleet still counted 1,478 vessels, with 404 inactive (STECF, 2016). Around 70% of enterprises only operate one vessel. In addition, a comparatively large number of enterprises operates several small vessels of different sizes and for different types of coastal fishing. The traditional role of fishing as a secondary employment remains important in Germany (BLE, 2017a). This is especially the case at the Baltic Sea coast.

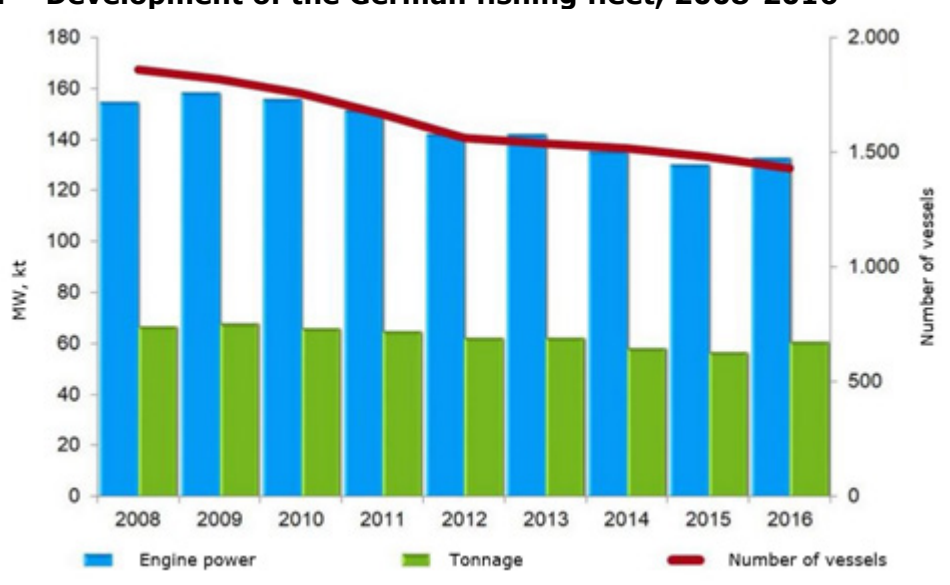
The fish catching segment employed 1,202 fte in 2015. The processing segment employed a much larger workforce, 7,160 fte. This proportional relationship is also reflected in the income generated by the different segments as described above.

Table 32: German seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2017)	1,398	
	Active vessels (2017)	1,012	72%
	Average vessel tonnage per vessel (2015, GT)	38	
<i>Enterprises</i>	Average vessel tonnage per enterprise (2015, GT)	57	
	Number of fishing enterprises (2015)	984	
	Enterprises with more than one vessel (2015, number, % enterprises)	295	30.0%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	141	0.00%
	Average landing income per fte employed (2015, €)	116,958	
	Average landing income per vessel (2015, €)	95,117	
	Average landing income per enterprise (2015, €)	142,869	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	1,202	0.00%
	Average employment per vessel (2015, fte)	0.8	
	Average employment per enterprise (2015, fte)	1.2	
Processing	Processing production (2016, € mln, % GDP)	2,067	0.07%
	Employment in the fish processing sector (2015, fte, % workforce)	7,160	0.02%
	Average processing production per fte employed (2015, €)	288,715	
Trade	Trade balance (2016, € mln, % GDP)	-2,738	0.09%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	2,338	0.07%
	1. Netherlands (2016, € mln, % export)	405	17%
	2. France (2016, € mln, % export)	283	12%
	3. United Kingdom (2016, € mln, % export)	257	11%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	5,076	0.16%
	1. Poland (2016, € mln, % import)	924	18%
	2. Netherlands (2016, € mln, % import)	721	14%
	3. Denmark (2016, € mln, % import)	685	13%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Figure 49 illustrates the development of the German fishing fleet in the years from 2008 to 2016, showing the decline in the overall number of vessels over the years. Engine power and tonnage showed a somewhat smaller decline and a slight increase in 2016.

Figure 49: Development of the German fishing fleet, 2008-2016

Source: Thünen Institut (n.d.).

In 2016, the German fishing fleet landed 238,400 tonnes of fish and seafood catch in German and foreign ports (based on landing weight), a small increase by 0.2% from the previous year. Of this total, mussels, shrimps and other crustaceans and molluscs accounted for 30,000 tonnes (BLE, 2017a). High-sea fishing contributed 144,600 tonnes or 61% based on produce sold, resulting in revenues of EUR 107.7 million. Cutter fishing accounted for 93,700 tonnes or 39%, with revenues reaching EUR 142.6 million. Foreign landings by German vessels predominantly took place in Denmark and the Netherlands. Domestic landings by German vessels totalled 78,200 tonnes or 36% in 2016, creating revenues of EUR 124.8 million (BLE, 2017).

Germany's self-sufficiency rate for fish only stands at around 24%. It remains an important industry sector in the coastal regions though, as in addition to own catch large quantities of fish are imported from around the world and further processed and marketed. This includes notably imports from Norway and China, but also from other EU countries (Federal Ministry of Food and Agriculture, n.d.).

However, the sector only plays a small role in the overall German economy. In 2015, the combined income from landings, processing and trade reached a total of EUR 5,425 million, or 0.17% of the country's GDP (Table 32). In 2016, the sea, coast and freshwater fisheries (including on-board and onshore personnel, excluding aquaculture and secondary employment) employed around 4,200 people (FIZ, n.d.). The broader fisheries and fish processing sector including wholesaling and retailing employs around 43,000 people (FIZ, n.d.).

20% of vessels are assigned to the large-scale fishing fleet (>12 metres LOA), with the remaining 80% classified as small (<12 metres LOA) scale. Small-scale vessels fish almost exclusively in the Baltic Sea. Cutters (<500 GT) above 12 metres operate in the North Sea and in the Baltic Sea (STECF, 2017). Other categorizations also split out a medium segment in the German fleet, comprising around 200 shrimp trawlers between 9 and 27 metres length, fishing exclusively in the North Sea, and around 70 ground trawling cutters (10 to 45 metres in length), fishing among other on cod and saithe (Thünen Institut, n.d.).

The overall catching capacity reached a gross tonnage (GT) of 62,742, of which the pelagic high-seas fleet accounted for 26,922 GT (43%) and the demersal high-seas fleet for 12,898 GT (21%). Another important section is formed by beam trawlers with 10,708 GT or 17% of the total gross tonnage (Federal Ministry of Food and Agriculture, 2017).

The eight large-scale high-sea trawlers that together accounted for around 64% of catching capacity in 2016 operate predominantly in the North Atlantic and Eastern Arctic area, and to some extent in African and Southern Pacific waters (STECF, 2017). Four of these fishing and processing vessels were engaged in pelagic fisheries and four were demersal trawlers (DHV, 2017). In 2018, two vessels have been replaced with new trawlers, while the old ones were sold to respectively Portugal and Poland (Deutscher Fischeri-Verband, 2018). The high-sea freezer trawler factory ships produce frozen fish, fishmeal and fish oil (Bundeszentrum für Ernährung, 2018). No high-sea fishing for white fish took place in 2016. The quota were passed on to the cutter fisheries in the form of swaps (DHV, 2017). The high-seas freezer trawler segment is controlled by two foreign companies, Icelandic Samherij via Deutsche Fischfang Union (DFFU) and Dutch Parlevliet & van der Plas (PP Group) via Doggerbank Seefischerei. Both companies are profiled below in sections 11.3.1 and 11.3.2, respectively.

The bulk of the German fleet consists of about 1,100 small, so-called 'fixed netters', ranging from 4 to 10 metres length. Small coastal fisheries operate along the Baltic shoreline and contribute 2,678 GT or around 4% of the German catches (Federal Ministry of Food and Agriculture, 2017). Their number has decreased by about one third during the last decade. This is largely driven by both decreased quota and revenues for the important target species cod and herring. Most of these small cutters are operated as a side business or hobby, with one fisherman often owning several small vessels with distinct specializations. The economic outlook for these small operators is not favourable for the near future as investment levels are low and retiring fishermen often fail in finding successors. It is expected that the number of German ports which are home to small fishing vessels will decrease further in the coming years (Thünen Institut, n.d.).

Table 33 shows the most important species caught by German fishing vessels based on landing weight. Herring, mackerel and blue whiting are on top of the list, all of them pelagic species. These top-3 species accounted for around 53% of the total value of the German fleet's landings in 2016, and around 32% of the landed volume. Important demersal species caught by the German fishing fleet are cod and pollack, together accounting for 7% of the value and 21% of the landed volume in 2016 (BLE, 2017a).

Table 33: Domestic and foreign landings of the German fishery sector, 2016

Species	Domestic		Foreign		Total landings per species		% of total landings German fleet	
	Landed volume (th t)	Value (EUR mln)	Landed volume (th t)	Value (EUR mln)	Landed volume (th t)	Value (EUR mln)	% total landed volume	% total value
Herring	27.5	10.3	39.6	17	67.2	27.3	32%	16%
Mackerel	0.2	0.1	23.3	21	23.4	21.1	11%	12%
Horse mackerel	0.2	0.1	23	9.4	23.2	9.5	11%	6%
Blue whiting	1	3.3	10.2	4	20	7.3	10%	4%
Pilchard-Sardine	-	-	19.2	6.8	19.2	6.8	9%	4%
Sprat	0.5	0.1	16	4.2	16.5	4.3	8%	3%
Cod	5.7	15.8	3.4	9.7	9.1	25.5	4%	15%
Pollack/coalfish	0.6	1.8	5	8.4	5.6	10.2	3%	6%
Plaice	1	1.3	3.9	6.4	4.9	7.7	2%	5%
Black halibut	3	14.6	1.4	6.7	4.4	21.2	2%	12%
Other	15.5	9.6	8.3	19.1	15.5	29.1	7%	17%
Total landings*	55.1	57	153.4	112.7	209	170	-	-

*excluding mussels and shrimps.

Source: BLE, 2017a.

87% of Germany's landed weight takes place under EU TACs. Germany has a non-transferable system of publicly-owned quotas in place. This includes individual quotas, pooled quotas and rationed quotas. Full-time fishers receive individual quotas. These are attached to vessels and are non-transferrable or leasable. Quotas can be used by the same operator on a different vessel, however, the quota-holding vessel needs to be kept in a sea-worthy state. POs can pool quotas, meaning that the quota associated to a particular vessel can be used by other PO members. Part-time fishers have access to a national quota (Carpenter & Kleinjans, 2017). Non-regulated fish such as perch, roach and flounder are targeted for example in the Baltic Sea as a way to compensate for economic losses from decreasing quota (Der Tagesspiegel, 2017).

Five species account for about 75% of the total amount of fish and fishery products consumed in Germany, with salmon as the favorite fish, followed by Alaska pollock, herring, tuna, and trout. Most fish products are sold via supermarkets, with discounters growing in importance also for sales of fish and seafood (USDA FAS, 2018).

As mentioned in Table 33, the German fishing fleet is partly landing its catch domestically, partly in other countries. In turn, foreign vessels also land catch in Germany.

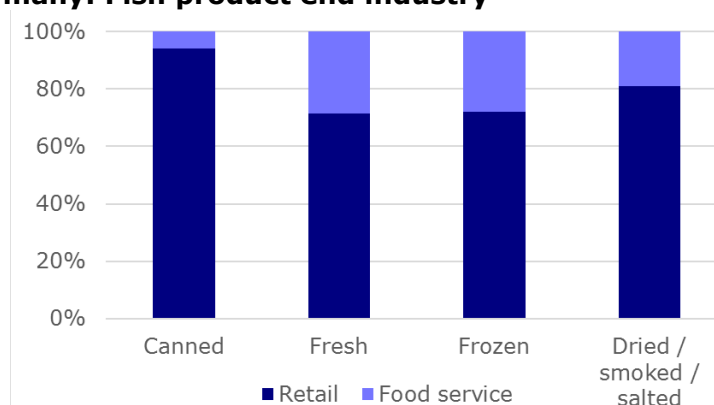
Based on value, the most important fish products on the German market were:

1. breaded fish products, fish stick: € 537 million
2. herring products: € 280 million
3. smoked salmon: € 210 million
4. fresh and chilled fish filet: € 199 million.

The fisheries industry supplies more than 1.1 million tonnes of fish and seafood to the consumer market. The per capita consumption in Germany stands at around 14 kilograms per year (Federal Ministry of Food and Agriculture, n.d.). An estimated 21,000 tonnes of fisheries products were used as feed in 2016 (BLE, 2017).

58% of the fish and fish products that enter the German market are sold as fresh, and approximately 30% is sold as frozen. Canned and dried/smoked/salted account for small proportions of all fish and fish products sold in the German seafood market. Three quarters of all fish and fish products are sold through retail outlets, the remainder is sold through food service. Slightly over 70% of all fresh and frozen fish and fish products is sold through retailers (see Figure 50). The shares of canned and dried/smoked/salted products sold through retail are higher at 94% and 81%, respectively (FFT, 2018).

Figure 50: Germany: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

The total value of fish for final human consumption in retail, catering and artisanal markets in Germany reached € 7.4 billion for fresh fish and € 3.8 billion for frozen fish in 2016, adding up to € 11.2 billion. Of this total, retailing contributed € 8.0 billion or 71.4%. Food services accounted for € 3.2 billion or 28.6%. Of fresh fish consumed on the German market, an estimated 50% are sold unbranded. Around 10% are sold under own labels and the remaining 40% are branded (see Table 34; FFT, 2018).

Table 34: Germany: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	41%	88%	82%	93%
Unbranded	50%			
Own label	10%	12%	18%	7%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

54 food companies with business activities focusing on fishery products and 20 or more employees reported revenues of € 2,13 billion in 2016. Of this total, € 1.67 billion were generated domestically, € 461 million in other countries (Bundesverband Fisch, 2017).

The largest German marketer of fish is Deutsche See, which was acquired by the Dutch PP Group (see section 18.3.1) in 2018 (JUVE, 2018). Iglo (part of Nomad (UK)) is the leading brand of frozen fish products in Germany with a market share of around 30%, while Costa (part of Apetito Group) accounts for approximately 15% of this segment (FFT, 2018). In the canned segment, Heristo with key brands Appel and Norda holds a market share of around 20%, while Hawesta (part of Thai Union (Thailand)) holds a share of around 14% of the canned segment (ibid.). In the dried/smoked/salted segment, Nadler (part of Theo Müller Group) holds a market share of approximately 18%, while Deutsche See has a share of about 10% (ibid.).

11.2. Producer organisations

Table 35 provides an overview of the producer organisations in Germany currently recognized by the European Union authorities that represent activities in deep-sea, high-sea or coastal fishing. This includes producer organisations (PO) and associations of producer organisations (APO). Due to lack of data availability, the number of vessels and members is not available for all POs.

Table 35: Germany: Recognized producer organizations

Producer Organisations
Vereinigung der deutschen Kutterfischerei GmbH (APO, Coastal fishing)
Fischereigenossenschaft Elsfleth e.G. (PO, Coastal fishing)
Erzeugerorganisation Küstenfischer Nord eG (PO, Coastal fishing)
Erzeugergemeinschaft der Nord- und Ostseefischer (PO, High-sea / Coastal fishing)
Erzeugergemeinschaft der Deutschen Krabbenfischer GmbH Cuxhaven (PO, Coastal fishing)
Erzeugergemeinschaft Küstenfischer der Nordsee GmbH, Norden/Ostfriesland (PO, Coastal fishing)
Vereinigung der Erzeugerorganisationen der Kutter und Küstenfischer Mecklenburg – Vorpommern (APO, Coastal fishing)
Seefrostvertrieb GmbH (PO, High-sea fishing)

Source: European Commission (2017, December) List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector, pp. 3-4.

- Vereinigung der deutschen Kutterfischerei: This association organises five producer organisations with activities focussing largely on coastal fishing.
 - Fischereigenossenschaft Elsfleth: this organisation of coastal fishermen has 33 members (Firmenwissen, 2018b). In 2017, the PO had 23 cutters (NWZ, 2017). It is not trading its catch itself but delivers it to fish auctions. Its cutters land the catch among others in Denmark and the Netherlands. While operating under German flag, its cutters are often operated by Dutch (NWZ, 2015). According to 2012 data, the PO landed more than half of the German catch of plaice. Other important species are cod, sole, langoustine and turbot (Fischerblatt, 2013).
 - Erzeugerorganisation Küstenfischer Nord: this organisation has around 30 members engaged in coastal fishing in the North and Baltic Sea, Skagerrak und Kattegat. They fish on cod, herring, sprat, plaice, and pollack (Küstenfischer Nord, n.d.).
 - Erzeugergemeinschaft der Nord- und Ostseefischer: the only shareholder of this PO is the Erzeugergemeinschaft der Hochsee- und Kutterfischer with 20 members.
 - Erzeugergemeinschaft der Deutschen Krabbenfischer: this PO organizes North Sea shrimp fishers, operating around 100 small cutters (Erzeugergemeinschaft der Deutschen Krabbenfischer, n.d.).
 - Erzeugergemeinschaft Küstenfischer der Nordsee: this PO has 24 members engaged in coastal fishing, operating 32 cutters. They mostly fish for North Sea shrimps, but seasonally also plaice, sole and cod which are marketed regionally (Erzeugergemeinschaft Küstenfischer der Nordsee, n.d.).
- Vereinigung der Erzeugerorganisationen der Kutter- und Küstenfischer Mecklenburg-Vorpommern: members of this associations are producer organisations engaged in local coastal fishing:
 - Erzeugerorganisation Zentrale Absatzgenossenschaft Rügenfang
 - Erzeugerorganisation Stralsund und Umgebung
 - Erzeugerorganisation Wismarbucht
 - Erzeugerorganisation Usedomfisch
- Seefrostvertrieb: the PO has eight shareholders active in high-sea fishing, all belonging to two international parent companies, PP Group (Netherlands) and Samherji HF (Iceland). These two companies are the operators of the German high-sea fleet (Firmenwissen, 2018).

11.3. Company analysis

The German fishery sector is dominated by a small number of large or medium-sized companies on the one hand, and many small operators of fishing vessels that are difficult to track down on the other hand. Based on available industry information and interviews with stakeholders, it can be assumed that the five companies profiled below are important players in the German sector.

11.3.1. Deutsche Fischfang Union (DFFU)

Deutsche Fischfang Union (DFFU) is a wholly-owned subsidiary of the Icelandic fishery company Samherji (see sections 10.3.4 and 19.3.1), via its holding company CR Cuxhavener Reederei (Germany). In 2016, DFFU reported a turnover of € 27.6 million (Firmenwissen, 2018a). Delivered in 2017, DFFU's two new freezer-trawlers, Cuxhaven and Berlin, cost more

than € 80 million and were the first new vessels added to the German high-seas fleet in more than 25 years (NDR, 2018) (Table 36). With 3,969 GT each, the replacements have a bigger capacity than the previous DFFU trawlers with respectively 2,348 GT and 3,071 GT (European Commission, 2018).

Table 36: DFFU high-seas fishing vessels, Germany

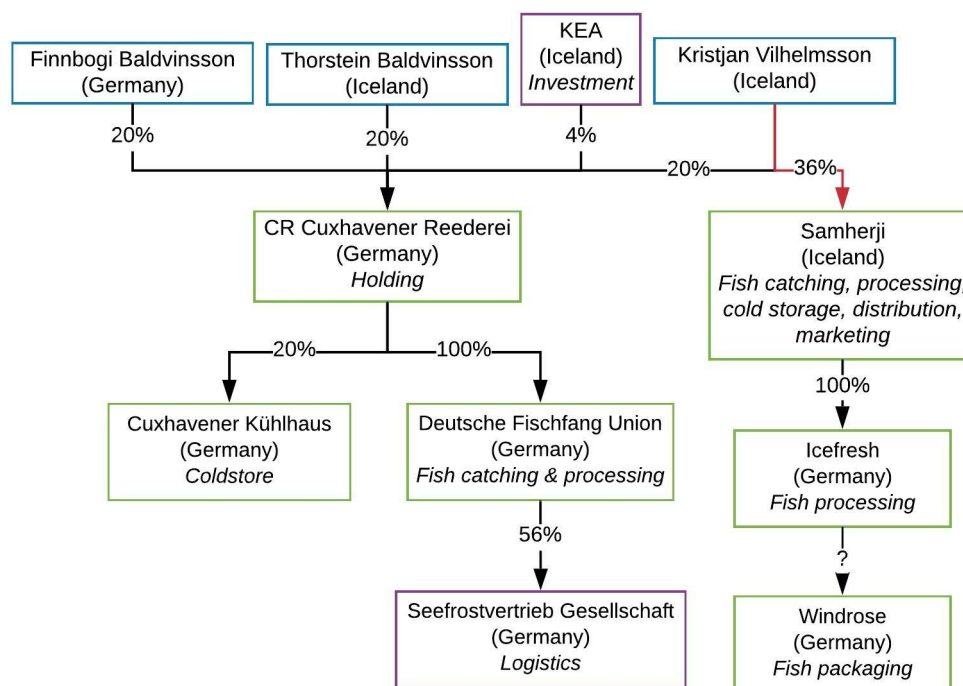
Vessel name	Fishery	Domestic vessel operator	Domestic parent company
NC 100 Cuxhaven	Demersal	Deutsche Fischfang Union	Cuxhavener Reederei
NC 105 Berlin	Demersal	Deutsche Fischfang Union	Cuxhavener Reederei

Source: Deutscher Fischerei-Verband (n.d.), "Schiffsflotte", online: http://www.deutscher-fischerei-verband.de/schiffsflotte_dhv.html, viewed in March 2018; Parlevliet & Van der Plas (n.d.), "Fishing", online: <http://www.pp-group.nl/fishing>, viewed in March 2018.

Samherji's German processing subsidiary, IceFresh, produces and markets fresh fish and has close trading relationships with Norway and Iceland. Its most important customer is the cash&carry retailer Metro (IceFresh Seafood, n.d.).

DFFU holds a 55.8% share in Seefrostvertrieb, with several PP Group subsidiaries holding the remaining 44.2%. The company is engaged in the joint marketing of the frosted fish and fish products landed by the high-seas fishery vessels of the German fleet (Firmenwissen, 2018).

Figure 51: Deutsche Fischfang Union company structure



Source: Orbis (2018), "Samherji – subsidiaries", viewed in May 2018; Firmenwissen (2018), Firmenprofil : CR Cuxhavener Reederei GmbH.

In 2016, DFFU generated revenues of € 27.6 million, an increase by 7% from the previous year. It had total assets with a value of € 43.1 million (Orbis, 2018az, Firmenwissen, 2018a).

The parent Samherji, one of the largest Icelandic fishing companies, has made continuous upstream and downstream investments in recent years. In 2016, the vertically-integrated company reported turnover of € 635.2 million, an increase by 11% year-on-year, and a net profit of € 107 million, up 12% from the previous year. Among others, the company commissioned the construction of six new vessels in recent years and increased its stake in

Norwegian whitefish and pelagic fishing firm Nergard in 2017. Next to that, investments were made in processing plants in Iceland and the UK (Undercurrent News, 2017; FoodManufacture UK, 2017).

Samherji is also described in section 19.3.1.

The above analysis shows that DFFU is part of a large structurally vertically and horizontally integrated seafood group. The group has fishing activities in numerous countries, evidence of horizontal integration. The group also has processing facilities in numerous countries, as well as joint distribution and marketing networks, such as Seefrostvertrieb in Germany in cooperation with PP Group (Netherlands).

11.3.2. Doggerbank Seefischerei & Mecklenburger Hochseefischerei (Parlevliet & Van der Plas, Netherlands)

The Dutch PP Group has important business activities in Germany. See section 18.3.1 for information on the parent company and a detailed company structure.

Initially buying herring at auctions and selling it on, the company put its first pelagic fishing vessel, the "Jan Maria", into operation in 1959. The first freezer-trawler, "Annie Hillina" was acquired in 1967. From 1986, PP also diversified its German activities into demersal fishing.

In 1998, PP further strengthened its position in Germany, with the acquisition of Mecklenburger Hochseefischerei (MHF). In 1999, German Seafood Fish (GSF) was founded, with the responsibility to market P&P's groundfish product range. In 2003, the fish processing plants of Euro-Baltic Fisch Verarbeitungs GmbH in Rügen were added to PP's German portfolio (PP, n.d.). With the acquisition of Deutsche See in February 2018 (see section 3.6), PP added Germany's largest supplier of fishery products to its portfolio. PP was already for several years one of the largest suppliers of Deutsche See (JUVE, 2018).

As shown in Table 37, the company nowadays operates six high-sea freezer vessels under German subsidiaries. Four of these are engaged in pelagic fisheries, two in demersal fisheries (PP, n.d.a). However, according to other sources at least some of the ships may be operating in both types of fishery. Together with the Deutsche Fischfang Union (DFFU) it forms the German high-seas fleet, with marketing activities organised via the producer organisation Seefrost Vertrieb Gesellschaft (section 11.2).

Table 37: Parlevliet & Van der Plas high-seas fishing vessels, Germany

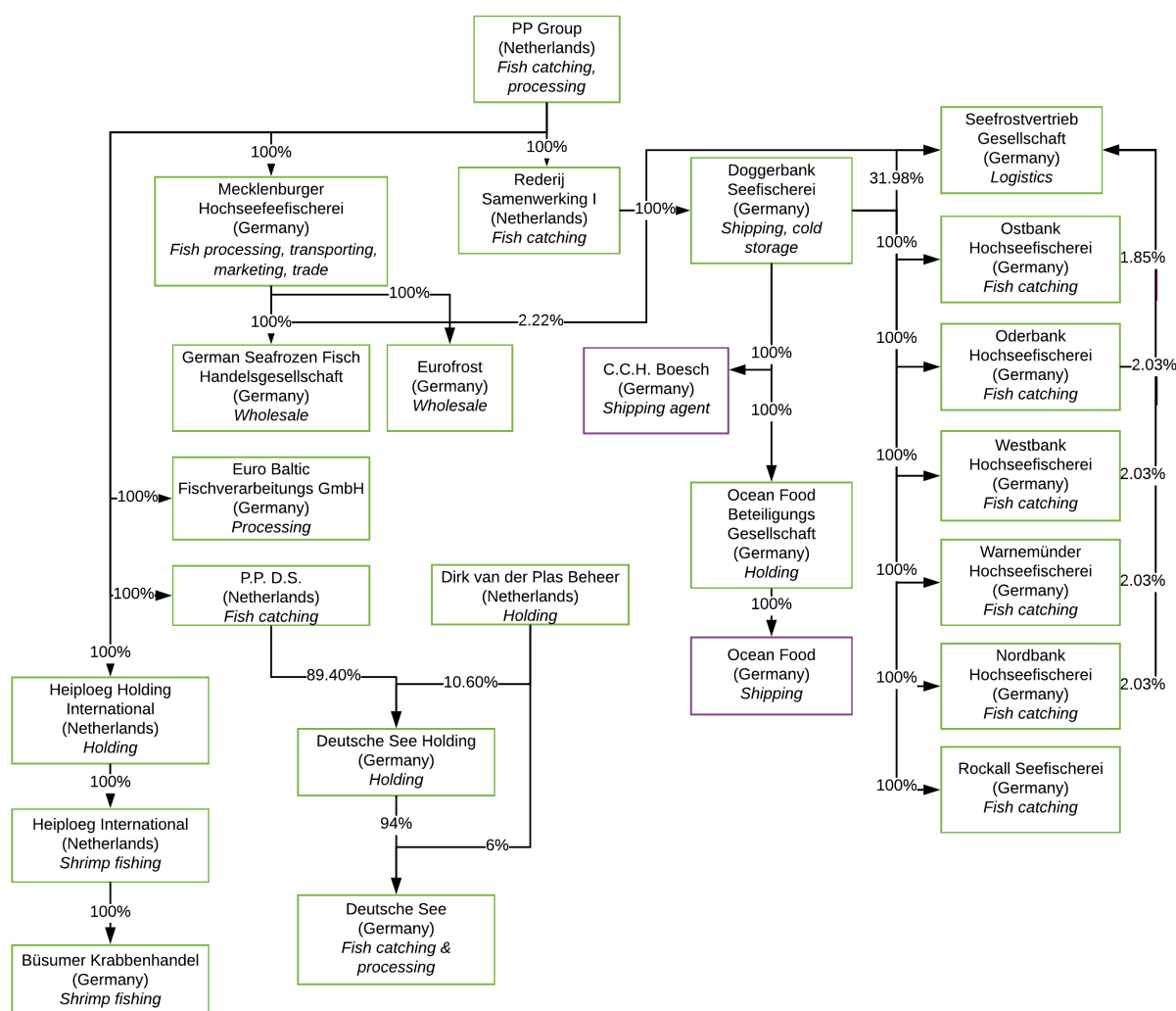
Vessel name	Fishery	Domestic vessel operator	Domestic parent company
ROS 170 Annie Hillina	Pelagic	Ostbank Hochseefischerei	Doggerbank Seefischerei
BX 791 Jan Maria	Pelagic	Doggerbank Seefischerei	-
ROS 785 Helen Mary	Pelagic	Oderbank Hochseefischerei	Doggerbank Seefischerei
ROS 171 Maartje Theadora	Pelagic	Westbank Hochseefischerei	Doggerbank Seefischerei
ROS 786 Gerda Maria	Demersal	Nordbank Hochseefischerei	Doggerbank Seefischerei
ROS 777 Mark	Demersal	Warnemünder Hochseefischerei	Doggerbank Seefischerei

Source: Deutscher Fischerei-Verband (n.d.), "Schiffsflotte", online: http://www.deutscher-fischerei-verband.de/schiffsflotte_dhv.html, viewed in March 2018; Parlevliet & Van der Plas (n.d.), "Fishing", online: <http://www.pp-group.nl/fishing>, viewed in March 2018; Orbis, "Parlevliet & Van der Plas – Subsidiaries", viewed in

April 2018; European Commission (2018), "Fleet register on the net", online: <http://ec.europa.eu/fisheries/fleet/index.cfm>, viewed in May 2018.

Figure 52 visualises the company structure of PP Group subsidiaries in Germany.

Figure 52: Company structure Parlevliet & Van der Plas in Germany



Source: Orbis (2018), "PP Groep Katwijk BV – subsidiaries", viewed in May 2018; Firmenwissen (2018), Firmenprofil: Seefrostvertrieb Gesellschaft mit beschränkter Haftung; Firmenwissen (2018), Firmenprofil: Doggerbank Seefischerei GmbH; Firmenwissen (2018, Firmenprofil: Mecklenburger Hochseefischerei GmbH; Firmenwissen (2018), Firmenprofil: Deutsche See Holding GmbH; Firmenwissen (2018), Firmenprofil: "Deutsche See" GmbH.

PP Group subsidiaries Doggerbank Hochseefischerei and Mecklenburger Hochseefischerei are members of the German High-seas Fisheries Association (Deutscher Hochseefischerei-Verband). The vessels registered in Germany are all operated under subsidiaries of Doggerbank Seefischerei. The subsidiary has 72 employees and reported revenues of € 37.5 million in 2016. The only shareholder of Doggerbank Seefischerei is Rederij Samenwerking I, a wholly-owned Dutch subsidiary of PP (Firmenwissen, 2018d, Orbis, 2018). Doggerbank Seefischerei owned total assets with a value of € 73.9 million in 2016 (Orbis, 2018ba).

Mecklenburger Hochseefischerei, a direct subsidiary of PP Groep, is engaged in processing, transporting, marketing and trading of fish and fishery products. The company has 11 employees and reported revenues of € 17 million in 2016. Euro Frost, German Seafood Fish Handelsgesellschaft are wholly-owned subsidiaries of Mecklenburger Hochseefischerei. In addition, Mecklenburger Hochseefischerei as well as Doggerbank Seefioscherei and its

subsidiaries hold a 44% interest in Seefrostvertrieb Gesellschaft, while the remaining 56% are held by DFFU (Firmenwissen, 2018e). Mecklenburger Hochseefischerei owned total assets with a value of € 39.0 million in 2016 (Orbis, 2018bb).

The above analysis shows that Doggerbank Hochseefischerei and Mecklenburg Hochseefischerei are part of a large structurally vertically and horizontally integrated seafood group. The group has fishing activities in numerous countries, evidence of horizontal integration. The group is also showing signs of vertical integration as it operates processing facilities in numerous countries, as well as distribution and marketing networks.

11.3.3. Kutterfisch-Zentrale

Kutterfisch-Zentrale (Kutterfisch) is engaged in catching, processing, wholesaling, marketing of fish and the operation of restaurants. Part of the catch is sold on auctions. With its ten cutters, Kutterfisch is the largest producer organisation of the small highsea fisheries in Germany (NWZ, 2017a). Of the 110 employees, 60 are working on board of the vessels. Fishing predominantly takes place in the middle North Sea and the entire Baltic Sea. 35 people are engaged in the processing of the landed catch (Kutterfisch-Zentrale, n.d.).

In 2016, Kutterfisch-Zentrale generated revenues of € 24.5 million. Its total assets had a value of €11.6 million (Orbis, 2018bc).

Table 38: Kutterfisch-Zentrale fishing vessels, Germany

Vessel name	Fishery	Domestic vessel operator	Domestic parent company
SAS211 Antares	Pelagic/ demersal	Antares Fischereigesellschaft	Kutterfisch-Zentrale
NC312 Bianca	Demersal	Bianca Fischereigesellschaft	Kutterfisch-Zentrale
SAS295 Blauwal	Pelagic/ demersal	n/a	Kutterfisch-Zentrale
SAS111 Christin-Bettina	Pelagic/ demersal	Kutterfisch-Westbank Fischereigesellschaft	Kutterfisch-Zentrale
NC300 Iris*	Demersal	Iris FIschereigesellschaft	Kutterfisch-Zentrale
NC308 J. van Cölln	Demersal	J.v. Cölln Fischereigesellschaft	Kutterfisch-Zentrale
NC309 Seewolf	Pelagic/ demersal	Seewolf Fischereigesellschaft	Kutterfisch-Zentrale
NC120 Susanne	Demersal	Frischfisch GmbH Susanne	Kutterfisch-Zentrale
NC315 Viktoria	n/a	n/a	Kutterfisch-Zentrale
SAS110 Westbank	Pelagic/ demersal	Kutterfisch-Westbank Fischereigesellschaft	Kutterfisch-Zentrale

*not fishing this year due to low pollack quota.

Source: Kutterfisch-Zentrale (n.d.), "Schiffe und Mannschaften", online: <http://cuxhaven.kutterfisch.de/schiffsmannschaften.html>, viewed in May 2018; European Commission (2018), "Fleet register on the net", online: <http://ec.europa.eu/fisheries/fleet/index.cfm>, viewed in May 2018; Orbis (2018), "Kutterfisch-Zentrale – subsidiaries", viewed in May 2018.

Table 38 shows the vessels operated by Kutterfisch Zentrale. Not yet included in this list is a recent expansion of its involvement in North Sea shrimp operations. In January 2018, Kutterfisch acquired the North Sea shrimp fishing cooperative Butjadinger Fischereigenossenschaft in Fedderwardersiel including its 13 employees and five cutters. One of the managing directors of Kutterfisch is at the same time the managing director of the producer organization of the German North Sea shrimp fishers that is in charge of the

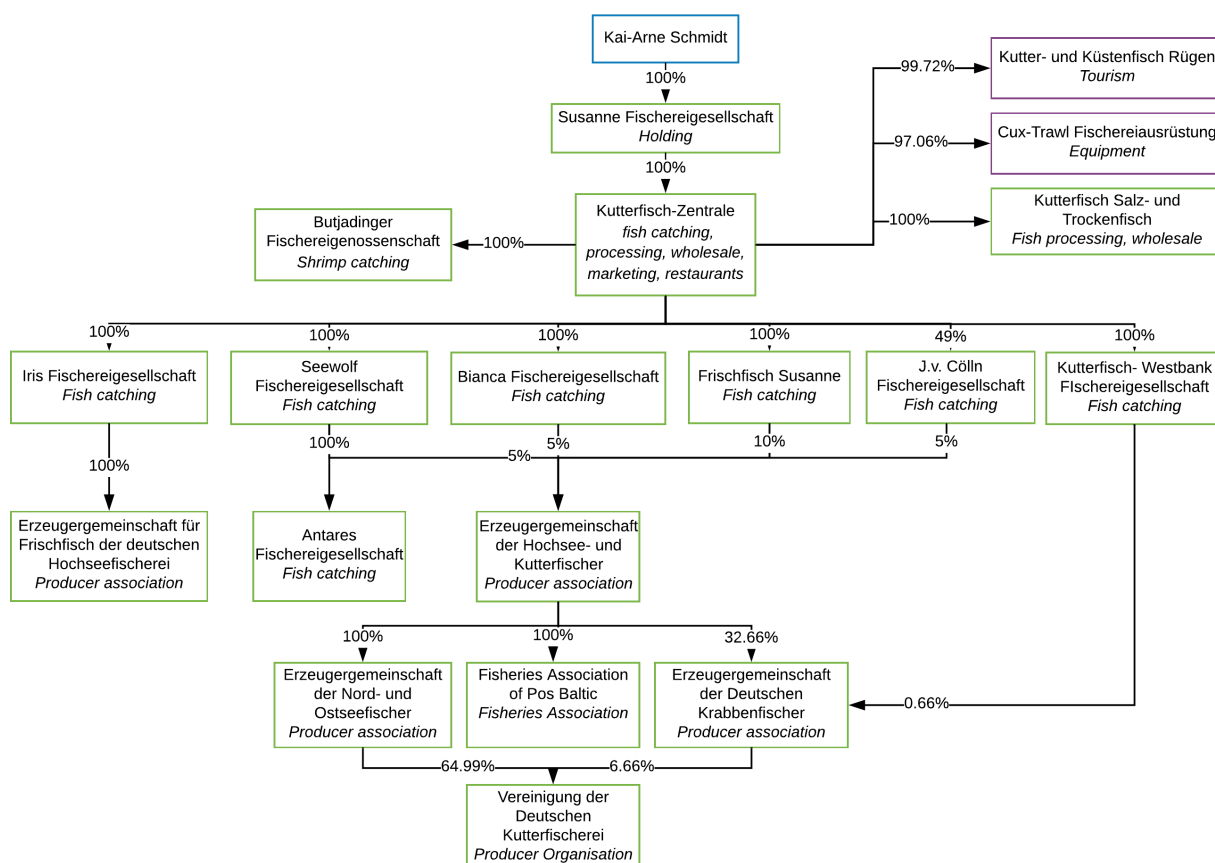
marketing of the catch landed in Fedderwardersiel (Fischmagazin, 2018a, Fischmagazin, 2017b).

During the last years the company has bought up vessels to access the attached fishing rights. It has recently invested € 16 million from own funds in two new trawlers focussing on pollock fishing, with delivery scheduled in August and December 2018, respectively. On these vessels, the quota of four of its current boats (Bianca, Iris, J. von Cölln and Susanne) will be consolidated, leading to a fleet reduction from ten to eight vessels. While not planning further purchases of quota-holding vessels, the company aims to modernize the whole fleet in a step-by-step process.

Kutterfisch catches and processes around 50,000 tonnes of fish per year. Its quota includes approximately 10,000 tonnes each of saithe and herring, around 12,900 tonnes of sprat, around 5,000 tonnes of different cod species, as well as 1,000 tonnes of quota for mixed species that cover by-catches (Undercurrent News, 2018a).

Kutterfisch Zentrale is engaging in horizontal integration as is shown by its investments in shrimp catching as well as the acquisition of vessels in recent years to access the attached quotas. The company also shows signs of vertical integration. Next to the shipping companies, also the processor Salz- und Trockenfisch is part of Kutterfisch. It has invested in its factory over the past years to nowadays producing 3,000 tonnes of finished products per year. Key markets are Germany and France. The rest of its catches are sold in neighbouring markets including Denmark and the Netherlands (Undercurrent News, 2018a). Its subsidiary Kutter- und Küstenfisch Rügen markets fish, operates a restaurant and food market, and engages in tourism (Kutterfisch-Zentrale, n.d., Kutter- und Küstenfisch, n.d.).

Figure 53: Kutterfisch-Zentrale company structure



Source: Orbis (2018), "Kutterfisch-Zentrale – Ownership structure", viewed in May 2018; Kutterfisch-Zentrale (n.d.), "Schiffe und Mannschaften", online: <http://cuxhaven.kutterfisch.de/schiffsmannschaften.html>, viewed in May 2018.

11.3.4. Hullmann Seefischerei Brake

The Hullmann family from Brake has been involved in fisheries since 1922. The family-run company Hullmann Seefischerei Brake was established in 2004 and operates a fleet of four vessels that fish in the North and Baltic Sea (Table 39). The total catch per vessel reaches around 250 tonnes per year (Neptun Fischvermarktung Brake, n.d.).

Table 39: Hullmann Seefischerei fishing vessels, Germany

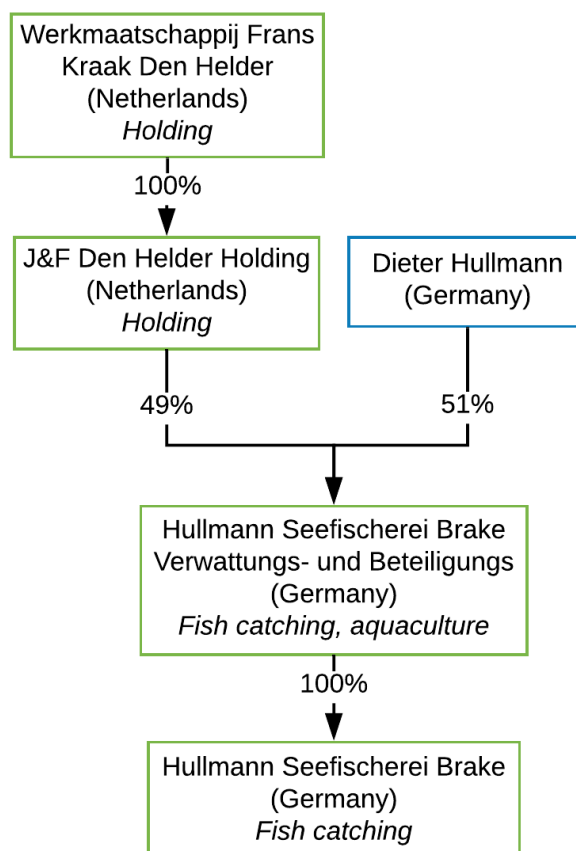
Vessel name	Fishery	Vessel operator	Parent company
BRA2 "Butendiek"	unknown	Hullmann Seefischerei	Hullmann Seefischerei
BRA3 "Rotesand"	unknown	Hullmann Seefischerei	Hullmann Seefischerei
BRA4 "Destiny"	unknown	Hullmann Seefischerei	Hullmann Seefischerei
BRA5 "Pieter"	unknown	Hullmann Seefischerei	Hullmann Seefischerei

Source: Neptun Fischvermarktung Brake (n.d.), "Über uns", online: <http://www.neptun-brake.de/>, viewed in May 2018; European Commission (2018), "Fleet register on the net", online: <http://ec.europa.eu/fisheries/fleet/index.cfm>, viewed in May 2018.

Hullmann Seefischerei's total assets had a value of € 1.2 million in 2016. No revenue figures are available (Orbis, 2018bd).

The company has two shareholders: Dieter Hullmann holding 51% of the shares, and the Dutch Rederij J&F Kraak en Zonen holding the remaining 49% in the company (Firmenwissen, 2018c) (Figure 54).

Figure 54: Hullmann Seefischerei Brake company structure



Source: Orbis (2018), "Hullmann Seefischerei Brake – Ownership structure", viewed in May 2018; Firmenwissen (2018), Firmenprofil: Hullmann Seefischerei Brake Verwaltungs- und Beteiligungs-GmbH.

While part of Hullmann Seefischerei's catch is marketed directly, the majority is sold via the fish auction in Lauwersoog (Netherlands). Dieter and Uwe Hullmann are also the managers of the PO Fischereigenossenschaft Elsfleth. As of 2013, the most important species fished by the PO was plaice (more than 2,200 tonnes in 2012, or more than half of the German quota for plaice). Other important species are cod, sole, turbot. The PO Elsfleth also included nine cutters fishing on North Sea shrimps (Fischerblatt, 2013). In 2014, the PO landed a total of 5,000 tonnes of fish and shrimps. Most of the catch is sold on auctions in the Netherlands and Denmark (Kreiszeitung Wesermarsch, 2015).

Hullmann Seefischerei is showing signs of vertical integration already since more than 20 years. In 1993, the Hullmann family founded the "Neptun" Fischvermarktungs-Gesellschaft, a fish marketing organization based in Brake. The objective of this addition was to directly market part of its own catch and landings of the other PO members. It includes a shop, a fish snack-bar, as well as freezing and cooling installations for the landed catch (Fischerblatt, 2013).

11.3.5. Küstenfischer Nord

Küstenfischer Nord was founded in 1949, originally under the name "Fischverwertung Heiligenhafen-Neustadt", with initially 17 members. The name was changed in 2009, to account for the business and geographic expansion. Today, the cooperative is organizing around 30 fishery companies active in different types of fishery and with vessels of varying lengths, from 8 to 40 metres. Smaller vessels with up to 12 metres are predominantly active in demersal gillnet fishing, larger vessels are engaged in trawl fishing. The company has 20 employees. When also considering the independent member companies, an up to an additional 80 people are directly involved in fishing operations (Küstenfischer Nord, n.d.).

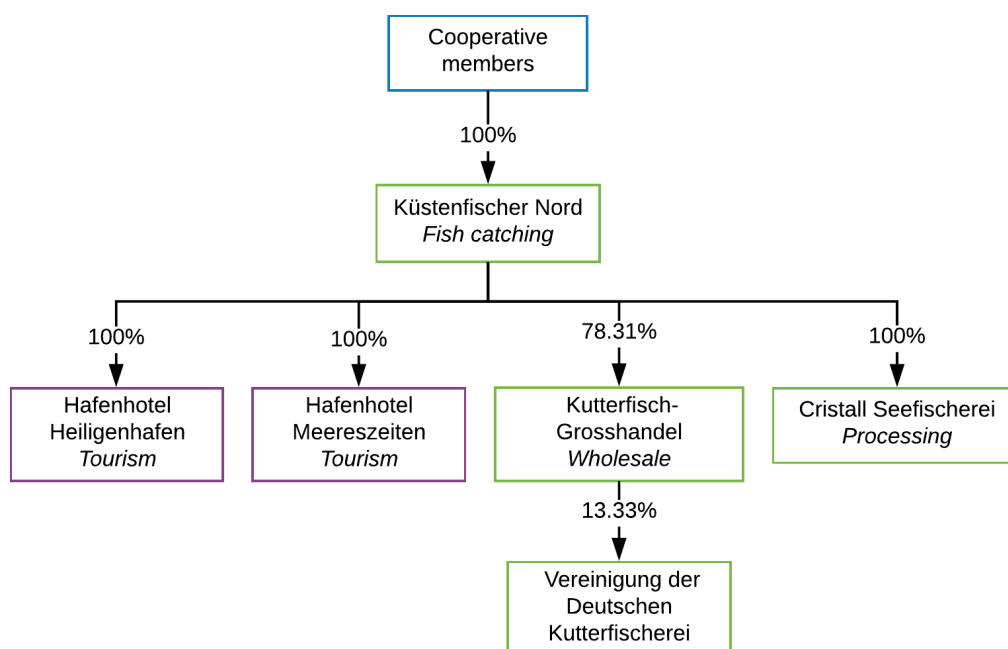
Küstenfischer Nord's total assets had a value of € 3.4 million in 2016. No revenue figures are available (Orbis, 2018be).

The key objective of the cooperative is the marketing of the catch of its members. A majority is exported in own trucks to the Netherlands, France or Denmark. The remainder is marketed regionally. The aim is to increase local value and job creation from fishing (Küstenfischer Nord, n.d.).

Depending on the fishing area, the catch is landed in different ports: cutters operating in the Baltic Sea land their catch in the ports operated by the PO, Heiligenhafen, Kappeln und Maasholm. Vessels fishing in the North Sea, Skagerrak and Kattegat land their catch in foreign ports or on the German north-west coast (Büsum).

The vessels predominantly fish on cod, herring and sprat in the Baltic Sea, and plaice, cod and pollack in the North Sea (Küstenfischer Nord, n.d.).

Küstenfischer Nord is showing signs of horizontal and vertical integration. On the one hand, the number of members has roughly doubled since its founding. At the same time, marketing and additional activities in related segments has been continuously expanded through own shops and gastronomy (Küstenfischer Nord, n.d.; Figure 55).

Figure 55: Company structure Küstenfischer Nord

Source: Orbis (2018), "Ownership structure: Küstenfischer Nord", viewed in October 2018;

11.4. Integration

The development of the sector on the two German coastlines shows similarities and deviations. Differences are caused by different quota developments on the one hand, and different fleet structures on the other hand, with small cutters and boats dominating on the Baltic coast (Schütt, 2018). The economic situation of fishermen in the North Sea is developing quite positively in recent years. North Sea fisherman can currently achieve a good income (Marckwardt, 2018). This is due to recovering fish stocks in the North Sea, meaning that there are good quotas for cod, plaice and haddock to ensure sufficient income generation by fishermen (dpa-AFX, 2017; Aar Bote, 2016).

As several interview partners confirmed, stagnating or decreasing employment in the North Sea sector is rather due to the difficulty to motivate young people to choose a career in fish catching. As one interviewee put it, "*the reason why no new operators joined the PO in recent years is less a result of fishery politics than of societal developments*" (anonymous respondent from German fish catching company, 2018). Long stays on sea, possibly on outdated vessels, are perceived as incompatible with the outlook on life of the young generation (ibid.). This trend can be observed on both coastlines.

Where vessels with North Sea quota become available, these are often taken over by a PO (anonymous respondent from German fish catching company, 2018). In line with the German requirements, the vessel is kept in operational condition, but the quota gets moved to other vessels in the PO (ibid.). This became increasingly of interest also due to the discard ban and requirement to obtain by-catch quota (ibid.). In other cases, foreign companies acquire vessels becoming available and operate them under German flag in order to access the attached quota (see below).

The looming Brexit is raising fears among North Sea fishermen though. Significant volumes of fish are caught in British waters and it remains unclear whether fishing quotas remain in place after the Brexit (NWZ, 2018; MLU, 2018). It is expected that a hard Brexit would endanger hundreds of jobs on the German North and Baltic Sea coast (ibid.). In case the UK claims half of the North Sea area, this would affect 50% of the total German quota and 30%

of total revenues, among others for herring, mackerel, blue whiting, flatfish and langoustine, according to the German High Seas Fisheries Association. 100% of the German North Sea herring quota is caught in the British zone (LZ, 2017).

In comparison with the North Sea coast, fishing on the German Baltic Sea coast is marked by a smaller scale and often done as a side business. The significantly decreasing stocks and consequently cuts in quotas especially for herring and Baltic cod during the last decade had considerable impact on small fishermen (Der Tagesspiegel, 2017). Both are commonly referred to as "bread fish" due to their outstanding economic importance for small Baltic Sea fishing businesses (ibid.). While it was possible in the past to compensate for reduced quota for herring with cod and vice versa, the limitations on both quotas in recent years made this impossible (ibid.). While the need for quotas is widely accepted, many fishermen do not understand why such drastic cuts for Baltic cod and herring are required while the quota volumes can be caught quite quickly (Schütt, 2018).

In the meantime, fuel prices increased, and the old age of many vessels brings an additional financial and material burden of maintenance for the owners in order to keep an outdated fleet operating (LLUR, 2018). For example, in Schleswig Holstein 74% of cutters operating from the Baltic Sea coast were older than 30 years in 2017 (ibid.). Due to low quotas and prices, only larger fish catching units with more modern vessels and additional investments along the value chain have the potential to be profitable still (anonymous respondent from German fish catching company, 2018).

The decreasing economic viability of fish catching, termination of businesses for reasons of age and lack of a successor as well as a publicly subsidized scrapping bonus as compensation for shrinking quota lead to a continuously decreasing fleet (LLUR, 2018). While Mecklenburg-West Pomerania counted 1,200 fishermen around the time of reunification (catching much larger volumes than under the EU quota system), this number has dropped to 234 in 2017 (Der Tagesspiegel, 2017). In Schleswig-Holstein, 15 artisanal full-time cutter fisheries enterprises in the Baltic Sea stopped operating in 2017 alone, a loss of 15% (LLUR, 2018). Especially small, Baltic Sea fishermen with fishing as main activity exit the business (Schütt, 2018).

Even if young people are interested in the job, the hurdles for accessing finance are high as banks are hesitant to invest in a sector seen as volatile (Marckwardt, 2018a). In the Baltic Sea area an additional stumbling block is formed by the old age of many cutters, which then no longer qualify for financial support payments for acquisitions by young fishermen (ibid.).

As one strategy of attaining some additional income, fishermen also target other, non-regulated species (Lübecker Nachrichten, 2017; Schütt, 2018). However, these catches cannot make up for the losses as the market is limited and prices achieved for these species are much lower than for cod or herring (ibid.). Taking over the quota of those giving up is described as the only way for the remaining fishermen to survive (Der Tagesspiegel, 2017).

Horizontal integration can be observed where local fishing businesses take over the vessel to access the attached quota. The vessel often stays inactive in the port and the quota is fished with the previously operated vessel (Schütt, 2018). Such a quota transfer is only possible if also the capacity of the acquired vessel is installed on the existing vessel (ibid.). Partly also larger trawler operators from the German North Sea coast take over vessels and quotas in the Baltic Sea (ibid.). Investments by Swedish or Danish companies are not seen at the Mecklenburg-West Pomeranian coast but rather in Schleswig-Holstein (ibid.).

Fishermen that caught Baltic herring with trawlers under MSC-certification were satisfied with the achieved prices in recent years (Schütt, 2018). The news in August 2018 that the Marine Stewardship Council (MSC) decided to withdraw the MSC certification of the Baltic Sea herring from trawler fishery due to an unsustainable size of the population will put further pressure

on local fish catching business (ibid.). As German retailers almost exclusively purchase fishery products with a sustainability certification, this is expected to lead to a development where the Baltic Sea herring can only be sold at lower prices in Denmark or Poland (TAZ, 2018).

The reduced quotas for herring and cod had no positive influences on prices. Prices achieved for herring caught with gillnets were already lower than fishermen would require for sufficient profitability (Schütt, 2018). Gillnet fishery was still under MSC assessment until 2018 (ibid.). The low profitability of herring fisheries in the Baltic Sea is also due to the fact that the catch volume is much smaller than in the North Sea (ibid.). In addition, the Baltic Sea herring is less fatty and consequently less interesting for example for marinated products as the weight loss in processing is bigger (ibid.).

As the company analysis in section 11.3 shows, horizontal integration in the German fishery sector can be observed in different ways. In the large- and medium-sized fisheries targeting demersal as well as pelagic species this is notably marked by foreign companies investing in German fisheries. The German high-sea freezer trawler segment accounting for more than 60% of landed catch is fully-controlled by large, vertically integrated Dutch and Icelandic companies that also have presence in various other EU countries. Samherji, the Icelandic parent of DFFU, is described as one of the key players in the cross-border and cross-sector consolidation in the seafood sector (Undercurrent News, 2017a).

Dutch investments are also found in the medium-sized sector operating in the North and Baltic Sea and small (shrimp) cutters operating in the North Sea. Dutch fishing companies have a long history and strong position especially in flatfish fisheries, which explains their interest in taking over German vessels and attached quota (Marckwardt, 2018a). Other EU nationalities are also operating fishing vessels under German flag or show interest in vessels becoming available, among others Danish, Swedish, British and French (ibid.). However, no hard data on the number of vessels in foreign ownership operating under German flag and quota are available.

The opposite movement of German players investing in vessels in neighbouring countries does not seem to play a role. There are different reasons why companies from other countries pertain over more investment capital than German operators, including different tax systems, easier access to finance and an overall larger, more influential fishing sector and lobby (Marckwardt, 2018a). Another reason can be national cessation schemes. For example, Swedish vessel owners profited from a permanent cessation scheme during 2009 and 2010 with quite generous scrapping premiums for vessel owners (EC, 2013). As an interviewee noted, some Swedish fishermen used this money to purchase German vessels quota (anonymous respondent from German fish catching company, 2018).

The German fishery sector is also showing developments of vertical integration. This refers to both players in the high-seas fisheries sector that accounts for around 61% of German landings, where the first stages of processing already take place on board and on-land processing facilities are integrated into large vertically integrated international seafood groups. As the example of PP Group in Germany shows, processing capacity is further increased through acquisitions (see section 11.3.2) Informal vertical integration through longer-term supply relationships with retailers can also be observed for the high-seas fishery sector.

POs are in several cases owned by fishing companies. At the same time, there is further vertical integration through these POs, as they set up processing facilities and market distribution networks to support access to markets for their members as well as generating additional income from direct marketing or tourism-related activities (see e.g. sections 11.3.3

and 11.3.5). This is notably the case in the North Sea coast region, where the catching season is overlapping with the main tourism season (Schütt, 2018).

While a large share of the catch is sold on auctions in the Netherlands and Denmark, it is aimed to also open up direct marketing channels, for example through direct sales of fresh and value-added fish and the operation of own fish restaurants. For example, an interviewee reported that one of the larger companies of the small high-seas fishery markets fresh fish filets throughout Germany, in the Netherlands, UK and Denmark, as well as direct sales to wholesalers and discounters (anonymous respondent from German fish catching company, 2018). Value creation can also be observed on a smaller scale, where individual fishermen may sell some of their catch in own fish joints.

Vertical integration in the small-scale Baltic Sea herring fisheries is less pronounced. A large share of the herring catch from gillnet fishing in the Baltic Sea goes to Denmark for processing (Schütt, 2018, Der Tagesspiegel, 2017). The Danish industry has processing capacities that need to be filled outside the local catching season. A small share of the gillnet-caught herring goes to Euro-Baltic in Mecklenburg-West Pomerania, a wholly-owned subsidiary of the vertically integrated Dutch PP Group that is also a key actor in the German high-seas freezer trawler segment (Schütt, 2018). The herring caught by trawlers goes almost exclusively to Euro-Baltic (ibid.). This represents about 60% of the German Baltic Sea quota (ibid.). Agreements with the processor are made on a yearly basis. Prices are dependent on various factors, such as the price that the processor achieves for herring roe sold to Asia or whether herrings fillet is sold to Poland at low prices (ibid.).

Euro-Baltic mostly relies on herring from the North Sea. In addition to 10,000 tonnes of Baltic Sea herring also 40,000 tonnes of North Sea herring, mostly from British waters, are processed annually (MLU, 2018). This is the reason why the fish processing industry located on the Baltic Sea coast also fears significant negative impacts from Brexit, as in combination with a looming catching stop for herring in the Western Baltic Sea in 2019, this would endanger the whole industry in Germany (ibid.).

Vertical integration in the Baltic Sea herring segment is not viable. The catching season is short, which means that investment in own processing is uneconomical for smaller producer organisations. Tourism is peaking in the summer months, and has thus little overlap with the local catching season (Schütt, 2018).

In summary, the German fish catching sector shows both signs of structural horizontal and vertical integration, however, there are regional differences as well as differences between the different types of fish catching. The large high-seas fishery companies show a high degree of both horizontal and vertical integration. In the medium and small-sized fishery of the North Sea coast area, vertical integration is used to diversify the fishing business and secure income with tourism-related activities and direct marketing. Signs of informal vertical integration can be observed in the form of temporary offtake agreements with processors or regular deliveries to retailers. Horizontal integration is observed across all types of fishery, as fishermen are giving up the business while others are interested in taking over vessels and attached quota. Competition is driven by the quota system, as companies are trying to purchase additional vessels to access the attached quota.

12. GREECE

KEY FINDINGS

- Sector **dominated** by **small-scale** fishermen
- **Aquaculture important** segment
- **Informal vertical** integration **common**
- **Large workforce** employed in fisheries
- **Significant trade surplus** in fish and fish products

12.1. Composition of the Greek seafood sector

Greek fishing companies generated € 126 million in landings income in 2015. Processing companies generated a further € 222 million in production revenue in 2016.

Greece maintained a positive trade balance in fish products of € 228 million in 2016. The country exported fish products worth € 670 million. More than 90% of fish and fish product exports were to EU countries. The main export destinations were Italy (40%), Spain (13%) and the Netherlands (10%).

57% of Greece's € 442 fish imports were from other EU countries. Its main import partners were Spain (14%), the Netherlands (13%), and Italy (9%).

Greece has a large fishing fleet. In 2017, there were 14,985 registered fishing vessels. These were owned by 12,594 enterprises. In 2015, 1,368 enterprises – 11% of all fishing enterprises – operated more than one vessel. 93% of all active vessels are small-scale (STECF 2018).

The fish catching segment in Greece employed 23,431 fte, approximately 0.7% of the workforce. The average vessel tonnage of 5 GT indicates that the fishing segment is largely small-scale.

The fish processing segment employed a far smaller workforce of 222 fte. This, in addition to the low level of value adding through processing mentioned above, indicates that a large proportion of the landed fish is sold fresh.

Table 40: Greek seafood sector key figures

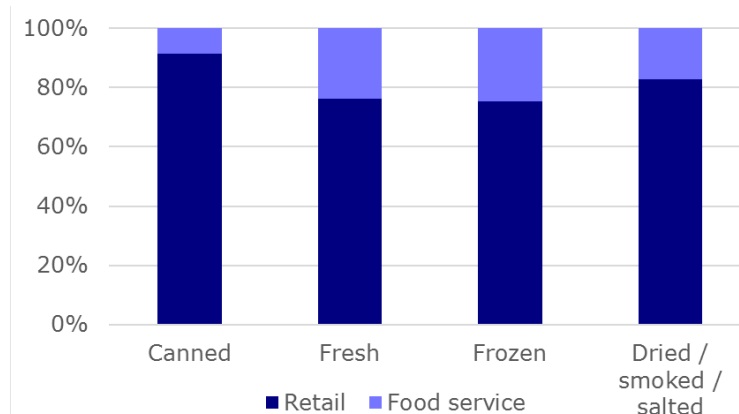
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2017)	14,985	
	Average vessel tonnage per vessel (2015, GT)	5	
	Average vessel tonnage per enterprise (2015, GT)	6	
<i>Enterprises</i>	Number of fishing enterprises (2015)	12,594	
	Enterprises with more than one vessel (2015, number, % enterprises)	1,368	10.9%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	126	0.07%
	Average landing income per fte employed (2015, €)	5,358	
	Average landing income per vessel (2015, €)	8,036	
	Average landing income per enterprise (2015, €)	9,969	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	23,431	0.66%
	Average employment per vessel (2015, fte)	1.5	
	Average employment per enterprise (2015, fte)	1.9	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	222	0.13%
	Employment in the fish processing sector (2015, fte, % workforce)	1,235	0.03%
	Average processing production per fte employed (2015, €)	179,352	
Trade	Trade balance (2016, € mln, % GDP)	228	0.13%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	670	0.38%
	1. Italy (2016, € mln, % export)	267	40%
	2. Spain (2016, € mln, % export)	90	13%
	3. Netherlands (2016, € mln, % export)	64	9%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	442	0.25%
	1. Spain (2016, € mln, % import)	59	13%
	2. Netherlands (2016, € mln, % import)	57	13%
	3. Italy (2016, € mln, % import)	39	9%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

83% of the fish and fish products that enter the market in Greece are sold as fresh. Canned (5%), frozen (8%) and dried/smoked/salted fish (4%) account for much smaller proportions of fish products sold in Greece. 77% of all fish and fish products sold in Greece are sold through retail, the remainder is sold in the food service industry. Three quarters of both fresh and frozen fish are sold in retail (see Figure 56). Canned and dried/smoked/salted products are rarely sold in food service, more than 90% of each category is sold through retail outlets.

Figure 56: Greece: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

More than three quarters of all fresh fish in Greece is sold unbranded (see Table 41). Both canned and frozen fish and fish products are generally sold as branded. Notably, 31% of

dried/smoked/salted fish is sold as artisanal products, the remainder is sold as branded (also 31%), unbranded (29%) or retailer own label (9%).

Table 41: Greece: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	22%	89%	80%	31%
Unbranded	78%		13%	29%
Artisanal				31%
Own label		11%	8%	9%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

A key brand for fresh fish in Greece is Nireus Fisheries with a market share of approximately 30% of the fresh segment (FFT, 2018). Selonda, which is engaged in aquaculture of sea bream and sea bass, holds a share of around 20% in the Greek fresh fish segment (ibid., Selonda, n.d.). Iglo (part of Nomad (UK)) is the market leader in the frozen fish segment with a market share of around 28% in Greece, while Kallimanis accounts for around 23% of the frozen segment (ibid.). In the canned segment, the Trata and Flokos brands of Konva hold around 26% of the market, while the brands of Bolton Hellas (part of Bolton Group (Netherlands)) account for approximately 20% (ibid.). Konva also plays an important role in the dried/smoked/salted segment in Greece, with a market share of around 25% (ibid.).

12.2. Producer organisations

Greece has one producer organisation – Ostria AE (European Commission, 2017) which is for aquaculture companies only. In Greece there are no producer organizations for fishermen, but unions of fishermen that set up market conditions.

The Panhellenic Union of Middle Range Fisheries Ship Owners or Pan-Hellenic Association of Coastal Fishing Companions (both names are used on the organisation's website) represents the owners of Mesa Fisheries (Mechanized and Purse) (Pan-Hellenic Association of Coastal Fishing Companions, n.d.). The small-scale (coastal) fishers do not have such an organisation. They are *"divided into different 'clans', making them more vulnerable to competitors and policy changes"* (Anonymous A). There is an unofficial association for these small-scale fishers called Pan-Hellenic Association of Coastal Professional Fishing Vessels (Panepes) (Panepes, n.d.).

12.3. Company analysis

The fishing sector in Greece is split in two categories: medium sized fishing (trawlers and purse seiners) and small-scale fishing (vessels of less than 12 metres). There are no big fishing companies in Greece, i.e. there are no companies that own or operate a large number of fishing vessels. Trawlers and purse seiners are usually manned by the owners. The owners are usually the captains, whereas the crew are mainly immigrants.

Aquaculture companies are a big player in the Greek market. But they have nothing to do with the fishing in Greece, at least not in a direct way (Anonymous A).

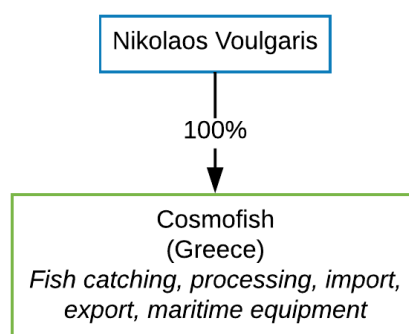
In Greece it seems to be more common that processing and exporting companies work closely together with fishermen, from whom they buy the fish directly. Two of such companies are Cosmofish and Afentoulis.

12.3.1. Cosmofish

Cosmofish is a company that is "active at all stages of the fisheries supply: fishing, sorting, preservation and distribution." They also provide the industry with fishing equipment. The company is established by two families, the Roussis family and the Bulgaris family. The Roussis family brought two vessels into the company. The company cooperates with more than 50 fishermen, who have their own vessels (Cosmofish, 2018). The two vessels that were brought to the company are not owned by the company.

Cosmofish is owned by Nikolaos Voulgaris. It has no subsidiaries. Cosmofish is vertically integrated.

Figure 57: Cosmofish company structure



Orbis (2018, October), "Current shareholders: Cosmofish", viewed in October 2018

12.3.2. Afentoulis

The company Afentoulis has close ties with fishermen. The company buys the fish from around 100 fishermen and then processes, markets and exports the fish (Afentoulis, 2012).

12.3.3. Anastassakis Group

Triton Seafood is part of the Anastassakis Group of Companies.

Triton Seafood is a fishing company with three vessels. They fish on species like Red mullet, red snapper, pagre, white grouper and sole.

12.4. Integration

There is little evidence of formal integration in the fishing sector in Greece. There are no large fishing companies, but only small and medium sized fishing vessels operated by the, usually, Greek captain and sometimes a (foreign) crew.

However, there is informal integration taking place, in that sense that processing and exporting companies have close ties with the fishing vessels. Companies like Cosmofish and Afentoulis do not actually have many boats of themselves but they have close ties with many small-scale fishermen.

13. IRELAND

KEY FINDINGS

- **156** seafood **processing companies** in Ireland
- **9%** of all fishing **enterprises** owned **more than one vessel**
- **Vertical integration** mainly in **pelagic** segment
- **Limited** inward/outward **international horizontal** integration
- **Limited informal horizontal** integration due to **quota management restrictions**
- **Concerns** over **Brexit**, and **Irish** fishermen's **TACs**

13.1. Composition of the Irish seafood sector

In 2015, Irish fishing companies generated € 244 million in landings income (Table 42). Processing companies generated a further € 646 million in production revenue.

Ireland had a trade surplus of € 292 million in fish and fish products in 2016. It exported € 555 million. Three quarters of Ireland's fish exports were to EU countries. The main export destinations of Irish fish and fish products were France (26%), Spain (14%) and the United Kingdom (11%).

90% of Ireland's € 263 million fish imports were from EU countries. Its main import partners were the United Kingdom (65%), Germany (7%) and France (6%).

Ireland had 1,953 registered commercial fishing vessels in 2017, of these 69% were active. These vessels were owned by 1,885 enterprises. 175 enterprises – 9% of all fishing enterprises – owned more than one vessel.

The Irish fish catching segment employed 2,522 fte. The Irish fish processing segment employed a slightly smaller workforce of 2,147 fte.

Table 42: Irish seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2017)	1,953	
	Active vessels (2017)	1,349	69%
	Average vessel tonnage per vessel (2015, GT)	29	
	Average vessel tonnage per enterprise (2015, GT)	31	
<i>Enterprises</i>	Number of fishing enterprises (2015)	1,885	
	Enterprises with more than one vessel (2015, number, % enterprises)	175	9.3%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	244	0.09%
	Average landing income per fte employed (2015, €)	96,817	
	Average landing income per vessel (2015, €)	119,225	
	Average landing income per enterprise (2015, €)	129,534	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	2,522	0.13%
	Average employment per vessel (2015, fte)	1.2	
	Average employment per enterprise (2015, fte)	1.3	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	646	0.23%
	Employment in the fish processing sector (2015, fte, % workforce)	2,147	0.11%
	Average processing production per fte employed (2015, €)	300,699	
Trade	Trade balance (2016, € mln, % GDP)	292	0.11%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	555	0.20%
	1. France (2016, € mln, % export)	147	26%
	2. Spain (2016, € mln, % export)	78	14%
	3. United Kingdom (2016, € mln, % export)	64	12%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	263	0.10%
	1. United Kingdom (2016, € mln, % import)	172	65%
	2. Germany (2016, € mln, % import)	18	7%
	3. France (2016, € mln, % import)	15	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Ireland is surrounded by some of the most productive fishing grounds in the EU. Hence, coastal communities in the country have always been economically and socially reliant on the fishing sector. According to estimates, the GDP of the Irish seafood sector was EUR 1.1 billion (0.36% of total GDP) in 2016 and the sector employed over 11,000 workers. From 2008 to 2016, the number of people employed in the fish catching sector increased from 2,866 to 3,358 (BIM, 2016; Carpenter & Kleinjans, 2017). In 2016, total value of landings in Ireland accounted for 6.5% of total EU landings by value and 6% by volume (264,000 tonnes) (Eurostat 2018). The two biggest fishing ports by value of landings are Castletownbere (€ 111 million in 2016) and Killybegs (€ 85 million in 2016) (BIM, 2016; Carpenter & Kleinjans, 2017).

As of 2018, the Irish fleet comprises 1,987 vessels – 86% of which are under 12 m vessels. This represents a 2% increase in the total number of vessels in the fleet in comparison with 2008. Total capacity of the fleet in 2017 was 63,921 GT and engine capacity of 189,291kW (DAFM, 2018).

The Department of Agriculture, Food and the Marine (DAFM) divides the national fishing fleet into four main segments, excluding the aquaculture segment (DAFM, 2018):

- A Refrigerated Seawater (RSW) Pelagic segment, mainly engaged in fishing for pelagic species such as herring, mackerel and blue whiting. This segment comprises 23 vessels.
- A Beam Trawler segment with vessels predominantly fishing in Irish inshore waters except in the southeast, where it targets flatfish such as sole and plaice. Currently ten vessels are officially registered as beam trawlers.

- A Polyvalent segment, accounting for the vast majority of the fleet (1,708 vessels in 2018, or 83%). This segment comprises a variety of vessels of different sizes and different gear types, including small inshore vessels (netters and potters), and medium and large offshore vessels targeting whitefish, pelagics and molluscs.
- A Specific segment including vessels which are permitted to fish for bivalve molluscs and aquaculture species. This segment comprises 147 vessels.

In 2016, Ireland counted 156 seafood processing companies employing 2,147 fte (see Table 42). Of these, 16% had revenues over € 10 million, 33% between € 1 and € 10 million, and the remainder (51%) less than € 1 million. Most of the Irish seafood processing companies comprise less than ten employees (EC Representation in Ireland, 2018). Whitefish and multi-species processing sites account for 44% of total sites, shellfish for 25%, salmonids for 21% and pelagic for 10%.

Besides the processing facilities associated with the fishing companies described below, the following companies are specialised in seafood processing. A complete list of all Irish registered fish buyers was published by the Sea-Fisheries Protection Authority (SFPA) and can be found online (Sea-Fisheries Protection Authority, 2018).

- Green Isle and Donegal Catch

Green Isle Seafood is the largest processor of white fish in Ireland with 3,000 metric tonnes annual production capacity. Green Isle Seafood owns Donegal Catch, one of Ireland's major frozen fish brand. The company processes a wide range of species that are sold to the wholesale, foodservice and retail sectors throughout Europe (Green Isle Foods, 2018).

- Ocean Path

Ocean Path is one of Ireland's biggest seafood processors. The company supplies fresh and smoked fish to all major Irish retailers as well as exporting to places such as Dubai and Singapore (Ocean Path, 2018). In March 2018, Ocean Path was bought by Iceland Seafood International, a major company in exports of seafood from Iceland to all main markets around the world (Irish Independent, 2018).

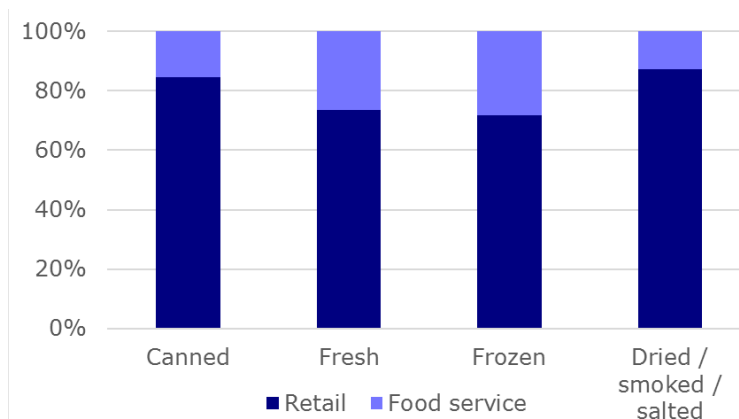
- Irish Fish Cannery

Irish Fish Cannery is the only fish canning facility in Ireland, based in North West County Donegal. It specialises in the canning of pelagic species (herring, mackerel and sardine) and supplies markets both domestically and internationally. The company is a co-packing business for Irish market leader John West. In 2015, Irish Fish Cannery launched its own canned mackerel brand: the Irish Atlantic Canned Fish brand (Irish Canner, 2018).

- Krijn Verwijs (Netherlands)

Krijn Verwijs Yerseke B.V. is one of the largest players in the European crustaceans and shellfish market. The company specialises in the marketing of mussels, oysters, lobsters and various types of shellfish, which partially originate from Ireland. Mussels are supplied to supermarket chains and wholesalers in Europe under the brand name Premier and other private labels (Krijn Verwijs Yerseke, 2018).

About half the fish and fish products that enter the Irish food market is sold as fresh. 32% is sold as frozen. Dried/smoked/salted fish accounts for 13% of all fish and fish products sold in Ireland. Similar to other countries, three quarters of all fish and fish products are sold through retail outlets, the remainder is sold in the food service industry. Slightly less than 75% of both fresh and frozen fish products are sold through retail outlets, whereas approximately 85% of both canned and dried/smoked/salted fish and fish products are sold through retail (see Figure 58).

Figure 58: Ireland: Fish product end industry

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Different from countries such as France (see Chapter 10) and Greece (see Chapter 12), the vast majority (90%) of fresh fish sold through Irish retailers is sold as branded. The remainder is sold under retailers' own label. The proportion for canned and frozen are slightly lower. Respectively 69% and 67% of those categories is sold as branded, with the remainder sold under own labels.

Table 43: Ireland: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	90%	69%	67%	70%
Unbranded				
Own label	10%	31%	33%	30%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

A key brand for fresh fish in Ireland is Keohane's Seafood with a market share of approximately 30% of the fresh segment (FFT, 2018). Iglo (part of Nomad (UK)) is the market leader in the Irish frozen fish segment with a market share of around 31%, while the frozen brands of 2 Sisters Food Group have a market share of around 28% (ibid.). In the canned segment, the John West brand of Thai Union (Thailand) holds around 56% of the market, while Princes (part of Mitsubishi (Japan)) accounts for approximately 14% (ibid.). Dunn's of Dublin (part of Oceanpath) holds a share of around 49% of the dried/smoked/salted fish segment in Ireland, while HJ Nolan, Irish Seaspray, Quinlan's Kerry Fish and Carr & Sons hold a share of approximately 10% each in this segment (ibid.).

13.2. Producer organisations

Ireland has five EU recognised POs (Table 44) under the umbrella of the Federation of Irish Fishermen (FIF), formed in 2007. Due to lack of data availability, the number of vessels and members is not provided.

Table 44: Ireland: Recognized producer organizations

Producer Organisation
Irish Fish Producers' Organisation (IFPO)
Killybegs Fishermen's Organisation Ltd (KFO)
Irish Seafood Producers' Group Ltd (ISPG)
Irish South & West Fish Producers Organisation Ltd (IS&WFPO)
Irish South and East Fish Producers (IS&EFPO)

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission.

In Ireland, quota is a public resource managed to ensure that property rights are not granted to individual vessel owners. The Quota Management Advisory Committee (QMAC) meets monthly to advise the DAFM Minister in their decision-making process regarding quota allocation for particular fish stocks, mainly whitefish. Pelagic fisheries are generally managed on a seasonal basis (spring and autumn months). The QMAC is composed of fishing industry representatives: one member from each of the four national Fisheries Producer Organisations (PO), one member from the National Inshore Fisheries Forum, one member from the Fish Producers and Exporters Association and one member of the Fishing Co-Operative Association. The Minister follows their recommendations as far as possible (DAFM, 2018; Carpenter & Kleinjans, 2017).

Irish Fish Producers' Organisation (IFPO)

The IFPO was the first PO established in Ireland, in 1975. It is comprised of fishers based throughout the Irish coastline. The IFPO represents fishers engaged in pelagic, whitefish, shellfish and inshore sectors. The Board of Directors of the Organisation is elected by members and is currently constituted of nine representatives (Irish Fish Producers' Organisation, 2018).

Killybegs Fishermen's Organisation Ltd. (KFO)

The KFO was recognised as a PO in 1985 and is the largest PO in Ireland, with members throughout the country. It represents fishers in pelagic, whitefish and shellfish sectors. Of the 23 RSW pelagic vessels in Ireland, 20 are members of KFO (Fish Info & Services, 2018).

Irish Seafood Producers' Group Ltd (ISPG)

The ISPG was established by a small group of independent Irish fish farmers in 1985. It is now the principal organisation for the sales and marketing of Irish farmed finfish products and is Ireland's leading supplier of organic salmon and trout farmed at sea. The ISPG's marine sites are located along the Irish Atlantic Coast (Irish Seafood Producers Group, 2018).

Irish South & West Fish Producers Organisation Ltd. (IS&WFPO)

The IS&WFPO was created in 1994. The Organisation represents coastal fishers in the south and west coast of Ireland. Its members are mostly owners of whitefish vessels ranging from 12 to 30 m. The organisational structure consists of a Chairman, Secretary, Manager and a Board of Directors, currently comprising 11 Directors (The Irish South and West Fish Producers Organisation, 2018).

Irish South and East Fish Producers (IS&EFPO)

The IS&ESPO was recognised as an official PO in 2013 and is based in Waterford. Its members are part of the coastal fishing fleet (European Commission, 2018). No additional information could be found on the IS&EFPO.

13.3. Company analysis

This section provides an analysis of the company structures of six of the most important fish catching companies active in Ireland. The section is organized as follows: section 13.3.1 presents analyses of the company structures of fishing enterprises engaged predominantly in the pelagic segment; and section 13.3.2 focuses on a company active in the demersal segment.

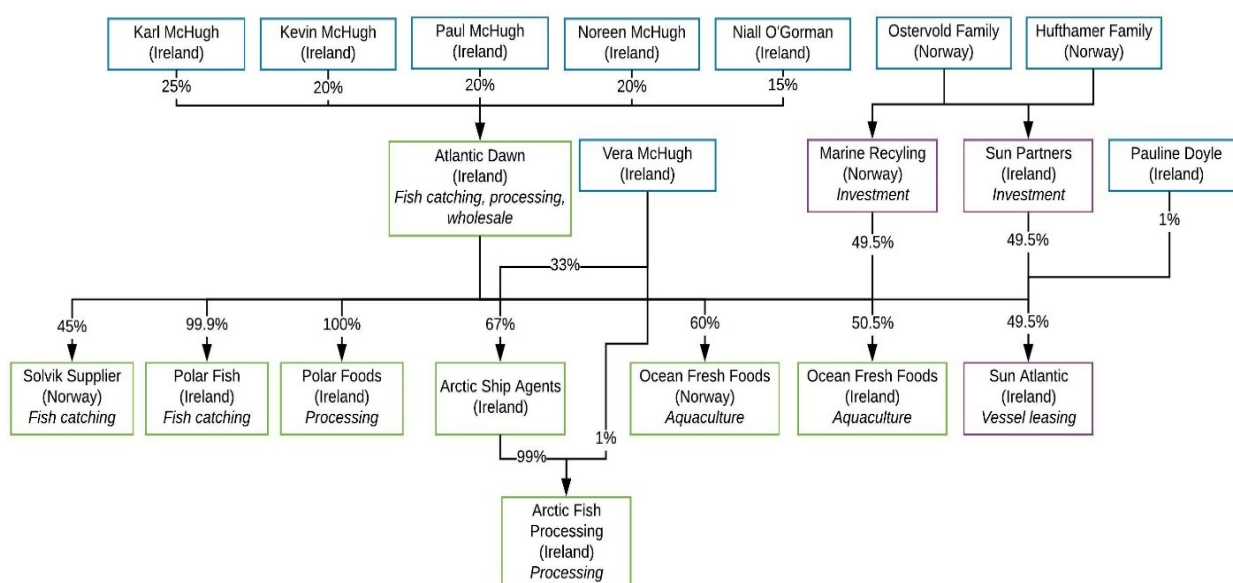
13.3.1. Pelagic segment

13.3.1.1. Atlantic Dawn Group

The Atlantic Dawn Group was established in 1968. The company is a world leader in the catching and processing of pelagic fish, which are generally sold frozen. The Atlantic Dawn Group operates its own fleet, in addition to a number of independently owned vessels. Its 13 vessels are equipped with either purse seines or trawlers. The Group also owns and operates two shore freezing facilities: Arctic Fish Processing located at the company's homeport in Killybegs; and Atlantic Dawn Seafoods A/S located on the Island of Smola in Norway. Products are sold unbranded, in bulk, and 99% of the production is exported worldwide, mostly to buyers located in West Africa, Russia and the Far East (Atlantic Dawn, 2018). Together with the Norwegian Ostervold and Hufthamer families, Atlantic Dawn also operates vessel leasing and aquaculture enterprises.

The company's current directors are Niall O'Gorman and Karl McHugh (Company Registration Office, 2018a).

Figure 59: Atlantic Dawn company structure



Source: Orbis (2018, May), "Current shareholders: Atlantic Dawn", viewed in May 2018; Orbis (2018, May), "Current subsidiaries: Atlantic Dawn", viewed in May 2018; Orbis (2018, September), "Current shareholders: Sun Atlantic Dawn", viewed in September 2018; Svensson, A. (2013, November), "Atlantic Dawn & Antarctic Fishing", *Njord*, online: <http://fiske.zaramis.se/2013/11/02/atlantic-dawn-antarctic-fishing/>, viewed in September 2018.

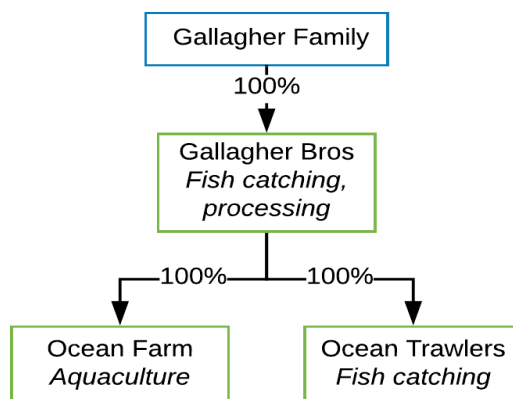
The description above has shown that Atlantic Dawn is both vertically and horizontally integrated. It has activities all down the seafood value chain from fish catching and processing to distribution. Moreover, it has a sizeable fleet in Ireland, as well as aquaculture activities in both Ireland and Norway, indicating horizontal integration. Director Niall O’Gorman is on the board of Irish Pelagic – a Dutch Jaczon subsidiary (see section 18.3.2) – indicating also potential informal integration (Svensson, 2013).

13.3.1.2. Gallagher Bros (Fish Merchants)

Gallagher Bros (Fish Merchants) is a family run business based in Killybegs, established in 1919. The company specialises in the catching and primary processing of pelagic species such as mackerel, herring and blue whiting. The company has three processing plants in County Donegal. Final products range from whole frozen to marinated skinless fillets. All sales are in bulk to secondary processors in Europe, USA, Japan, Korea, China, West Africa and Egypt (100% exported). Gallagher Bros own Ocean Trawlers Ltd., which operates RSW pelagic vessels out of the port of Killybegs, and Ocean Farm Ltd., a salmon farming company located in Donegal Bay (Gallagher Bros, 2018).

The company’s current directors are Tadhg Gallagher, Anne Gallagher, Michael Gallagher and Patrick Gallagher. As at 31st July 2017, Gallagher Bros’ Ocean Trawlers Ltd. had net assets of € 7 million and employed a total of 12 people (Company Registration Office, 2018b).

Figure 60: Gallagher Bros (Fish Merchants)



Source: Orbis (2018, September), “Current subsidiaries: Gallagher Bros (Fish Merchants)”, viewed in September 2018; Orbis (2018, September), “Current shareholders: Gallagher Bros (Fish Merchants)”, viewed in September 2018.

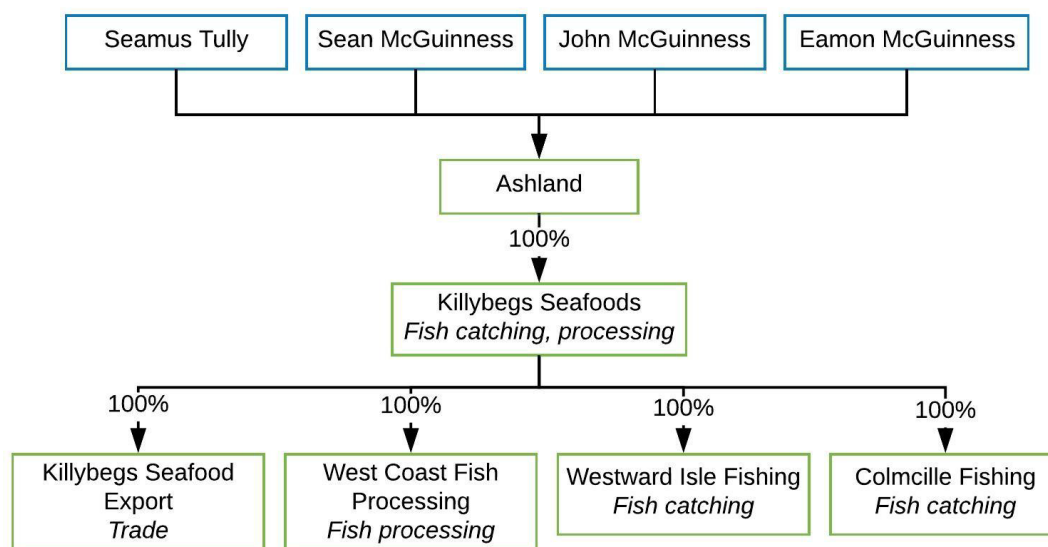
The description and company structure shows signs of both vertical and horizontal integration. The company operates processing plants, indicating structural vertical integration. The company also operates more than one vessel, a sign of horizontal integration through fleet expansion.

13.3.1.3. Killybegs Seafoods

Killybegs Seafoods was established in 1986. Its principal activity is the primary processing of pelagic species. Raw material is sourced from the North West Atlantic waters and brought to the factory by RSW trawlers. The company contracts six Irish fishing vessels, of which it owns 3. To a lesser extent Killybegs Seafoods also receives supplies of raw material from other Irish, UK and Norwegian vessels. Products are sold under the Killybegs Seafoods brand. Export markets (99% of total production) are primarily the Far East, Russia, Europe, Egypt and West Africa (Killybegs Seafood, 2018).

The company's current directors are Sean McGuinness and Seamus Tully. As at 31st March 2017, Killybegs Seafoods (Export) Ltd. had net assets of € 140,786 (Company Registration Office, 2018c).

Figure 61: Killybegs Seafoods company structure



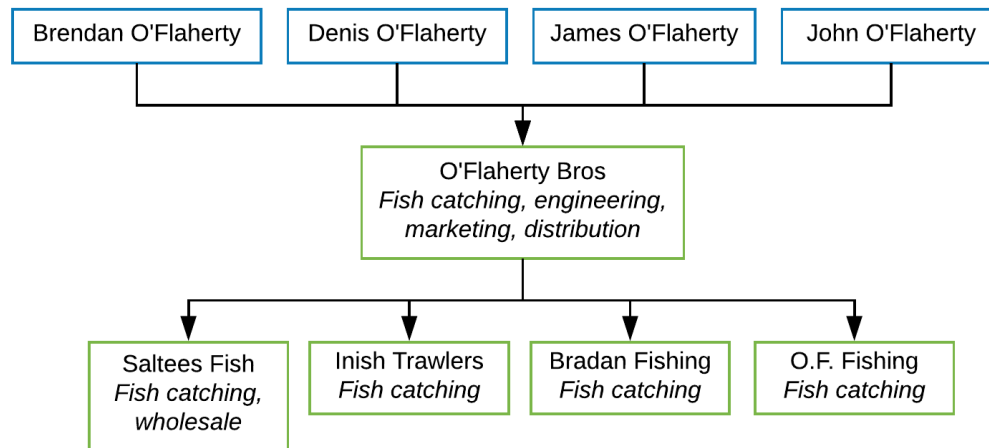
Source: Orbis (2018, September), "Current subsidiaries: Killybegs Seafood", viewed in September 2018; Orbis (2018, September), "Current shareholders: Killybegs Seafood", viewed in September 2018; Orbis (2018, September), "Director's report: Seamus Tully", viewed in September 2018; Orbis (2018, September), "Director's report: Sean McGuinness", viewed in September 2018; Orbis (2018, September), "Director's report: John McGuinness", viewed in September 2018; Orbis (2018, September), "Director's report: Eamon McGuinness", viewed in September 2018.

The analysis above has shown that Killybegs Seafoods is part of a both vertically and horizontally integrated group. Horizontal integration is evident through its fleet size and the number of the fish catching subsidiaries. Vertical integration is seen in Killybegs Seafoods' business activities in three stages of the seafood value chain: fish catching, processing and trade.

13.3.2. Demersal segment

13.3.2.1. Saltees Fish

Saltees Fish is a family owned business founded in 1996, based in Kilmore Quay (County Wexford, South East of Ireland). The company specialises in fresh whole and filleted whitefish (mostly megrims and monkfish) and prawns. It is engaged in catching, handling and processing of fish caught from its own fleet of trawlers for supply to the domestic and export market. Forty percent of Saltees Fish products are sold domestically, while 60% reach European markets, mainly Spain, France, Belgium, Holland and Italy. The owners of the company, the O'Flaherty Brothers, operate over ten beam trawlers, three twin riggers and a pelagic vessel. Michael O'Flaherty is the current Managing Director of Saltees Fish (Saltees Fish, 2018).

Figure 62: Saltees Fish company structure

Source: Orbis (2018, September), "Current subsidiaries: O'Flaherty Bros", viewed in September 2018; Orbis (2018, September), "Current shareholders: O'Flaherty Bros", viewed in September 2018; Orbis (2018, September), "Director's report: James O'Flaherty", viewed in September 2018; Orbis (2018, September), "Director's report: Denis O'Flaherty", viewed in September 2018.

The analysis above has shown that Saltees Fish is both vertically and horizontally integrated. Horizontal integration is evident through the size of its fleet and the number of fish catching subsidiaries. Moreover, horizontal integration is cross-segment, i.e. Saltees is active in both the demersal and pelagic segments. As the company is active in fish catching and wholesale, it is also a vertically integrated company. Denis O'Flaherty stated that the company does not have processing operations as the market prefers non-processed whitefish (O'Flaherty, 2018).

13.4. Integration

The analysis shows that there is both vertical and horizontal integration taking place in the Irish seafood value chain. Most fishing companies and vessels in Ireland are owned by fishermen (i.e. not big companies owning several vessels) (Murphy, 2018). Hence, there is not much integration, only a few companies own both vessels and a factory/factories (ibid.).

Donal Buckley, Director of Business Development and Innovation Services at BIM (Ireland's Seafood Development Agency), states that the levels and forms of vertical integration depend on the sector. He states that the pelagic sector is generally integrated, as companies are a mix of vessels and processing factories (Buckley, 2018). This segment accounts for one third of the seafood sector in Ireland (ibid.). The shellfish sector also has processing companies. These buy raw material directly from the fishing vessels (ibid.). For whitefish and crustaceans, cooperatives are the first point of landing (ibid.). These cooperatives then sell to processing companies on a supply basis (ibid.). Some of these cooperatives have become businesses (O'Flaherty, 2018).

Pelagic companies are investing in processing to develop value added products and the processing of by-products (Buckley, 2018). Pelagic companies harvest large amounts of fish, and have access to sufficient quota (O'Donoghue, 2018). Therefore, they can open factories as they have sufficient supply (Murphy, 2018). Factories need access to quota/large amounts of raw materials; hence smaller processing companies cannot compete (ibid.). Smaller processing companies generally do not own boats (ibid.). It is generally the vessel owners which invest in processing facilities, rather than the other way around (Buckley, 2018; O'Donoghue, 2018). Processing companies also invest in vessels but not as much as fish quota in Ireland is a public resource (ibid.). However, some processing companies develop supplier alliances (Buckley, 2018).

Ireland is very bureaucratic and expensive to invest in processing (O'Flaherty, 2018). Currently, there is a lack of scale to be able to compete on the market for the processing industry (O'Donoghue, 2018). Moreover, there is a lot of legislation involved in fishing (for nets, gear, training, monitoring, quotas, hygiene, safety etc.) (ibid.). Traditional fishermen can't cope with it, it is financially and timewise impossible (ibid.). On the contrary, big companies get into a pattern, they have staff that only deals with this, so it is easy/manageable for them (ibid.). Due to this and other factors, Murphy claims that small companies are being wiped out as big companies are taking over (Murphy, 2018).

There is relatively limited foreign ownership in the Irish seafood sector. Companies are mainly Irish-owned (approximately 80%), although there is an increase in international investments in aquaculture and processing (Buckley, 2018).

One of the effects of integration has been an increase in employment in the processing sector. As the fish harvest does not increase so much, there is no increase of labour on the vessels, however, there is increasingly more in the processing sector (Buckley, 2018). Nevertheless, as processing facilities modernise, the employment opportunities decrease (Murphy, 2018). This happened in Ireland especially over the last decade (ibid.).

There are over 160 fishing companies in Ireland, 40 of which continue investing in their company, 20 to 25 significantly, mainly in processing where value is added to the products, but also in vessels for efficiency – mainly in gear technology to manage the landing obligation (Buckley, 2018). The landing obligation has meant that companies are making investments at boat level to increase efficiency (ibid.).

There are concerns about Brexit. It is expected that UK boats will head towards Irish waters (Murphy, 2018). Patrick Murphy from the Irish South & West Fish Producers Organisation argues that the relative stability measure will have to change (ibid.). If not, small fishing companies will not survive (ibid.).

There are no quota swaps and there is no quota leasing or similar practices, as quota is not privately owned (Murphy, 2018). Fishing quota in Ireland belongs to the state, i.e. is not privately allocated to licenses linked to vessels. Hence, it does not make sense to buy several vessels as a company to own more quota (ibid.). Quota is allocated monthly which forces boats to implement expensive modernisation to be efficient (ibid.). Ever fewer boats are going to sea (ibid.). Only fishermen (or companies) that can afford modernisation are able to compete (ibid.). This has led to important changes in the dynamic of coastal communities over the last couple of decades (ibid.).

14. ITALY

KEY FINDINGS

- **Fleet decreased** from 17,367 vessels (2010) to 12,310 (2016)
- The number of Italian **vessels** involved in **Bluefin** tuna fishing **decreased** from **98** in 2000 **to 15** today
- The **establishment of** the 130 tonnes **minimum capacity criterion** was the main **driver of integration**
- **No outward** foreign **investment** by **Italian fishermen** to access **more quota**
- **Bluefin tuna segment** is the only one where you find **structural integration**
- Informal integration by making **offtake agreements** is quite **common**

14.1. Composition of the Italian seafood sector

In 2015, Italian fish catching companies generated € 894 million in landings income (Table 45). Fish processing companies generated € 2.5 billion in production revenue.

Italy had a fish and fish product trade deficit of € 4.9 billion in 2016. It exported fish worth € 675, while it imported € 5.5 billion. It imported 60% of its fish from EU countries. Italy's main import partners were Spain (21%), the Netherlands (6%) and Denmark (6%).

81% of Italy's fish and fish product exports were destined to other EU countries. The main export destinations for Italian fish products were Spain (19%), Germany (12%) and France (9%).

In 2015, there were 12,426 registered commercial fishing vessels in Italy. These were owned by 8,004 enterprises. 1,166 enterprises (15% of all fishing enterprises) owned more than one vessel.

The Italian fish catching segment employed 21,459 fte. The average employment per vessel was therefore 1.7 fte. This indicates the full-time nature of the Italian fishing segment. The fish processing segment employed a far smaller workforce at 2,388 fte.

Italy's coastline is around 9,000 km long. The length of the coastal regions is about 10 % of the EU total.

Between 2010 and 2017, the total number of vessels decreased from 17,367 to 12,310 (Eurofish, 2018; STECF 2018). Meanwhile, marine catches dropped by 44% between 2006 and 2014. Italy's fleet is highly diversified with a broad range of vessel types targeting different species, predominantly in the Mediterranean Sea. Small-scale fishing vessels account for the largest segment within the fleet (8,763 vessels), followed by trawlers (2,542 vessels), and hydraulic dredges (706) (Eurofish, 2018).

Due to international and European management measures, the number of Italian vessels involved in Bluefin tuna fishing decreased from 98 in 2000, to 48 in 2009, to 12 in 2011. In 2018, the EU decided to increase the TAC for Italy. The extra quota was distributed inter alia among three other vessels. Therefore, currently 15 vessels are authorized for Bluefin tuna fishery. A Ministerial Decree of 28 May 2010 prescribes 130 tonnes as the minimum capacity of vessels practicing the seine fishing method, which is used for fishing Bluefin tuna (Ferrigno, 2018).

The main species targeted in Italy are small pelagics like anchovy and sardine. The main large pelagics that are landed are Bluefin tuna, albacore and swordfish. Among demersal fish, most caught are hake and red mullet. An important portion of total Italian landings is

cephalopods, comprising cuttlefish, octopus, and horned octopus. The deep-water rose shrimp and the spot tail mantis shrimp are the most important crustaceans landed. “*The catch composition of marine fisheries is very heterogeneous, reflecting both the different gears in use, various fishing grounds, and the high biodiversity of aquatic resources*” (Eurofish, 2018).”

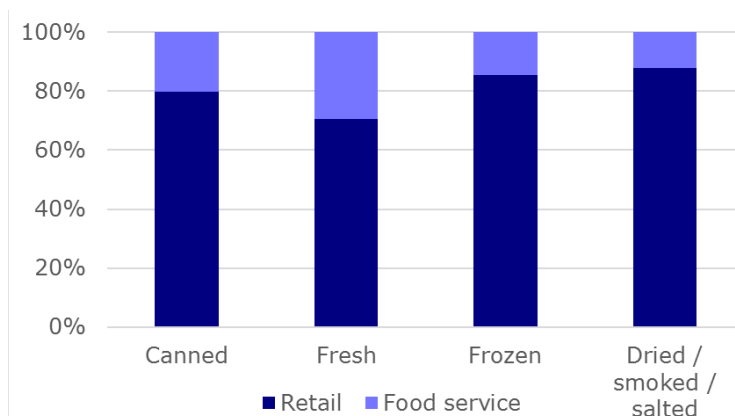
Table 45: Italian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	12,310	
		11,202	91%
	Average vessel tonnage per vessel (2015, GT)	13	
	Average vessel tonnage per enterprise (2015, GT)	20	
<i>Enterprises</i>	Number of fishing enterprises (2015)	8,004	
	Enterprises with more than one vessel (2015, number, % enterprises)	1,166	14.6%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	894	0.05%
	Average landing income per fte employed (2015, €)	41,662	
	Average landing income per vessel (2015, €)	71,949	
	Average landing income per enterprise (2015, €)	111,698	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	21,459	0.10%
	Average employment per vessel (2015, fte)	1.7	
	Average employment per enterprise (2015, fte)	2.7	
Processing	Processing production (2016, € mln, % GDP)	2,388	0.14%
	Employment in the fish processing sector (2015, fte, % workforce)	4,002	0.02%
	Average processing production per fte employed (2015, €)	596,727	
Trade	Trade balance (2016, € mln, % GDP)	-4,874	0.29%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	675	0.04%
	1. Spain (2016, € mln, % export)	128	19%
	2. Germany (2016, € mln, % export)	84	12%
	3. France (2016, € mln, % export)	61	9%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	5,549	0.33%
	1. Spain (2016, € mln, % import)	1,152	21%
	2. Netherlands (2016, € mln, % import)	358	6%
	3. Denmark (2016, € mln, % import)	325	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Just over 70% of the fish and fish products that enter the Italian seafood market are sold as fresh. 10% is sold canned, 12% as frozen, and the remainder as dried/smoked/salted. Similar to other countries, approximately three quarters of the fish and fish products sold in Italy are sold through retail outlets, the remaining 25% is sold in the food service industry. 71% of fresh fish is sold through retail outlets, the remainder through food service establishments (see Figure 63). More than 80% each of the other fish and fish product categories are sold through retailers.

Figure 63: Italy: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

The vast majority of fresh fish (87%) is sold unbranded in retail outlets, only 13% is sold as branded. None of the other categories is sold unbranded (see Table 46). More than 80% of canned and frozen fish products sold in Italy are sold as branded, the remainder is marketed with the retailers' own labels.

Table 46: Italy: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	13%	83%	84%	100%
Unbranded	87%			
Own label		17%	16%	

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

As brands only play a minor role in fresh seafood in Italy, none of them hold a large market share. Finpesca accounts for approximately 2% of the fresh fish market in Italy, Azzurra Pesca holds a share of 1% (FFT, 2018). In the frozen fish products segment, Iglo (Nomad (UK)) accounts for about 35% of the market, Pescanova Italia (part of Pescanova (Spain) (see section 23.3.3)) has a share of around 10% in the frozen segment in Italy (ibid.). In the canned fish products segment, Bolton Group (Netherlands) with brands such as Saupiquet and Rio Mare holds a share of approximately 31%, Grupo Calvo (Spain) with its Nostromo brand holds a share of approximately 11% (ibid.). In the dried/smoked/salted product segment, Fjord (acquired by Agroittica Lombarda in late 2017) holds a share of around 15% of the Italian market, Coam's brands account for a share of around 6% (ibid.).

14.2. Producer organisations

0 provides an overview of the 43 producer organisations in Italy, currently recognized by the European Union authorities. Due to lack of data availability, the number of vessels and members is not provided.

Table 47: Italy: Producer organizations

Producer organisations	Segment
Consorzio delle Cooperative Pescatori del Polesine Soc. Coop. a r.l.	Aquaculture
Organizz. di prod. e pescatori di vongola della sacca di goro e gorino soc.coop.	Aquaculture
Organizzazione di Produttori di Molluschi Bivalvi del Mare Veneto Società Cooperativa	Aquaculture
Organizzazione produttori vongola di goro soc. coop.	Aquaculture
Produttori Molluschi Associati Friuli Venezia-Giulia PMA-FVG	Aquaculture
Associazione civitanovese produttori ittici	Coastal fishing
Associazione produttori pesca - DOMAR SCRL	Coastal fishing
Associazione. Produttori Pesca fra Pescatori ed Armatori della Piccola Pesca porto San Giorgio	Coastal fishing
Cooperativa di pesca "marinai e caratisti" a.r.l.	Coastal fishing
Organizzazione di Produttori della Pesca	Coastal fishing
Cooperativa Pescatori di Pila - Organizzazione di Produttori Soc.Coop.a r.l.	Coastal fishing
O.P. Abruzzo Pesca	Coastal fishing
Organizzazione di produttori "cittadella della pesca" soc. coop.	Coastal fishing
Organizzazione di produttori della pesca di Trapani e delle isole egadi soc.coop	Coastal fishing
Organizzazione di produttori della vongola e dei molluschi di rimini Soc. Coop.	Coastal fishing
Organizzazione di produttori di pesce azzurro ancona Soc. Coop.	Coastal fishing
Organizzazione di produttori ittici labronica pesce soc. cons. ar.l.	Coastal fishing
Organizzazione di produttori vongole costa del teramano (vocoter) soc. coop. a r.l.	Coastal fishing
Società Cooperativa di mutua assistenza per azioni a responsabilità limitata	Coastal fishing
Associazione produttori tonnieri del Tirreno, SCRL	High-sea fishing
O.P. della pesca grandi pelagici di porticello soc.coop.	High-sea fishing
Organizzazione produttori della pesca del tonno con il sistema del palangaro	High-sea fishing
Associazione produttori pesca "San Marco" SCRL	Small-scale and artisanal fishing
Associazione Produttori Pesca Adriatica – Local small-scale fishing	Small-scale and artisanal fishing
Associazione produttori pesca di Ancona	Small-scale and artisanal fishing
Associazione produttori pesca di Goro	Small-scale and artisanal fishing
Associazione Produttori Pesca Etruria	Small-scale and artisanal fishing
Associazione Produttori Pesca, Coop. Scarl	Small-scale and artisanal fishing
Associazione produttori pesca, SCRL con sede in Cattolica	Small-scale and artisanal fishing
Associazione produttori pesca, SCRL di Cesenatico	Small-scale and artisanal fishing
Associazione produttori piccola pesca di Ancona s.c. a r.l.	Small-scale and artisanal fishing

Producer organisations	Segment
Consorzio Ittico del Golfo di Trieste – Local small-scale fishing	Small-scale and artisanal fishing
Cooperativa della piccola e grande pesca soc. coop	Small-scale and artisanal fishing
Cooperativa fra Pescatori "La Sirena"	Small-scale and artisanal fishing
Organizzazione dei Produttori Ittici del Sud Adriatico	Small-scale and artisanal fishing
Organizzazione di Produttori "Consorzio Linea Azzurra"	Small-scale and artisanal fishing
Organizzazione di produttori "Il gambero e la trigla del canale"	Small-scale and artisanal fishing
Organizzazione di Produttori Armatori ed Operatori della Pesca di Cesenatico	Small-scale and artisanal fishing
Organizzazione di produttori coop pila mare soc. coop.	Small-scale and artisanal fishing
Organizzazione di produttori cooperativa coopesca soc arl	Small-scale and artisanal fishing
Organizzazione di Produttori della Pesca di Fano, Marotta e Senigallia	Small-scale and artisanal fishing
Organizzazione di produttori della pesca di fasolari dell'alto Adriatico	Small-scale and artisanal fishing
Organizzazione di produttori della pesca di Trapani consorzio di soc. coop	Small-scale and artisanal fishing
Organizzazione di produttori della pesca san basso soc. coop.	Small-scale and artisanal fishing

Source: European Commission (2017, December) *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*.

Table 48 provides an overview of the producer organisation associations. There are two producer organisation associations in Italy: The Feder.OP and the Associazione nazionale di organizzazioni di produttori del settore ittico. Mario Bello, president of the Feder.OP, states that POs receive too little funding to bring about ambitious plans of market restructuring. Restructuring is necessary as the Italian fisheries sector is going through a deep crisis (Bello, 2018).

Not much information about the other producer organisation association could be found as there is no website. They are recognized by the Italian government (Gazzetta Ufficiale, 2010).

Table 48: Italy: Producer organization associations

Producer organisation associations	Segment	Members
Associazione di Organizzazioni di Produttori Feder OP.IT	Aquaculture	27 recognized Pos 4 POs waiting for recognition 1 recognized Inter-Professional organization
Associazione nazionale di organizzazioni di produttori del settore ittico	High-sea fishing	

14.3. Company analysis

According to a company screening, the list of top-6 fishing companies in Italy, based on revenues, is led by Asaro Matteo Cosimo Vincenzo S.R.L., with revenues of € 14.7 million in 2016 and 45 employees. The next biggest fishing company, Azzurra Pesca S.R.L. Unipersonale, had revenues of € 4.1 million and only seven employees (see Table 49).

Table 49: Italy: Top fishing companies (2016, revenue)

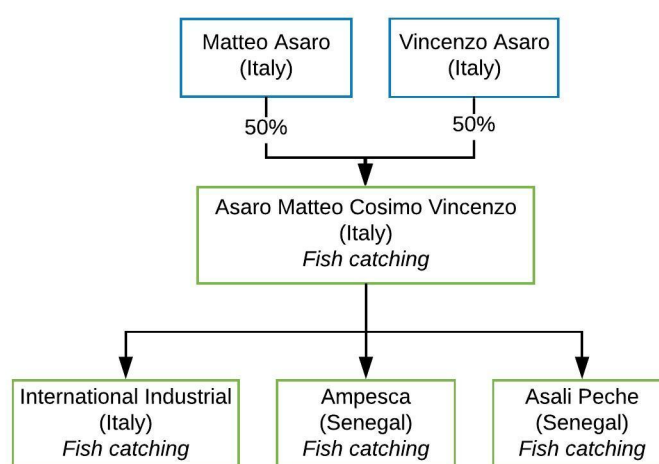
Parent company	Revenues 2016 (€ mln)	No. employees (2016)	No. of vessels
Asaro Matteo Cosimo Vincenzo S.R.L.	14.7	45	14
Azzurra Pesca S.R.L. Unipersonale	4.1	7	2
Testa Giuseppe E.C.S.R.L.	2.4	13	2
Pescatori San Pietro Apostolo	2.0	18	2
Euro Pesca Cetara S.R.L.	1.6	18	1
Pescatori La Tonnara Societa' Cooperativa	1.5	9	2

Source: Orbis, "Asaro Matteo Cosimo Vincenzo S.R.L.", viewed in April 2018; Orbis, "Azzurra Pesca S.R.L. Unipersonale", viewed in April 2018; Orbis, "Testa Giuseppe E.C.S.R.L.", viewed in April 2018; Orbis, "Pescatori San Pietro Apostolo", viewed in April 2018; Orbis, "Euro Pesca Cetara S.R.L.", viewed in April 2018; Orbis, "Pescatori La Tonnara Societa' Cooperativa", viewed in July 2018.

14.3.1. Asaro Matteo Cosimo Vincenzo

As Table 49 shows, Asaro Matteo Cosimo Vincenzo had the largest revenues and most employees in 2016. Figure 64 provides an overview of the Asaro Matteo Cosimo Vincenzo company structure. Matteo Asaro and Vincenzo Asaro are the ultimate owners of Asaro Matteo Cosimo Vincenzo. Both of them hold 50% of the company. Asaro Matteo Cosimo Vincenzo owns 13 vessels. The subsidiary International Industrial owns one vessel. Three of the vessels owned by Asaro Matteo Cosimo Vincenzo operate in Senegal, the others are operating in Italy.

Asaro Matteo Cosimo Vincenzo used to fish only near the Italian coast, but around 1960, thanks to new technologies that allowed the onboard freezing, they extended their fishing area to the Eastern Central part of the Atlantic Ocean (FAO area 34) and the Mediterranean Sea and the Black Sea (FAO area 37).

Figure 64: Asaro Matteo Cosimo Vincenzo company structure

Source: Orbis (2018, April), "Current shareholders: Asaro Matteo Cosimo Vincenzo S.R.L.", viewed in April 2018; Orbis (2018, April), "Current subsidiaries: Asaro Matteo Cosimo Vincenzo S.R.L.", viewed in April 2018.

Two other companies are registered at the same address as Asara Matteo Cosimo Vincenzo: Asaro Pesca and Asaro Seafood. Asaro Pesca – a restaurant – has two shareholders, namely Salvatore Asaro owning 99% of the shares, and Caterina Vannutelli owning the remaining 1%. Asaro Seafood is owned by Pasquale Asaro. Both companies seem to be engaged in processing and marketing fish (Asaro Seafood, n.d. and Pagine Gialle, n.d.). It is likely that these individuals are relatives of the owners of Asara Matteo Cosimo Vincenzo.

The analysis above shows that the company is integrated horizontally. This is evident through the size of its fleet, and its investments in vessels active in Senegal. Asara Matteo Cosimo Vincenzo may be vertically integrated through relations with the fish processing and marketing companies registered at the same address and owned by individuals which share their family names with the owners of Asara Matteo Cosimo Vincenzo.

14.3.2. Azzurra Pesca S.R.L. Unipersonale

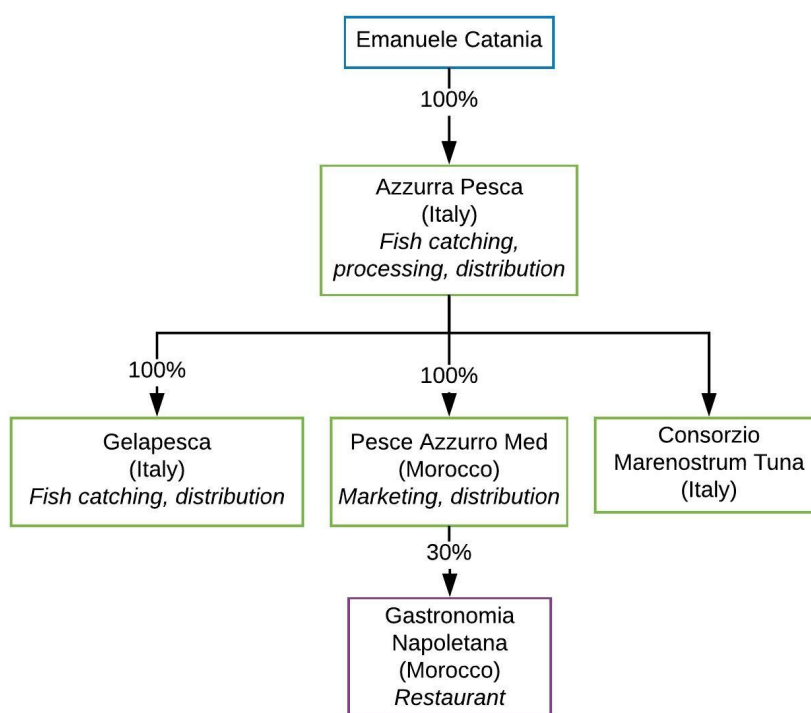
Azzurra Pesca is a medium-sized fishing company, founded in 1983 by the Catania brothers. In 2015, the company expanded with Pesce Azzurro Med, a company aimed at marketing preserved fish products, with its headquarters in Morocco (Azzurra Pesca. n.d.).

The company owns two vessels. Its trawler is a 46m tuna trap called Angelo Catania, which has the third highest ICCAT quota (Maximum fishing capacity of Bluefin tuna) in Italy. Its main activity is fishing Bluefin tuna, from 25 May to 25 June, while in the remaining months of the year it focuses on anchovies and sardines. The smaller vessel – Padre Pio – is a support boat to the trawler during the Bluefin tuna fishing. Like Angelo Catania, during most of the year it is used for fishing anchovies and sardines. The company operates in the Mediterranean, coastal and lagoon fishing sector in inland waters (Azzurra Pesca, n.d.a).

Azzurra Pesca markets a brand of fish products (Azzurra Pesca, n.d.b).

Together with Testa Giuseppe (see section 14.3.3), Pescatori San Pietro Apostolo (see section 14.3.4) and Pescatori La Tonnara Societa' Cooperativa (see section 14.3.6), Azzurra Pesca is one of the owners of the Consorzio Marenostrum Tuna. This consortium was created in 2012 for the promotion of Bluefin tuna in Italy and is based in Salerno. At the time the new organization started, nine of the (then) twelve national vessels authorized to tuna fisheries joined, with the aim of involving all the Italian quota assigned to this trade (Ansa, 2012).

Figure 65: Azzurra Pesca company structure



Source: Orbis (2018, April), "Current shareholders: Azzurra Pesca S.R.L. Unipersonale", viewed in April 2018; Orbis (2018, April), "Current subsidiaries: Azzurra Pesca S.R.L. Unipersonale", viewed in April 2018.

The above analysis illustrates that Azzurra Pesca is both vertically and horizontally integrated. Levels of horizontal integration are small as the company only operates two vessels. However, these vessels target different species during the course of the year indicating portfolio diversification. Azzurra Pesca is vertically integrated as it not only harvests fish, it also processes and markets them under the brand Azzurra and is engaged in gastronomy in Morocco.

14.3.3. Testa Giuseppe

Testa Giuseppe is based in Ognina, Catania. The company currently has four shareholders, all Testa family members. The Testa family has been active in the fishery sector for over 200 years (Testa, 2018).

The core business of the company is Bluefin tuna fishing, but involvement in the segment of small pelagic species has allowed the company to stabilize production and ensure occupational stability (Testa, 2018). The company owns a 45m vessel, called Atlante, which was authorised for Bluefin tuna fishing after the company in 2010 collected quota from other vessels. Testa Giuseppe acquired a second vessel in 2012, the Futura Prima, which was also intended for tuna fishing, but it did not meet the requirements (130 tonnes criterium). It supports the bigger vessel during the Bluefin tuna fishing season, and during the rest of the year it is active in fishing small pelagic species. The small pelagic fishing activities are mainly around the Aeolian islands and the Ionian Sea, whereas the Bluefin tuna fishing takes place in the Tyrrhenian area around Calabria (Testa, 2018).

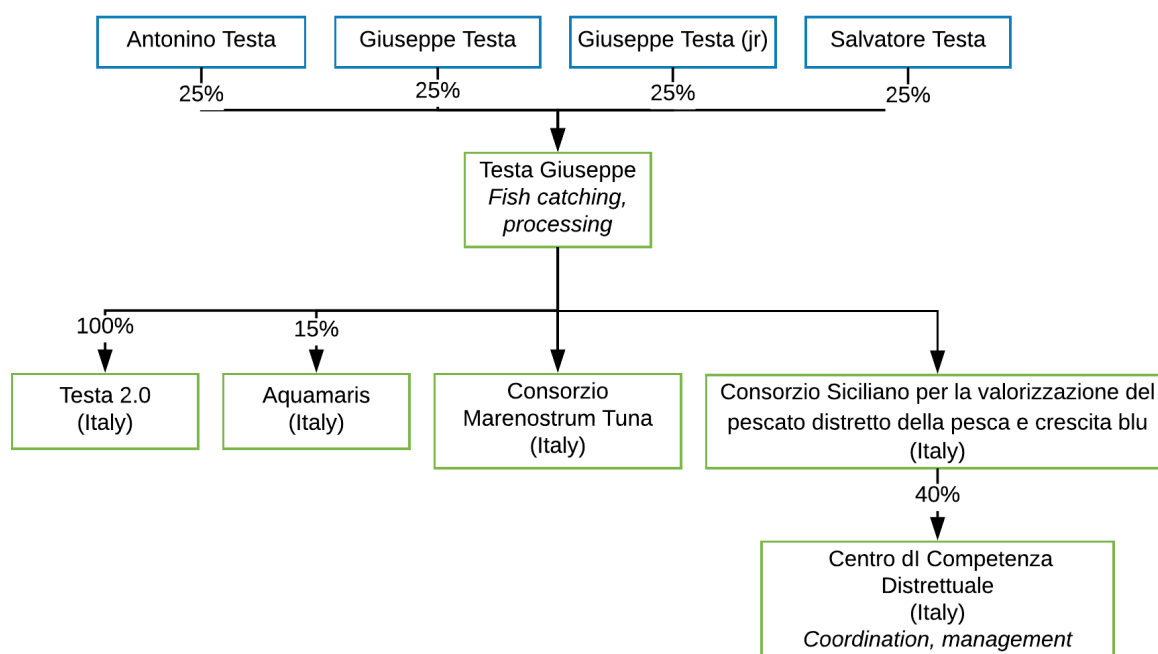
Both investments, buying the quota and buying the second vessel, had various drivers: remaining in the market of Bluefin tuna fishing and stabilizing the company revenues (Testa, 2018).

The bigger vessel is involved in research and promotional activities outside the fishing season for Bluefin tuna (Testa, 2018).

Whereas its main activity is fishing, the company has recently established a processing plant in Porto Palo di Capo Passero (Southern Sicily). The processing plant enables the company to process the fish on a daily basis and closer to the source, which increases the quality and the value of the product. Although the plant has been active only for about one year, the objective for the future is to further pursue the integration process into the marketing and retailing segments (Testa, 2018). Testa has its own brand 'Testa Conserve'.

Together with Azzurra Pesca (see section 14.3.2), Pescatori San Pietro Apostolo (see section 14.3.4) and Pescatori La Tonnara Societa' Cooperativa (see section 14.3.6) the company is one of the owners of the Consorzio Marenostrum Tuna.

Figure 66 shows the company structure of Testa Giuseppe.

Figure 66: Testa Giuseppe company structure

Source: Orbis (2018, April), "Current shareholders: Testa Giuseppe E.C.S.R.L.", viewed in April 2018; Orbis (2018, April), "Current subsidiaries: Testa Giuseppe E.C.S.R.L.", viewed in April 2018.

Similar to Azzurra Pesca (see section 14.3.2), Testa Giuseppe has engaged in limited horizontal integration. However, it has concentrated its quotas onto one vessel. With the establishment of its processing plant and marketing its own brand of fish products - Testa Conserve – it has engaged in vertical integration.

14.3.4. Pescatori San Pietro Apostolo

Pescatori San Pietro Apostolo has 35 shareholders, and a subsidiary, the Consorzio Marenostrum Tuna, which it jointly owns with Testa Giuseppe, Azzurra Pesca and Pescatori La Tonnara Societa' Cooperativa. The company owns two vessels, San Pietro Uno and Sparviero Uno. Table 50 gives an overview of all the shareholders and the percentage of their ownership.

Table 50: Pescatori San Pietro Apostolo shareholders

Shareholder	Ownership in %
Alfonso Pappalardo	6.25
Francesco Galano	6.25
Giuseppe Autuori	6.25
Giuseppe Capozzi	6.25
Antonio Salvatore Ferrigno	5.00
Giovanni Ferrigno	5.00
Vincenzo Ferrigno	5.00
Domenico Sperandeo	4.64
Francesco Sperandeo	4.64
Luigi Sperandeo	4.64
Nicola Sperandeo	4.64
Luciano Forcellino	3.13
Antonella Forcellino	3.13

Shareholder	Ownership in %
Vincenzo Pappalardo	2.50
Francesco Forcellino	2.08
Giuseppe Autuori	2.08
Carmela Autuori	2.08
Luigia Pappalardo	2.08
Martina Pappalardo	2.08
Raffaella Forcellino	2.08
Rosa Autuori	2.08
Teresa Diana	2.08
Vincenza Autuori	2.08
Cecilia Scannapieco	1.67
Stefano Vitolo	1.55
Fortunata Vitolo	1.55
Mariangela Vitolo	1.55
Salvatore Pappalardo	1.11
Rosanna Pappalardo	1.11
Sofia Pappalardo	1.11
Ferdinando Forcellino	0.89
Maria Elisabetta Sperandeo	0.89
Mario Pietro Pappalardo	0.83
Salvatore Pappalardo	0.83
Rita Sofia Pappalardo	0.83

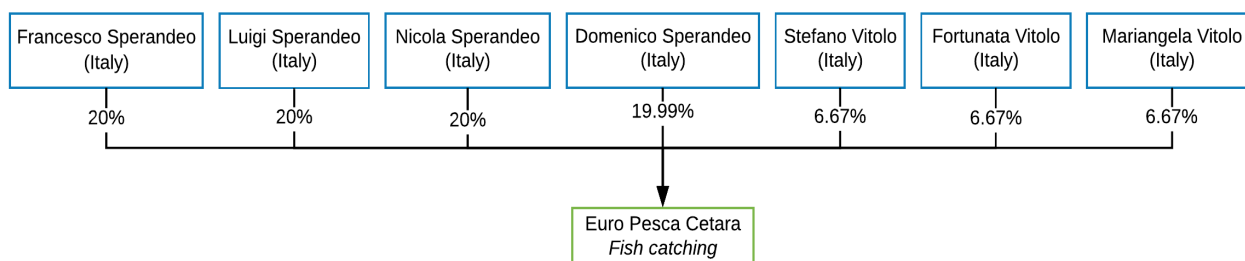
Source: Orbis (2018, April), "Current shareholders: Pescatori San Pietro Apostolo", viewed in April 2018.

The ownership of two vessels points to limited horizontal integration. No signs of structural or informal vertical integration have been identified for the company.

14.3.5. Euro Pesca Cetara

Euro Pesca Cetara is a medium-sized company owned by seven shareholders. These seven shareholders are also shareholders of Pescatori San Pietro Apostolo. The company owns one ship, called Angela Madre.

Figure 67: Euro Pesca Cetara company structure



Source: Orbis (2018, April), "Current shareholders: Euro Pesca Cetara", viewed in April 2018.

The company structure does not show signs of structural or informal horizontal or vertical integration.

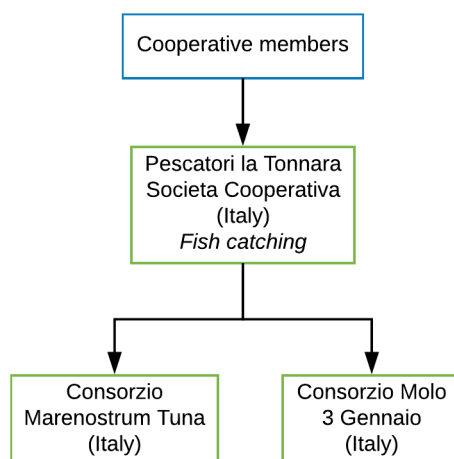
14.3.6. Pescatori La Tonnara Societa' Cooperativa

The Pescatori La Tonnara Societa' Cooperativa is a cooperative of fishers based in Cetara. Giovanni Aniello Ferrigno, president of the cooperative, says that around 70% of the Italian

fishing fleet for Bluefin tuna is concentrated between Cetara and Salerno (Campania, Tyrrhenian coast). The history of the company reflects the developments in the Bluefin tuna fishing sector. In 2000, La Tonnara had three active vessels involved in Bluefin tuna fishing, in 2009, all the quota was allocated to one vessel, the Vergine del Rosario (to meet the 130 tonnes criterium). In 2018, a second vessel received quota for Bluefin tuna fishing. This is another of the three original vessels. The third vessel was scrapped.

Pescatori La Tonnara Societa' Cooperativa is, like Testa Giuseppe, Azzurra Pesca and Pescatori San Pietro Apostolo, owner of the Consorzio Marenostrum Tuna.

Figure 68: Pescatori La Tonnara Societa' Cooperativa company structure



Source: Orbis (2018, April), "Current shareholders: Pescatori La Tonnara Societa' Cooperativa", viewed in April 2018; Orbis (2018, April), "Current subsidiaries: Pescatori La Tonnara Societa' Cooperativa", viewed in April 2018.

The establishment of the 130 tonnes criterium (minimum capacity of a vessel) was the main driver of integration. La Tonnara has joined its quotas with that of the other members of the Consorzio degli Operatori del Tonno (Ferrigno, 2018). The catch of each vessel is divided between the members of the Consorzio according to their respective shares (Ferrigno, 2018).

14.4. Integration

Levels of horizontal and vertical integration in Italy vary based on geography and targeted species (Basciano, 2018; Giachetta, 2018). The highest degree of integration has taken place in two segments: the tuna segment and the red and violet prawn segment (Basciano, 2018). There is also some integration for pelagic fishing in the Northern and Mid regions of the Adriatic (ibid.). Offtake guarantees, access to large foreign markets (e.g. the Japanese market for Tuna), and quota increases have also been drivers for integration in the Italian seafood industry (Basciano, 2018; Giachetta, 2018).

Since the quota system was introduced for Bluefin tuna in the 2000s, this sector has seen a major organizational shift (Basciano, 2018). Since the Ministry of Agricultural, Food and Forestry Policies has consistently distributed the biggest share of the Italian quota to seine fishing, companies have invested in this technique, which is quite costly (ibid.). This has led towards the decrease of small-sized enterprises in favour of medium-sized ones (ibid.). This decrease was further driven by the decrease in overall TAC levels, which had led to a decrease in the fishing fleet (Giachetta, 2018). Horizontal integration in the tuna segment increased particularly between 2009 and 2011, with the adoption of conservation measures at both the European and the domestic level, and the reduced fleet size (Ferrigno, 2018; Bello, 2018). The establishment of the 130 tonnes minimum capacity criteria for seine fishing vessels was an important driver of consolidation (Ministerial Decree of 28 May, 2010). Operators with

quotas on multiple vessels concentrated their quotas on a single vessel. Other operators tried to reach the 130 tonnes threshold by collaborating and joining their respective quotas together, e.g. within the Consorzio (Ferrigno, 2018). It is noteworthy that Italian companies have not tried to get access to larger quotas for Bluefin tuna by investing in other Mediterranean countries (Bello, 2018).

According to members of the Consorzio the joining of quotas is considered to be quite effective and successful (Ferrigno, 2018). It offers a further incentive towards the establishment particularly of non-structural forms of horizontal organization (ibid.). There is competition between the different groups (ibid.). However, there is also strong sense of solidarity among the various operators involved in the seine fishing segment (ibid.). Ferrigno - President of Pescatori La Tonnara - states that this sense of solidarity was the result of the TAC decreases for Italy in the 2009 to 2011 period (ibid.).

Other forms of horizontal integration in Italy are more limited. There is little integration in terms of quota transfers (Giachetta, 2018). In Italy it is only possible to buy or sell quotas distributed among producers using a specific technique (e.g. between purse seine fishing segment or longline fishing segment) (ibid.). Fishermen could theoretically sell or lease quotas to one another within the same PO, given that they are all involved in fishing with the same gear, e.g. seine fishing, but this does not happen in practice (ibid.). Moreover, there is also no quota buying or selling at the international level (ibid.).

Horizontal integration, as it has largely been driven by reduction in TACs and the consequent reduction in fleet size, has significant socio-economic impact. Livelihoods level are extremely low, and the sector is in sharp decline (Amoroso, 2018). Many producers had not yet recovered the costs of their recent investments in the sector when the catch restriction measures were introduced in 2009 to 2011 (Testa, 2018). Many people lost their jobs (Ferrigno, 2018). In 2009, the scrapping policy did not spare very new vessels, which could not reach the 130 tonnes threshold (ibid.). This was a loss in value for the sector (ibid.).

The contraction in the quota has allowed stocks to replenish (Ferrigno, 2018). Between 2009 and 2018 there has been a strong increase in the number of brood stock fishes, as well as juveniles (ibid.). The reduction of catch has also led to a price increase (ibid.). While in 2005/06 the price was around € 3 to € 3.50 per kilo, today it has reached an average of € 10 per kilo (ibid.).

Vertical integration in the Bluefin tuna sector features an important regional dimension. Industrial fishery (seine fishing) is particularly widespread in Campania (South Tyrrhenian coast), whereas semi-industrial fishery (longline) is predominant in Sicily (Basciano, 2018). Nevertheless, there is very little vertical integration at the domestic level (Ferrigno, 2018). Indeed, contrary to what happened for horizontal integration, the 2009 to 2011 contraction has weakened early forms of vertical integration that existed at the national level prior to 2010 (ibid.). Currently the quotas are only enough to meet the demands of the Japanese market (ibid.). As such, there are few incentives towards devoting part of the catch to processing activities and to further vertical integration in Italy (ibid.).

Offtake arrangements – a form of non-structural vertical integration – play an important role in the Italian seafood value chain given the low level of development of the fish processing segment (Misuraca, 2018). Offtake agreements between fishing companies and traders tend to ensure a certain degree of stability for the few operators who are still active on the market (Misuraca, 2018). Offtake agreements for the small pelagic species segment and the Bluefin tuna segment are different (Giachetta, 2018). The former provide access to retailers in their final markets - Spanish and French retailers – while the latter provide access to intermediaries – Maltese and Spanish buyers – who then sell to the Japanese market (Bello, 2018; Ferrigno, 2018; Giachetta, 2018).

Offtake agreements are often considered the only solution for certain companies to remain in the business (Misuraca, 2018). Costs can only be covered through the anticipated payments of traders (ibid.). Most of the landings of deep-water rose shrimp are exported to Spain (ibid.). The strong reliance on this market, coupled with the fragmentation of Italian producers, has increased the leverage that Spanish buyers have on prices (Misuraca, 2018).

There is a strong regional difference in offtake arrangements (Giachetta, 2018). Fishing with trawl-pelagic nets is allowed in the Adriatic Sea, but it is forbidden in the Tyrrhenian Sea (ibid.). As a result, while producers in the Adriatic Sea are able to ensure a stable supply, this is not the case for producers in the Tyrrhenian Sea (ibid.). This, in turn, explains why there are offtake agreements in the Adriatic Sea (ibid.). Regulatory differences in the different regions in Italy thus help or hamper vertical integration (ibid.).

According to Amoroso – president of Organizzazione di Produttori della Pesca di Trapani – EU regulations in particular have proved too restrictive and have kept changing too quickly to allow small and medium sized companies to adapt their business plans and expectations to the evolving business environment (Amoroso, 2018). Moreover, the lack of a clear legislation on wholesale trade has discouraged the expansion of activities to other segments of the production chain (ibid.). It does not make sense to invest in establishing processing plants or platforms if operators do not converge towards a common wholesale market (ibid.). Additionally, the proliferation of POs – for example, in the Trapani area there are two POs working in the same fishery segment – has hampered the capacity to facilitate integration across the production chain (ibid.). Dilello – President of Cooperativa fra Pescatori "LA SIRENA" – states that other relevant factors limiting structural vertical and horizontal integration include a fragmented and biased domestic regulatory framework, excessively restrictive and insufficiently supporting EU policies, a low degree of market organization and a weak role defined for and played by POs (Dilello, 2018). Misuraca – business consultant of Medipesca – says that historically speaking, contrary to other EU countries such as Spain, Italy has failed to develop a coherent and comprehensive vision of fishery as an economic sector (Misuraca, 2018). State authorities have tended to shift competences to regional authorities (ibid.). This has produced fragmentation in terms of both regulation and market dynamics (ibid.).

Dilello argues that the lack of integration is due to the strategic mistake on the part of the EU, which made vessel scrapping its main policy objective and financial target in the form of subsidies for vessel scrapping (ibid.). He states that the sector has suffered from a serious contraction across the entire value chain (ibid.). Moreover, POs have not received funding for over two years now, impairing their ability to foster integration (ibid.).

Amoroso states that according to a recently conducted study, considering the costs that they have to support, even vessels involved in Bluefin tuna fishing have zero margins of profits (Amoroso, 2018). The quota system is too restrictive and too poorly managed to allow any income gains even in a sector potentially as profitable as that of Bluefin tuna (ibid.).

15. LATVIA

KEY FINDINGS

- **Fleet size reduced** upon **entering** the **EU**, increased unemployment
- Approximately **40% of enterprises** own **more than one vessel**
- **Vertical integration** particularly in **canned and smoked sprat** segment
- **Producer organizations** play role in **vertical integration**
- **Significant** domestic **value adding** through **processing**

15.1. Composition of the Latvian seafood sector

Latvian fishing companies generated € 20 million in landings income in 2015 (Table 51). The processing segment generated an additional € 153 million the following year. Processing production constituted 0.6% of Latvia's GDP in 2016.

Latvia had a slight trade surplus in fish and fish products of approximately € 10 million in 2016. Latvia sourced approximately 82% of its € 170 million fish and fish products imports from other EU countries. 24% of its fish imports came from Sweden, followed by Lithuania (17%) and Denmark (10%).

Latvia exported € 179 million of fish and fish products in 2016. Its main export destinations were neighbouring countries Lithuania (20%), Denmark (15%) and Estonia (15%). In total, 86% of Latvia's fish exports were destined for EU Member States.

There were 332 registered fishing vessels in Latvia in 2016, of which 80% were active. These belonged to 140 enterprises. Approximately 40% of all fishing enterprises operated more than one vessel, indicating a level of horizontal structural integration.

In 2015, there were approximately 345 people employed in the fish catching segment. The processing segment, on the other hand, had more than ten times as many employees – 3,588. As noted above, this is partly reflected in the significant value adding of the processing segment.

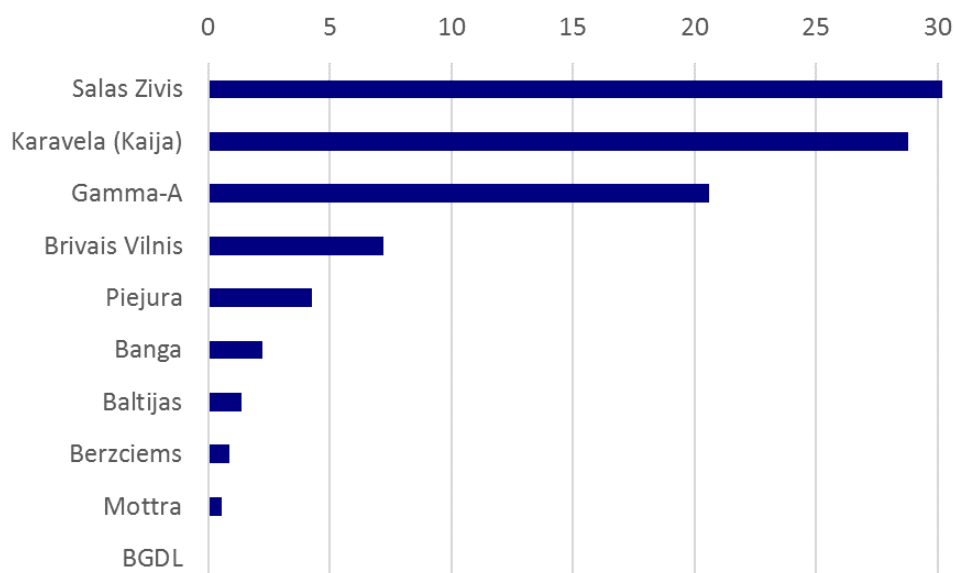
Table 51: Latvian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	332	
	Active vessels (2016)	265	80%
	Average vessel tonnage per vessel (2015, GT)	24	
	Average vessel tonnage per enterprise (2015, GT)	52	
<i>Enterprises</i>	Number of fishing enterprises (2015)	140	
	Enterprises with more than one vessel (2015, number, % enterprises)	58	41.4%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	20	0.08%
	Average landing income per fte employed (2015, €)	57,322	
	Average landing income per vessel (2015, €)	64,000	
	Average landing income per enterprise (2015, €)	141,258	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	345	0.04%

Segment	Measure	Value	Proportion
	Average employment per vessel (2015, fte)	1.1	
	Average employment per enterprise (2015, fte)	2.5	
Processing	Processing production (2016, € mln, % GDP)	153	0.61%
	Employment in the fish processing sector (2015, fte, % workforce)	3,588	0.41%
	Average processing production per fte employed (2015, €)	42,698	
Trade	Trade balance (2016, € mln, % GDP)	10	0.04%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	179	0.72%
	1. Lithuania (2016, € mln, % export)	37	20%
	2. Denmark (2016, € mln, % export)	27	15%
	3. Estonia (2016, € mln, % export)	27	15%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	170	0.68%
	1. Sweden (2016, € mln, % import)	40	24%
	2. Lithuania (2016, € mln, % import)	29	17%
	3. Denmark (2016, € mln, % import)	18	10%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Major brands in Latvia include Salas Zivis, Karavela and Gamma-A (see Figure 69). The Abba brand of Norwegian company Orkla is also marketed in Latvia. Karavela also owns the Arnold Sorenson brand, and produces for private labels. It partners with the Princes brand from the United Kingdom, and Danish Salling Group's Dansk Supermarked, Denmark's largest retailer with banners Netto, Bilka and Salling (Karavela, 2015). 15% of its products are exported to Sweden, 13% to Denmark and 12% to Russia (ibid.).

Figure 69: Latvia fish product brand turnovers (2017, € mln)

Source: Food Products in Latvia (n.d.), "Fish & Seafood", online: http://www.foodlatvia.com/product/index?Search%5Bcategory_id%5D=63&sort=companyTitle&page=5, viewed in September 2018; Food Products in Latvia (n.d.), "Salas Zivis", online: <http://www.foodlatvia.com/producer/salas-zivis>, viewed in September 2018; Food Products in Latvia (n.d.), "Karavela (Kaija)", online: <http://www.foodlatvia.com/producer/karavela>, viewed in September 2018; Food Products in Latvia (n.d.), "Gamma-A", online: <http://www.foodlatvia.com/producer/gammaa>, viewed in September 2018; Food Products in Latvia (n.d.), "Brivais Vilnis", online: <http://www.foodlatvia.com/producer/brivais-vilnis>, viewed in September 2018; Food Products in Latvia (n.d.), "Piejura", online: <http://www.foodlatvia.com/producer/piejura>, viewed in September 2018; Food Products in Latvia (n.d.), "Banga", online: <http://www.foodlatvia.com/producer/banga-ltd>, viewed in September 2018; Food Products in Latvia (n.d.), "Baltijas", online: <http://www.foodlatvia.com/producer/baltijas-zivis97-44103013194>, viewed in September 2018; Food Products in Latvia (n.d.), "Mottra", online: <http://www.foodlatvia.com/producer/mottra>, viewed in September 2018; Food Products in Latvia (n.d.), "Berzciems", online: <http://www.foodlatvia.com/producer/berzciems>, viewed in September 2018; Food Products in Latvia (n.d.), "B.G.D.L.", online: <http://www.foodlatvia.com/producer/berzciems>, viewed in September 2018.

15.2. Producer organisations

There are four recognized producer organizations in Latvia. Three of them primarily represent the pelagic segment, and one primarily the demersal segment (see Table 52). Due to lack of data availability, the number of vessels and members is not provided.

Table 52: Latvia: Recognized producer organisations

Producer organization	Segment
Nacionālās Zvejniecības Ražotāju Organizācija	Pelagic
Latvijas Zvejas Produktu Ražotāju Grupa	Pelagic
Kurzemes Zvejniecības Ražotāju Organizācija	Pelagic
Salacgrīvas Zvejas Produktu Ražotāju Organizācija	Demersal

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission, p. 12.

15.3. Company analysis

The company analysis below is based on three sets of companies. The first set includes fishing companies with licenses for offshore fishery in the Atlantic Ocean. The most recent available list with company names was from 2013. The two companies with the highest combined

engine power were selected – Baltic Marine Fishing Company and Baltreids (Ministry of Agriculture of the Republic of Latvia et al, 2013).

The second set includes fishing companies with licenses for offshore fishery in the Baltic Sea and the Gulf of Riga. Again, the most recent available list with company names was from 2013. Also, here the two companies with the highest combined engine power were selected – BraDava and Grifs (ibid.).

Finally, the third set includes industrial fishing vessels in the Baltic Sea and in the coastal waters of the Gulf of Riga in 2017. In this instance, the two companies with the largest combined gross tonnage were selected – Leste and Ramas (Ministry of Agriculture of the Republic of Latvia, 2016).

15.3.1. Atlantic fisheries

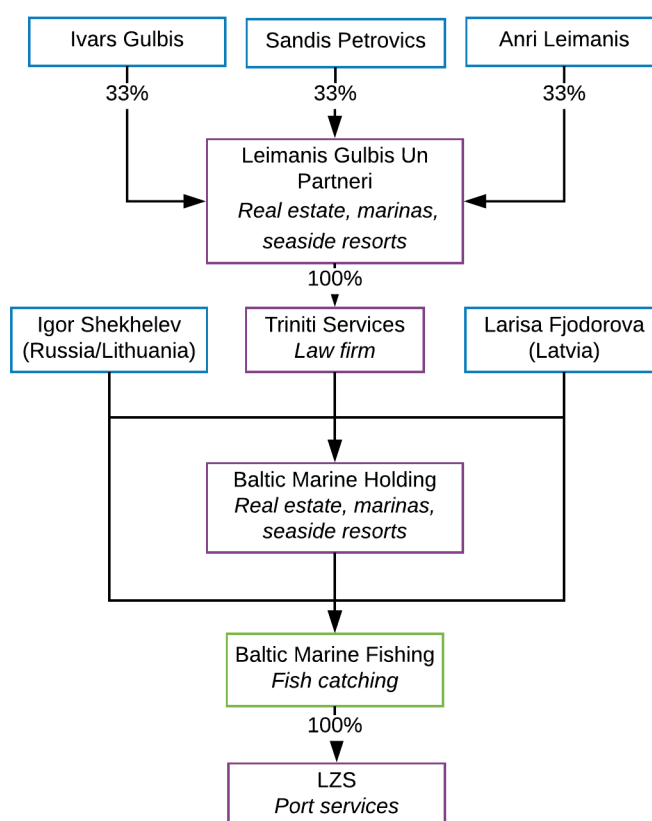
15.3.1.1. Baltic Marine Fishing Company

In 1997, Baltic Marine Fishing Company was established when Latvian fishing company Rigas Zvejnieciba was privatized (Baltic Marine Fishing Company, 2018a). At the time the company had a fleet of 30 fishing and transport vessels (ibid.). The company has a history of fishing in the Atlantic Ocean from the Arctic to the Antarctic (ibid.). It currently has a license to engage in commercial fishing in territorial and international waters, but not in the Baltic Sea (ibid.). Baltic Marine Fishing Company fishes both of its own initiative and on the basis of contracts signed with fishing agencies and fishing companies in the EU (ibid.). The company supplies customers in the Commonwealth of Independent States, Europe and West Africa (ibid.).

Figure 70 shows the company structure of Baltic Marine Fishing Company. Baltic Marine Fishing Company's subsidiary LZS provides port services at the fishing port of Ventspils (Baltic Marine Fishing Company, 2018b). The port is used by Latvian, Lithuanian and Estonian fishing companies (ibid.). It is currently one of the largest fishing ports in Latvia (ibid.).

No consolidated financial statements for the Baltic Marine Holding company could be identified. Consolidated financial statements are not available for Baltic Marine Holding. The company generated a turnover of approximately € 6,600 in 2017, while owning total assets worth € 4.4 million (Orbis, 2018i). In 2016, the holding company generated approximately € 5,500 in revenue, with assets worth € 3.6 million (ibid.). It had only one employee in 2017, indicating its role as a holding company (ibid.).

Fishing subsidiary Baltic Marine Fishing Company generated revenues of € 37,800 in 2016, down from € 268,000 the year before (Orbis, 2018j). In 2016, Baltic Marine Fishing Company held assets worth approximately € 2.1 million, up from € 1.6 million in 2015 (ibid.).

Figure 70: Baltic Marine Fishing company structure

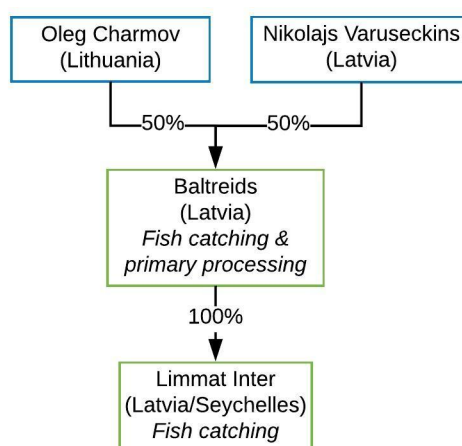
Source: Orbis (2018, February), "Current shareholders: Baltic Marine Fishing Company", viewed in February 2018; Orbis (2018, February), "Contact report for Larisa Fjodorova", viewed in February 2018; Orbis (2018, February), "Contact report for Igor Shekhelev", viewed in February 2018; Baltic Marine Fishing Company (2018, May), "Home", online: <http://bmfc.lv/en>, viewed in May 2018; Orbis (2018, June), "Current shareholders: Baltic Marine Fishing Holding", viewed in June 2018; Orbis (2018, June), "Current shareholders: Triniti Services", viewed in June 2018; Orbis (2018, June), "Current shareholders: Leimanis Gulbis Un Partneri", viewed in June 2018.

Judging from the company structure and the descriptions above, it does not seem that Baltic Marine Fishing has engaged in structural vertical or horizontal integration in the fishing or fish processing segments. It does have activities in port services. Both Baltic Marine Holding and Leimanis Gulbis Un Partneri have investments in real estate, marinas and seaside resorts. None of these are directly related to the seafood industry.

15.3.1.2. Baltreids

Baltreids is a Latvian fishing company established in 1998 (Baltreids, n.d.). It is engaged in fishing in Baltic, and as of 2002 also in the Atlantic waters off the coast of Africa with its large freezer trawlers (ibid.). The company has three vessels that it directly manages, and a further three vessels managed by its wholly-owned subsidiary Limmat Inter (Orbis, 2017a). Limmat Inter appears to be registered in the Seychelles (Orbis, 2018bg) (Figure 71).

In 2016, Baltreids had 27 employees (Orbis, 2018bh). In the same year it generated revenues of approximately € 19 million, € 10 million more than in 2015 (ibid.). In 2016, Baltreids had total assets worth approximately € 14 million (ibid.). This was similarly an increase of around € 10 million from € 3.9 million in 2015 (ibid.).

Figure 71: Baltreids company structure

Source: Orbis (2017, December), "Beneficial owners: Baltreids SIA", viewed in February 2018; Orbis (2017, December), "Current subsidiaries: Baltreids SIA", viewed in February 2018; Baltreids (n.d.), "About the company", online: <http://www.baltreids.lv/en/about-company/>, viewed in March 2018; Latvian Business Registry (2018, March), *Business Registry Extract*.

Shareholder Nikolajs Varušečkins is also the ultimate owner of freight transport company Kenguru SIA (Orbis, 2018b). Although it could not be confirmed, it is possible that Kenguru could also be used by Baltreids.

From the company structure of Baltreids it is evident that there is structural vertical and horizontal integration. Vertical integration as the company is engaged in both fish catching and primary processing. Horizontal integration due to its fleet of six vessels. Baltreids is engaged in fish catching in both the Baltic Sea and in the Atlantic waters off the coast of Africa. It does not seem to be active in other EU Member States.

15.3.2. Offshore fishery Baltic Sea and Gulf of Riga

15.3.2.1. BraDava

BraDava is a fully-integrated Latvian seafood company. The company was established in 1995 with two fishing vessels, the "Bravo" and the "Daugava" (BraDava, 2018b). Within three years the fleet had expanded to eight vessels (ibid.). However, management gradually started to modernize the fleet in 2004 by acquiring vessels with a larger capacity (ibid.). By 2010 the fleet had been fully replaced (ibid.). According to the company's own sources it nowadays operates a fleet of three vessels (BraDava, 2018a). These vessels are active in the Baltic Sea targeting primarily sprat, herring and cod through bottom and pelagic trawling. The company, through its fleet, has access to approximately 20% of the Latvian quota. Another source affiliates six vessels to BraDava: four directly under BraDava, one under subsidiary Kursas Jura, and one under the Unda joint venture (Orbis, 2018bj).

Initially the company was only engaged in fish catching, but it gradually expanded into fish processing, cold storage, transportation and ship repairs (BraDava, 2018b, 2018c). BraDava is now no longer dependent on external service providers and is able to meet its own needs from fish catching to delivering the finished product to customers (BraDava, 2018b).

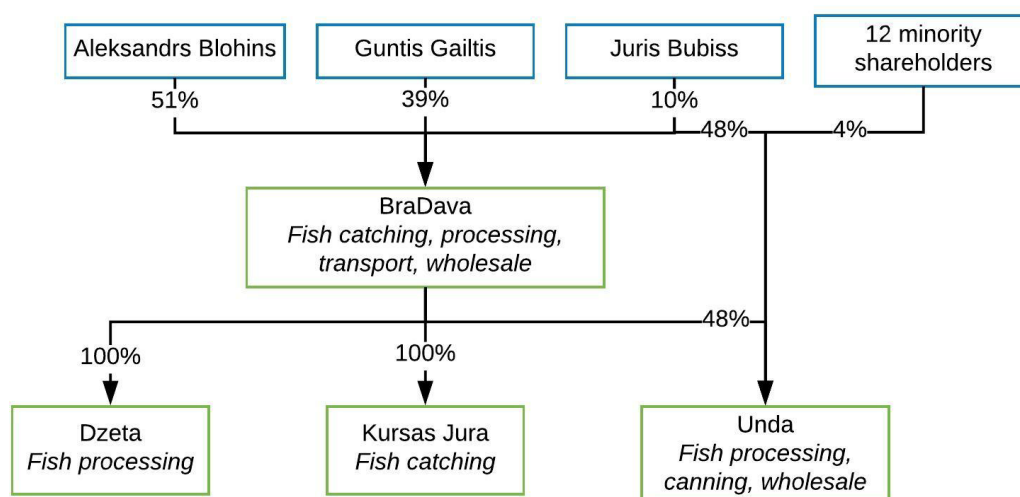
Unda is a joint venture operation between BraDava and shareholder Juris Bubiss. Unda is a canned fish producer (Unda, 2018). Together BraDava and Unda own "... one of the biggest quota in the region for sprats and herring" (ibid.). Unda produces a wide variety of canned

sprat, herring and sardine products sold in the European Union, the United States, Australia, and the Commonwealth of Independent States (ibid.).

In 2016, BraDava employed 110 people within the consolidated group – excluding the Unda joint venture (Orbis, 2018bi). In that year, the company generated approximately € 6.6 million in revenue, down from approximately € 7.5 million in 2015 (ibid.). In 2016, the company had total assets worth € 8.3 million, down from approximately € 10.1 million a year earlier (ibid.).

Unda generated revenues of approximately € 2.6 million in 2016, down from € 6.9 million the year before (Orbis, 2018g). The company owned total asset worth € 1.9 million in 2016, a decrease from € 2.1 million in 2015 (ibid.). In 2016, Unda employed 105 workers in its processing and production facilities (ibid.).

Figure 72: BraDava company structure



Source: Orbis (2018e, February), "Current shareholders: BraDava", viewed in February 2018; Orbis (2018bj, February), "Current subsidiaries: BraDava", viewed in February 2018; Firmas.lv (2018, June), "Dzeta SIA", online: <https://www.firmas.lv/profile/dzeta-sia/41203000269>, viewed in June 2018; Firmas.lv (2018, June), "Kursas Jura SIA", online: <https://www.firmas.lv/profile/kursas-jura-sia/52103061501>, viewed in June 2018.

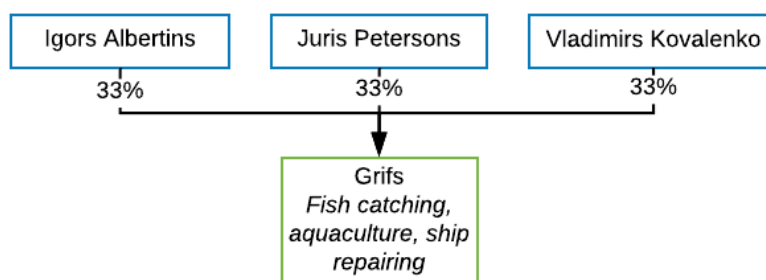
From the above company structure and description, it is clear that BraDava is a fully-integrated seafood company. It has engaged in both structural vertical integration, investing from the upstream fish catching segment in downstream activities including primary processing, cold storage, canned product manufacturing, transportation, and wholesale. The company has also engaged in horizontal integration in the fish catching segment by expanding, and then consolidating its fleet. All processes of integration have so far been limited to Latvia, with no investments in other countries.

15.3.2.2. Grifs

Latvian fishing company Zvejnieku Kompanija "Grifs" was established in 1993 when the collective fish farm Banga was privatized (Grifs, 2018a). Initially it only had one vessel (ibid.). Since then Grifs has expanded the size of its fleet to six vessels (Grifs, 2018a, 2018b). Grifs currently holds 10.8% of the Latvian cod quota in the Baltic Sea, and 9% of the sprat quota (Grifs, 2018a). The company has also been developing its ship repair station capacity (ibid.).

In 2016, Grifs generated a turnover of approximately € 1.7 million, an increase from € 1.3 million in 2015 (Orbis, 2018h). The company held total assets of € 1.8 million in both 2016 and 2015 (ibid.).

Figure 73: Grifs company structure



Source: Orbis (2018, February), "Current shareholders: Grifs", viewed in February 2018; Orbis (2018, February), "Current subsidiaries: Grifs", viewed in February 2018;

The company structure and description of Grifs do not indicate vertical integration. There has, however, been some structural horizontal integration through fleet expansion within Latvia.

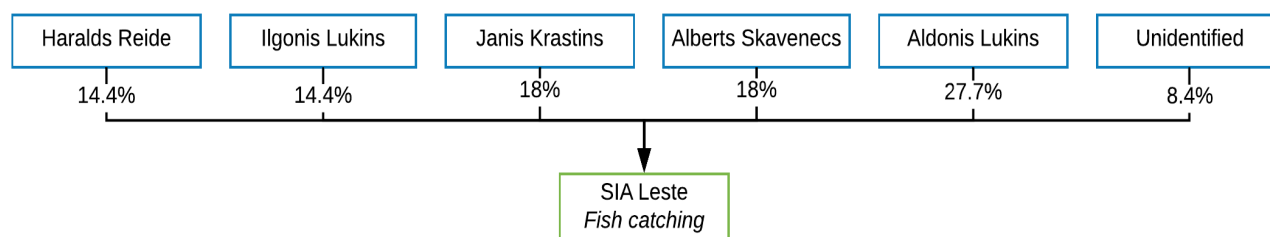
15.3.3. Coastal fishery Baltic Sea and Gulf of Riga

15.3.3.1. Leste

Leste is a Latvian fishing company. Six individual investors are shareholders of the company. In 2016, the company had ten employees (Orbis, 2018I). There are no consolidated accounts available for the company (ibid.). In 2016, the company generated revenues of € 38,100, a decrease from € 63,000 in 2015 (ibid.). In 2016, Leste held total assets worth € 140,000, down from € 173,000 in 2015 (ibid.).

In total, Leste has approximately 14 industrial vessels licensed for fishing in the Baltic Sea and in the coastal waters of the Gulf of Riga in 2017 (Ministry of Agriculture of the Republic of Latvia, 2016). The combined gross tonnage was approximately 24.27GT (ibid.). This shows that the company has a large number of smaller vessels.

Figure 74: Leste company structure



Source: Orbis (2018, February), "Beneficial owners: Leste SIA", viewed in February 2018; Orbis (2018, February), "Company report: Leste", viewed in February 2018.

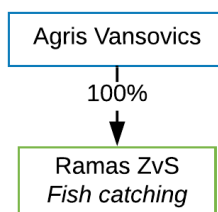
There is a general lack of information regarding Leste. On the basis of this limited information and the identified company structure, no evidence of vertical integration in the company has been identified. However, given the large fleet operating under the company, there seems to be extensive horizontal integration.

15.3.3.2. Rāmas ZvS

Rāmas is a small Latvian fishing company. The only financial data that could be identified dates back to 2010. Financial data is therefore not reported here. Further information could also not be identified.

In total, Ramas has six industrial vessels licensed for fishing in the Baltic Sea and in the coastal waters of the Gulf of Riga in 2017 (Ministry of Agriculture of the Republic of Latvia, 2016). The combined gross tonnage was approximately 24.21GT. This shows that there are a relatively large number of smaller vessels.

Figure 75: Rāmas ZvS company structure



Source: Orbis (2018, February), "Current shareholders: Rāmas", viewed in February 2018.

On the basis of this limited information and the identified company structure, no vertical integration has been identified. However, given the relatively large fleet operating under the company, there seems to be extensive horizontal integration.

15.4. Integration

From the above analysis, it is evident that there is horizontal integration in Latvia, primarily in the Atlantic and offshore Baltic Sea fisheries. More than 40% of fishing companies own more than one vessel. This is mainly in the form of companies buying other companies or vessels that already exist in the sector (Raituma, 2018). There are very few large vessels in Latvia (ibid.). Representative of the producer organization Latvijas Zvejas Produktu Ražotāju Grupa – Sandra Raituma – says that there are only 50 to 60 active large vessels left in Latvia (ibid.). The fleet size decreased when Latvia entered the EU, as there were too many vessels for the quota (ibid.). Many vessels were sold or decommissioned (ibid.). Since then, not many new vessels entered the fleet (ibid.). There was an increase in unemployment at the time, however, an EU funded program helped fishermen to find other jobs (ibid.). Currently, the driver of horizontal integration is access to quotas (ibid.).

Informal horizontal integration driven by access to quota is quite common (Raituma, 2018). This is mainly in the form of quota swaps of different species (ibid.). There is no public information on quota swaps, however, agreements must be sent through the relevant ministry to make them official (ibid.). Quota leasing also occurs; however, it is not very common (ibid.).

The above description has shown that a small number of companies have also engaged in vertical integration. Raituma reports that mainly companies that produced canned or smoked sprat have engaged in vertical integration (Raituma, 2018). She refers to companies such as Kolumbia, Grif 93 and Gamma. Gamma also markets the Gamma-A brand (see section 15.1). Both Kolumbia and Gamma no longer own their own vessels. However, they purchase directly from the PO (ibid.).

The POs all play a role in vertical integration as they have processing facilities (Raituma, 2018). These are used to process most, but not all, the catch harvested by its members (ibid.). The PO is also responsible for sale (ibid.). Since the closure of the Russian market, companies have reduced production, others are exploring new markets (ibid.).

16. LITHUANIA

KEY FINDINGS

- **More than 40%** of fishing **enterprises** own **more than one vessel**
- **Significant horizontal** integration
- **Lithuanian** fishing **companies part** of larger **international groups**
- **International vertical integration**

16.1. Composition of the Lithuanian seafood sector

In 2015, Lithuanian fishing companies generated € 58 million in landings income. Fish processing companies generated € 464 million in production revenues in 2016.

Lithuania had a trade surplus of € 46 million in fish products in 2016. The country exported € 531 million in fish products and imported products with a value of € 485 million. 71% of Lithuania's fish imports originated from the EU. Its main import partners were Sweden (44%), Germany (10%), and Norway (10%).

96% of Lithuania's fish exports in 2016 were destined to other EU countries. The main export destinations for Lithuanian fish products were Germany (36%), Italy (13%) and Belgium (12%).

There were 154 registered commercial fishing companies in Lithuania in 2016. These were owned by 69 enterprises. 29 enterprises (42%) owned more than one vessel. The average gross tonnage per vessel was 355 GT or 777 GT per enterprise. This high average is due to several larger pelagic freezer trawlers registered in Lithuania.

The fishing segment in Lithuania employed 463 fte in 2015. The fish processing segment employs a far larger workforce, 5,240 employees.

Table 53: Lithuanian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	154	
	Average vessel tonnage per vessel (2015, GT)	355	
	Average vessel tonnage per enterprise (2015, GT)	777	
<i>Enterprises</i>	Number of fishing enterprises (2015)	69	
	Enterprises with more than one vessel (2015, number, % enterprises)	29	42.0%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	58	0.16%
	Average landing income per fte employed (2015, €)	126,265	
	Average landing income per vessel (2015, €)	386,880	
	Average landing income per enterprise (2015, €)	846,650	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	463	0.04%
	Average employment per vessel (2015, fte)	3.1	
	Average employment per enterprise (2015, fte)	6.7	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	464	1.20%
	Employment in the fish processing sector (2015, fte, % workforce)	5,240	0.40%
	Average processing production per fte employed (2015, €)	88,511	
Trade	Trade balance (2016, € mln, % GDP)	46	0.12%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	531	1.37%
	1. Germany (2016, € mln, % export)	192	36%
	2. Italy (2016, € mln, % export)	67	13%
	3. Belgium (2016, € mln, % export)	65	12%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	485	1.25%
	1. Sweden (2016, € mln, % import)	216	44%
	2. Germany (2016, € mln, % import)	47	10%
	3. Norway (2016, € mln, % import)	47	10%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

A number of brands are marketed in Lithuania. The Abba brand of Norwegian company Orkla is relatively new to the Lithuanian market (Orkla Lithuania, n.d.). It markets various seafood products (ibid.). Viciunai Group, which markets the Viči, Esva, Columbus brands in Lithuania and Europe, is also an important brand owner (Viciunai Group, n.d.). It is mainly engaged in surimi production (ibid.). Finally, South African Bidvest markets the leading Lithuanian frozen fish brand Nowaco (Nowaco, n.d.).

16.2. Producer organisations

There are three recognized producer organizations in Lithuania. All represent a diverse group of fishermen and fishing companies. The largest is Žuvininkystės įmonių asociacija Lampetra (see Table 54). Due to lack of data availability, the number of vessels is not provided.

Table 54: Lithuania: Recognized producer organisations

Producer organization	Segment	No. of members
Lietuvos žuvininkystės produktų gamintojų asociacija	Demersal, local small-scale, and other	
Nacionalinė akvakultūros ir žuvų produktų gamintojų asociacija	Demersal, local small-scale, aquaculture, and other	17
Žuvininkystės įmonių asociacija Lampetra	Demersal, local small-scale, and other	43

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission, p. 12; Nacionalinė akvakultūros ir žuvų produktų gamintojų asociacija (2018, July), "Home", online: <http://www.akvakultura.lt/en/>, viewed in July 2018; Žuvininkystės įmonių asociacija Lampetra (2018, July), "About the association", online: <http://www.lampetra.lt/apie-asociacija/>, viewed in July 2018.

16.3. Company analysis

Table 55 lists the largest fishing companies incorporated in Lithuania on the basis of gross tonnage and number of vessels. The figures are from 2011, more recent Lithuanian fisheries reports do not provide company level details. Therefore, it is likely that these figures are not an accurate reflection of the current state of these companies. The purpose of this list is to identify companies whose company structures are analysed in the sections below. The companies Baltlanta, Atlantic High Sea Fishing and Banginis were mentioned as three of the biggest fishing companies in Lithuania today, by two Lithuanian fisheries experts (Lithuanian Fisheries Expert 1, 2018; Lithuanian Fisheries Expert 2, 2018).

Table 55: Lithuania: Largest fishing companies by gross tonnage (2011)

Company	Total gross tonnage (GT)	No. of vessels
Batlanta	25,390	9
Atlantic High Sea Fishing Company	11,442	2
Norgertus	1,103	1
Banginis	1,046	3
Seivalas	716	1
Anuva	436	1
Grinvita	235	2
Senoji Baltija	235	2

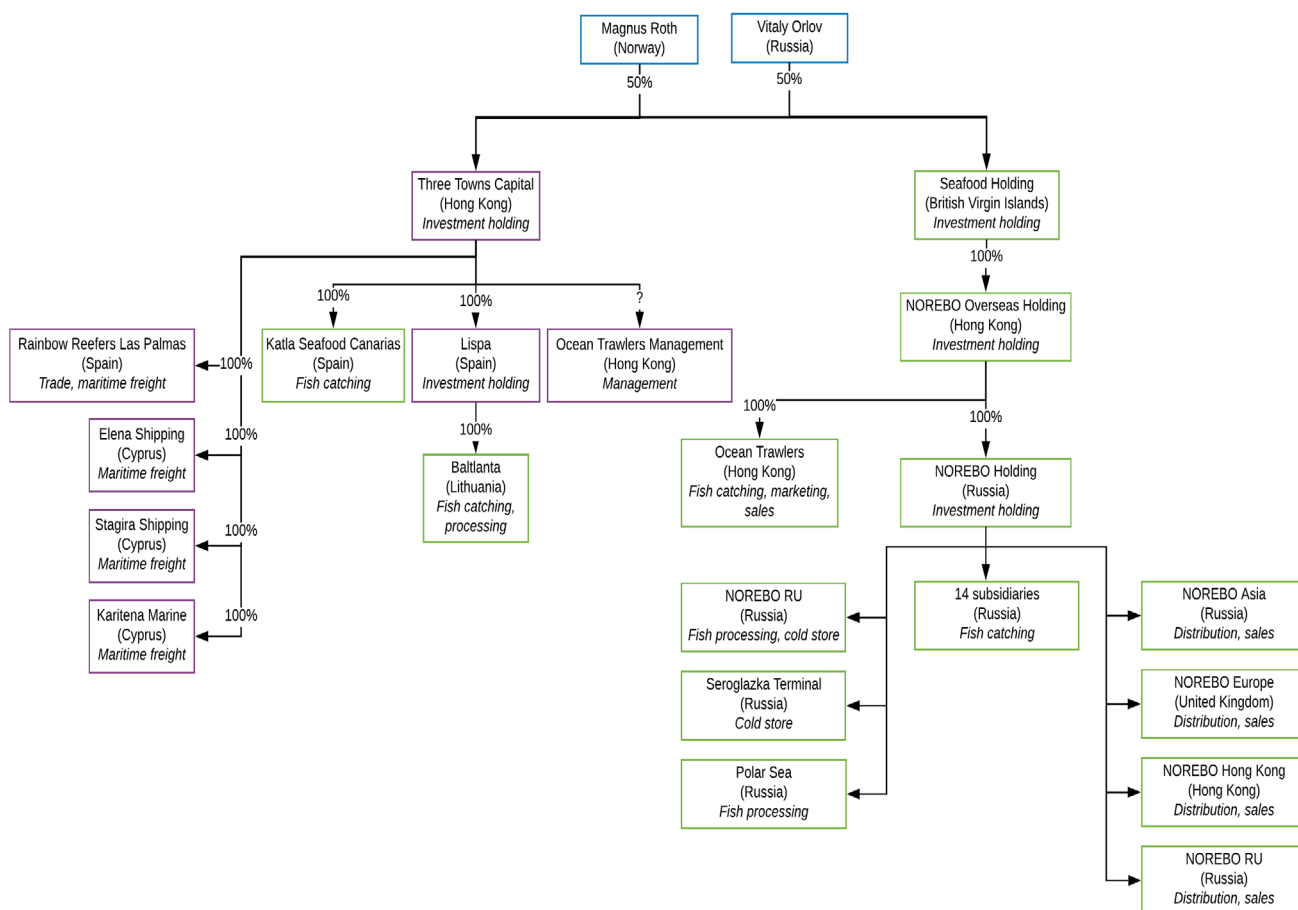
Source: Vaitkevičius, S., Krušinskas, R. and O. Eičaitė (2011, October), *Capital Values, Investment and Capital Costs, Fishing Sector Setting*, Vilnius: Lietuvos Agrarinės Ekonomikos Institutas, p. 50-60.

16.3.1. Baltlanta

Batlanta is a Lithuanian fishing company established in 1996 (Batlanta, 2018a). It is focused on fish catching and processing in the Baltic Sea and the Atlantic Oceans (EMIS, 2018). Its processed fish and fishmeal are mainly distributed to Eastern European countries and Commonwealth of Independent States (ibid.). Its main fishing grounds are Morocco and Mauritania (Batlanta, 2018a). Fish caught off the coast of Africa is sold in West African countries (ibid.). Baltlanta's main products from the Atlantic Ocean are mackerel and sardines (Batlanta, 2018b). It is the largest fishing company in Lithuania by gross tonnage and number of vessels (Vaitkevičius et al, 2011).

In 2014, Baltlanta was sold by two Panamanian registered companies to Spanish Lispa Holding (Batlanta, 2018b). As Figure 76 shows, Lispa is a subsidiary of Three Towns Capital, owned by Swedish Magnus Roth and Russian Vitaly Orlov. These two investors are also the ultimate owners of the large fully-integrated Russian fishing group NOREBO. NOREBO's brands include: Glacialis, Ocean Spirit and Borealis (Glacialis, 2018; Ocean Spirit, 2018; Borealis, 2018).

There is no consolidated financial information available for both Three Towns Capital and Lispa. However, there is financial information available for Baltlanta at the company level from 2015 and before. In 2015, the company generated revenues of € 46 million, down from approximately € 71 million in 2014 (Orbis, 2018m). Baltlanta had total assets worth approximately € 73 million in 2015, down € 11 million from € 84 million in 2014 (ibid.). Apparently there has been a significant decrease in employees working for Baltlanta, from 255 in 2014 to 136 in 2015 and 96 employees in 2016 (ibid.).

Figure 76: Baltlanta company structure

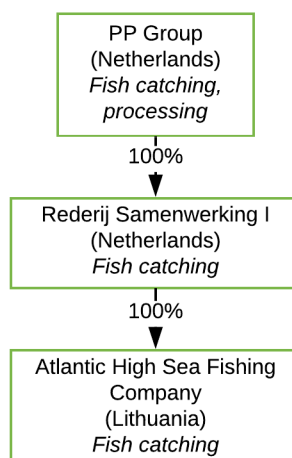
Source: BNS Business Weekly (2016, July 25), "Lithuania: Baltlanta hopes to continue operations", *BNS Business Weekly*; NOREBO (2018, June), "Our companies: Trade", online: <https://norebo.ru/en/our-companies/>, viewed in June 2018; NOREBO (2018, June), "Our companies: Harvesting and shipping", online: <https://norebo.ru/en/our-companies/>, viewed in June 2018; NOREBO (2018, June), "Our companies: Fish processing and infrastructure", online: <https://norebo.ru/en/our-companies/>, viewed in June 2018; NOREBO (2018, June), "Our companies: Administration and management", online: <https://norebo.ru/en/our-companies/>, viewed in June 2018; Orbis (2018, June), "Current subsidiaries: Norebo Overseas Holdings", viewed in June 2018; Orbis (2018, June), "Current subsidiaries: Three Towns Capital", viewed in June 2018; Orbis (2018, June), "Current shareholders: Three Towns Capital", viewed in June 2018; Orbis (2018, June), "Current shareholders: Norebo Overseas Holdings", viewed in June 2018; Orbis (2018, June), "Current shareholders: Seafood Holding", viewed in June 2018.

From the company structure and description above it is clear that Baltlanta is both vertically and horizontally integrated. The company has fishing activities both in the Baltic Sea and the Atlantic. This indicates international structural horizontal integration. Baltlanta itself operates freezer trawlers which are themselves steps in vertical integration. However, the ultimate owners of Baltlanta also own a large fully-integrated seafood company that operates in fish catching, processing, trade, distribution and wholesale globally.

16.3.2. Atlantic High Sea Fishing Company

Atlantic High Sea Fishing Company is a large Lithuanian fishing company. As Figure 77 shows, it is a subsidiary of Dutch PP Group (see section 18.3.1). Atlantic High Sea Fishing Company operates two large pelagic fishing vessels.

In 2016, Atlantic High Sea Fishing company had 79 employees (Orbis, 2018n). It generated € 16.4 million in revenues, with € 14.8 million in total assets in the same year (ibid.). In 2015, the company had the same number of employees (ibid.). That year, it generated € 17.3 million in revenues, and held total assets worth € 16.8 million (ibid.).

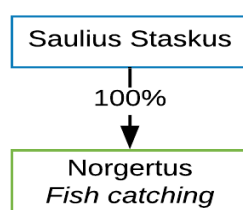
Figure 77: Atlantic High Sea Fishing Company structure

Source: Orbis (2018, June), "Beneficial owners: Atlantic High Sea Fishing Company", viewed in June 2018.

As part of the PP Group (see section 18.3.1), Atlantic High Sea Fishing Company is part of a fully-integrated seafood company.

16.3.3. Norgertus

Norgertus is a Lithuanian fishing company. It operates one large pelagic fishing vessel. The company seems to be owned by the director, Saulius Staskus. Further information regarding the company is limited. Data service providers estimate that in 2016, the company generated operating revenues of approximately € 15,000 (Orbis, 2018o). This figure seems low for a company operating such a large vessel.

Figure 78: Norgertus company structure

Source: Orbis (2018, February), "Current shareholders: Norgertus", viewed in February 2018; Orbis (2018, July), "Current directors: Norgertus", viewed in July 2018.

From the above information there is no evidence of either vertical or horizontal integration in Norgertus.

16.3.4. Banginis

Banginis is a Lithuanian pelagic fishing company. It operates four fishing vessels (Banginis, 2018). The vessels target herring, sprat and cod in the Baltic sea (Svensson, 2014). The boats land their catch in Skagen, Denmark (ibid.). The director of Banginis, Algirdas Aušra, is assumed to be the ultimate owner of Banginis.

As Figure 79 shows, Algirdas Aušra is a shareholder in FF Skagen Fond. FF Skagen Fond is the majority shareholder of FF Skagen AS. Through its subsidiary H.F. Industrifisikehandel. FF Skagen has a network of fish sales and distribution affiliates around the world (e.g. Norway, South Africa, China, Mauritania, Chile, Singapore, and Greece) (Orbis, 2018p). FF Skagen AS also holds shares or is full owner of processing, wholesale, trade and distribution companies in Sweden and Denmark.

FF Skagen AS is one of the largest fishmeal and fish oil producers in the world, exporting to over 60 countries (FF Skagen AS, 2018a).

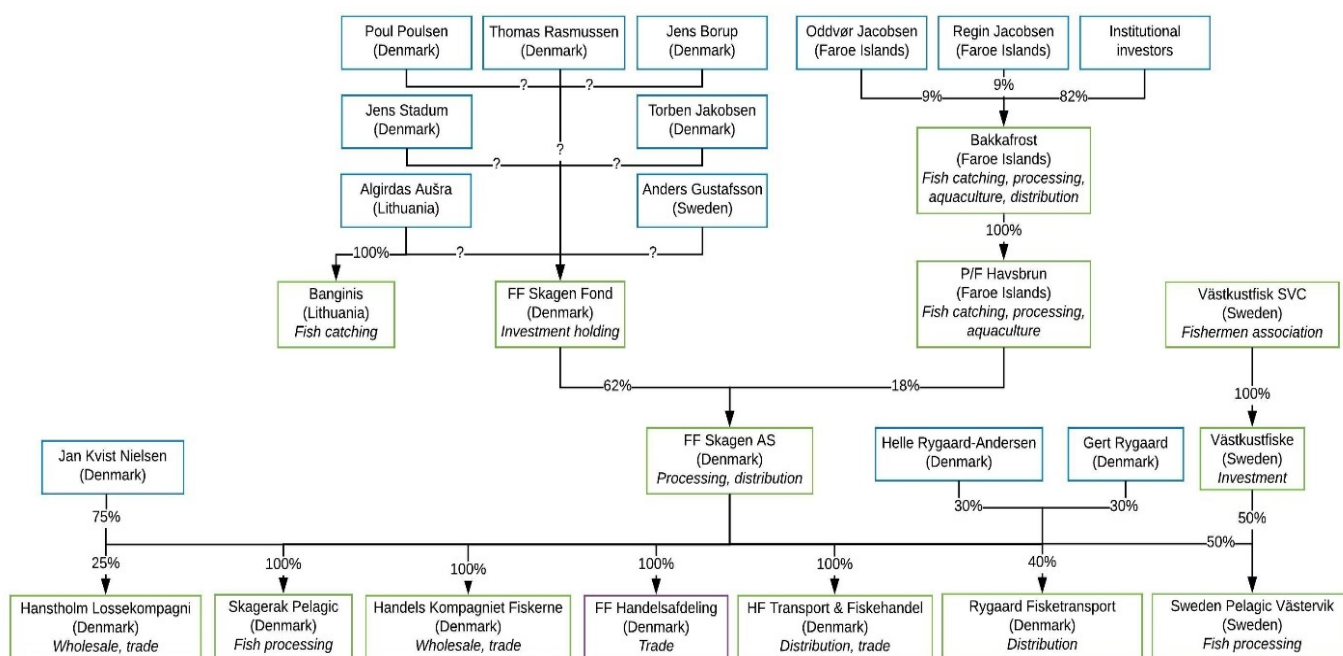
The Swedish fish processing company is owned by an investment company – Väst kustfiske. Väst kustfiske is a wholly-owned subsidiary of Swedish fishermen’s association Svenska Väst kustfiskarnas Centralförbund (Väst kustfisk SVC) and invests in a number of companies in the seafood sector in Sweden and Poland (see section 19.3.2)

The minority shareholder of FF Skagen AS, P/F Havsbrun, is ultimately owned by Bakkafrost. Stock-listed Bakkafrost is the largest salmon farmer in the Faroe Islands. It is likely that Bakkafrost sources the fishmeal used for its salmon farming, at least in part, from its affiliate FF Skagen through subsidiary P/F Havsbrun.

Banginis generated revenues of € 1.6 million in 2016 (Orbis, 2018q). This was an increase by around half from the € 1.1 million generated in 2015 (ibid.). No further financial information is available.

In 2017, FF Skagen AS generated revenues of € 309 million, up from € 270 million a year earlier (FF Skagen AS, 2018b). In 2017, the company held total assets worth € 233 million, an increase from € 201 million in 2016 (ibid.).

Figure 79: Banginis company structure



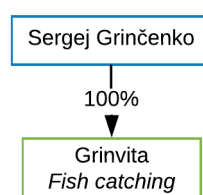
Source: Orbis (2018, February), “Current shareholders: Banginis”, viewed in February 2018; Orbis (2018, July), “Current directors: Banginis”, viewed in July 2018; FF Skagen Fond (2018, March), *Annual Report 2017*; Erhvervsstyrelsen (2019, May), *FF Skagen Fond*; Sweden Pelagic Västervik (2017, April), *Consolidated Annual Report 2016*; Väst kustfisk SVC (2017, May), *Annual Report 2016*; Bakkafrost (2018, March), *Annual Report 2017*; Erhvervsstyrelsen (2019, May), *Hanstholm Lossekompagni*; Erhvervsstyrelsen (2019, May), *Rygaard Fisketransport*; Erhvervsstyrelsen (2019, May), *Rygaard Holding*.

Looking at Banginis’ company structure, it shows that the company is integrated in a large network of seafood companies. As FF Skagen is primarily a fishmeal and fish oil producer, it is likely that Banginis lands its fish in Skagen for industrial rather than human consumption. FF Skagen processes the harvested fish into fishmeal and fish oil used for fish farms, such as those operated by Bakkafrost – part of the same network of seafood companies. Banginis itself is not structurally vertically or horizontally integrated. Its affiliates through FF Skagen Fond are not engaged in fish catching, but primarily in processing and distribution. This indicates a level of structural vertical rather than horizontal integration.

16.3.5. Grinvita

Grinvita is a Lithuania fishing company. It operates two small vessels. The company is estimated to have generated revenues of approximately € 15,000 in 2016, up from € 14,900 in 2015 (Orbis, 2018s). No further information could be identified for Grinvita.

Figure 80: Grinvita company structure



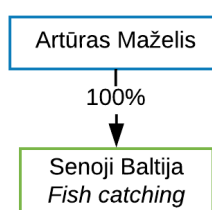
Source: Orbis (2018, February), "Company report: Grinvita", viewed in February 2018; Orbis (2018, July), "Current directors: Grinvita", viewed in July 2018.

From the above diagram and description, there is no evidence of vertical or horizontal integration in the company structure of Grinvita.

16.3.6. Senoji Baltija

Senoji Baltija is a Lithuanian fishing company. Table 55 shows that it operates at least two vessels. A more recent source suggests that Senoji Baltija operates six vessels (Orbis, 2018r). In 2015, the company generated approximately € 735,000 in revenue (Orbis, 2018t). This was an increase from € 555,000 in 2014 (ibid.). The company owned total assets worth € 1.4 million in 2015, down from € 1.5 million in 2014 (ibid.). The size of Senoji Baltija's workforce also decreased from 51 employees in 2014, to 49 in 2015.

Figure 81: Senoji Baltija company structure



Orbis (2018r, February), "Current subsidiaries: Senoji Baltija", viewed in February 2018; Orbis (2018, July), "Current directors: Senoji Baltija", viewed in July 2018.

From the company structure and descriptions above, Senoji Baltija has engaged in structural horizontal integration by expanding the fleet. However, there are no indications of structural vertical integration.

16.4. Integration

The above analysis has shown that three of the six analysed Lithuanian fishing companies are part of larger fully-integrated seafood groups. Moreover, more than 40% of the fishing companies active in Lithuania own more than one vessel. These findings suggest a significant degree of horizontal integration, in addition to international vertical integration.

Lithuanian Fisheries Expert 1 stated that in Lithuania horizontal integration takes place through acquiring more quota and sometimes through acquiring more vessels (Lithuanian Fisheries Expert 1, 2018). Lithuanian Fisheries Expert 2 noted that "usually, but not always, fishing companies buy vessels together with transferable fishing rights" (Lithuanian Fisheries Expert 2, 2018). Informal integration takes place through quota swaps and borrowing.

European policy influences this kind of integration by allowing fishing rights to be transferred. “There is a limited access to fisheries resources. For expanding their activities, fishing companies have to buy available fishing opportunities from other fishing companies” (Lithuanian Fisheries Expert 2, 2018). This leads to monopolisation of fishing quotas. Both respondents indicate that integration limits competition in the country.

The vertical integration that takes place, it is mostly in the small-scale coastal fishing sector (Lithuanian Fisheries Expert 2, 2018).

17. MALTA

KEY FINDINGS

- Approximately **30%** of fishing **enterprises** own **more than one vessel**
- **Tuna farming** among **largest** in the **world**
- Very **limited vertical integration**, one large integrated group
- Very **limited horizontal integration**, sector **dominated** by **small-scale** fishermen

17.1. Composition of the Maltese seafood sector

Maltese fishing companies earned € 12 million in landings income in the 2015 (Table 56). Fish processing companies earned € 30 million in production revenue in 2012, the most recent available official figures.

Malta maintained a positive trade balance of € 38 million in fish products in 2016. Fish exports of € 38 million in 2016, accounted for 1.6% of Malta's GDP. Only 7% of its fish exports were to other EU countries. By far the largest export destination for Maltese fish products was Japan, accounting for 80% of fish exports. This was followed by South Korea (12%) and Italy (5%).

In 2016, Malta imported € 121 million in fish products. 66% of these imports came from EU countries. Malta's main import partners were Italy (30%), the Netherlands (14%) and France (12%).

There were 1,039 registered commercial fishing vessels in Malta in 2015. These were owned by 1,004 enterprises. 300 enterprises – or 30% of all fishing companies – owned more than one vessel. In 2017, 79 vessels ceased their fishing activities, and a quarter of the registered vessels were inactive (STECF 2018). The Maltese fish catching segment employed 872 fte.

The most recent processing segment data refers to 2012. In that year, there were only 30 fte employed in the fish processing segment. This indicates that there is only minimal fish processing in Malta. A large part of the landed fish is likely sold fresh in the harbour or at markets.

Table 56: Maltese seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	1,039	
	Average vessel tonnage per vessel (2015, GT)	7	
	Average vessel tonnage per enterprise (2015, GT)	7	
<i>Enterprises</i>	Number of fishing enterprises (2015)	1,004	
	Enterprises with more than one vessel (2015, number, % enterprises)	300	29.9%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	12	0.12%
	Average landing income per fte employed (2015, €)	13,268	
	Average landing income per vessel (2015, €)	11,142	
	Average landing income per enterprise (2015, €)	11,530	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	872	0.48%
	Average employment per vessel (2015, fte)	0.8	
	Average employment per enterprise (2015, fte)	0.9	

Segment	Measure	Value	Proportion
Processing	Processing production (2012, € mln, % GDP)	30	0.30%
	Employment in the fish processing sector (2012, fte, % workforce)	53	0.03%
	Average processing production per fte employed (2015, €)	557,844	
Trade	Trade balance (2016, € mln, % GDP)	38	0.39%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	159	1.61%
	1. Japan (2016, € mln, % export)	128	80%
	2. Korea, Republic Of (2016, € mln, % export)	18	11%
	3. Italy (2016, € mln, % export)	9	5%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	121	1.22%
	1. Italy (2016, € mln, % import)	37	30%
	2. Netherlands (2016, € mln, % import)	16	14%
	3. France (2016, € mln, % import)	14	12%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

17.2. Producer organisations

There are no producer organisations in Malta. Two fishing cooperatives are the Għaqda Koperattiva tas-Sajd and the Koperattiva Nazzjonali tas-Sajd.

17.3. Company analysis

Most of the fishing companies in Malta are small scale, traditional father and son businesses. According to Senior Fishery Officer at United Nations Food and Agriculture Organisation Matthew Camilleri 90% of the vessels in Malta are under 12 metres. There are about 16 trawlers from which only a few can operate in the 25-mile zone around Malta. If companies have expanded by buying other vessels, it is likely that they bought family-owned longliners or trawlers and not smaller fishing boats (Camilleri, 2018). It is not possible to purchase, for example, ten smaller vessels and exchange these for one bigger vessel (ibid.). Fishermen often have a fishing boat and a support vessel. There are bigger vessels too, that belong to fish farms (Anonymous B, 2018).

There are also companies on Malta that have given up on fishing, but that operate their vessels to support fish farms (Camilleri, 2018). The tuna fish farming industry in Malta is the largest in the world (Times of Malta, 2018). The fish that are fattened in the farms come from Spanish, French and Italian fishers as the quota in Malta is too small. These companies that are supporting the aquaculture industry are not catching the fish but are involved in putting them in cages and transportation (Camilleri, 2018).

According to Andreina Fenech Farrugia, the bigger companies in Malta do not fish themselves, but they buy fish from the small-scale fishermen or they import it (Farrugia, 2018). 93% of the fisheries segment is small-scale (STECF 2018).

For these small-scale fisheries in Malta it is not easy to survive, as they *"are experiencing an ever-challenging struggle to survive as time goes by: fighting the backlash of the industrial boom on the part of large-scale fisheries."* (The Malta Independent, 2018).

Another issue that makes it hard for fishers to keep their business going is the fact that young people are not interested in this kind of work. They consider it hard work for little pay. The prices of fish have dropped a lot for some species, for example for mackerel. It was estimated that a kilogramme of mackerel was sold for € 15 about thirty years ago, while nowadays it would be sold for only 50 cents (Maltese fisheries expert 1, 2018). This happens for two reasons: firstly, consumers prefer processed fish, and secondly a lot of the fish that is caught is sold to fish farmers, who grow the fish in hatcheries, and who set the price (ibid.).

Fishermen in Malta are experiencing a hard time due to EU regulations as well. Some find that the EU does not listen to them and that there is no attention for the different kinds of needs of different fishers (Maltese fisheries expert 1, 2018).

Catches are registered upon landing and there are routine checks. After this check, some of the fish is sold for example to restaurants, but the biggest part goes to fish farms for further growing. This happens with mackerel, sardines, anchovies (Maltese fisheries expert 1, 2018).

Dorado, swordfish and tuna are usually sold through the fish market (Maltese fisheries expert 1, 2018).

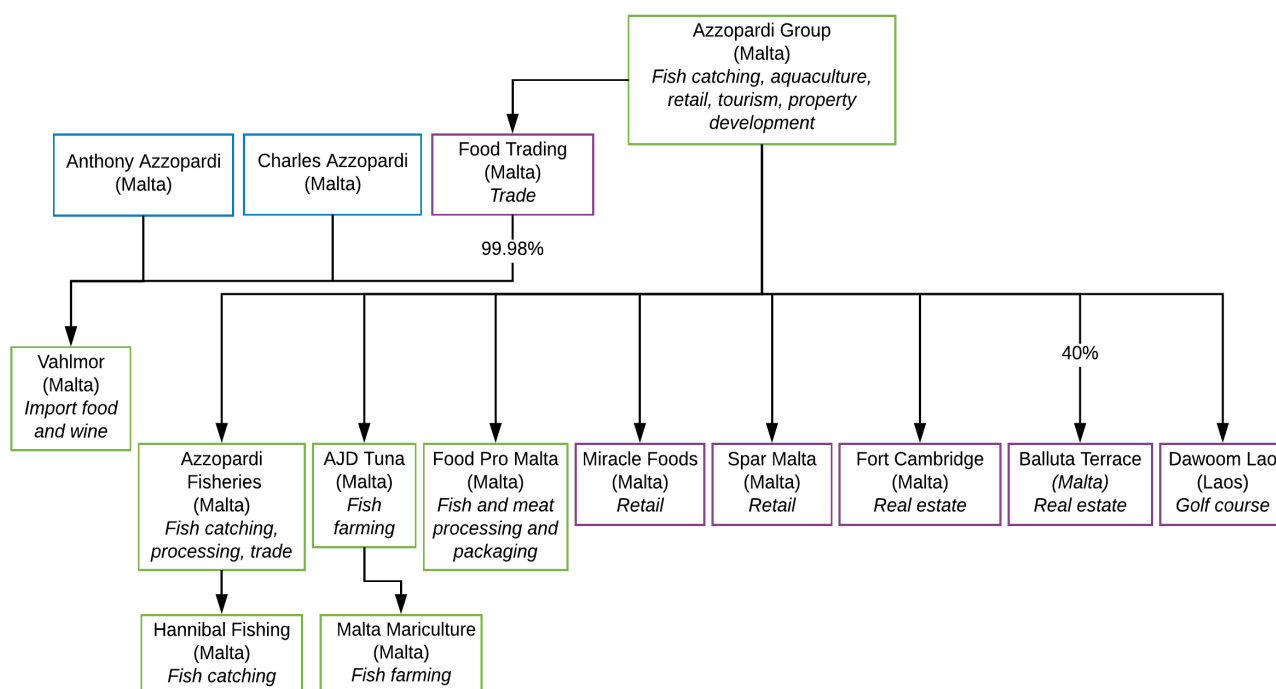
17.3.1. Azzopardi Fishing

Azzopardi Fishing is, according to its own website, the largest seafood business in Malta (Azzopardi n.d.a). Azzopardi Fishing started off around 30 years ago with selling fish only, but that has since become Malta's largest seafood business, including activities in marine fishing. According to Matthew Camilleri, Azzopardi Fishing represents about 50% of the fishing sector in Malta (Camilleri, 2018).

Azzopardi Fishing is part of the Azzopardi Group, that has several other companies. *"Today, the Azzopardi Group, through family holdings, has evolved to become one of the leading players in the FMCG (Fast-Moving Consumer Goods), Aquaculture, Retail, Tourism and Property Development"* (Azzopardi n.d.a).

Azzopardi Fishing itself has established a subsidiary fishing company called Hannibal Fishing (Azzopardi n.d.b).

Figure 82: Azzopardi company structure



17.4. Integration

A large company like Azzopardi shows that there is integration in the fishery sector in Malta. This specific company has integrated vertically, downwards in the value chain, as they started off with processing fish and later started fishing too. However, according to Andreina Fenech Farrugia, Director General of the Department of Fisheries and Aquaculture in Malta, this is not common practice in Malta, where 90% of the fishing is done by small scale fishers (Farrugia, 2018). In fact, Azzopardi may be the only clear example of vertical integration in Malta (ibid.).

Horizontal integration is also very limited in Malta. Fishers sell and buy quotas to and from each other. Bigger fish catching companies buy quotas from the small-scale fishers (Anonymous B, 2018).

18. NETHERLANDS

KEY FINDINGS

- **Significant** and **extensive horizontal integration** in **pelagic** segment
- **Historical** developments contributed to **horizontal integration** in **pelagic** segment
- **Pelagic** fishing companies **all vertically integrated**
- **Horizontal integration** also present in **demersal segment**
- **Demersal segment** also **high** levels of **vertical integration**

18.1. Composition of the Dutch seafood sector

In 2015, Dutch fishing companies generated a landings income of € 376 million (Table 57). Processing companies added a further € 963 million in production revenue in 2016.

The Netherlands maintained a € 865 million trade surplus in fish and fish products in 2016. The country exported approximately € 4.2 billion in fish products. 82% of this was destined to other EU countries. The main export destinations for Dutch fish and fish products were Germany (20%), Belgium (14%) and France (12%).

The Netherlands also imported € 3.3 billion worth of fish and fish products. Only 35% of these imports came from other EU countries. The main import partners were Iceland (11%), Germany (11%) and Belgium (8%).

In 2015, there were 718 registered commercial fishing vessels in the Netherlands. These were owned by 568 enterprises. 96 fishing companies – 17% of all fishing companies – operated more than one fishing vessel. Just under 30% of the registered vessels were inactive.

The Dutch fish catching segment employed 1,619 fte. The processing segment in the Netherlands employed a significantly smaller workforce of 963 fte. This may be explained by the fact that the Netherlands operates freezer trawlers with primary processing facilities on board. It may further be explained by the nature of the marketed product – more fresh and frozen than processed fish.

Table 57: Dutch seafood sector key figures

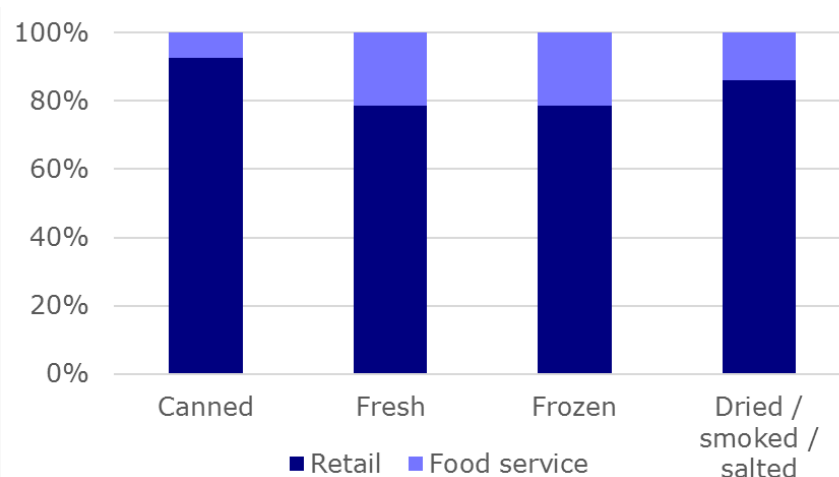
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	718	
	Average vessel tonnage per vessel (2015, GT)	175	
	Average vessel tonnage per enterprise (2015, GT)	222	
<i>Enterprises</i>	Number of fishing enterprises (2015)	568	
	Enterprises with more than one vessel (2015, number, % enterprises)	96	16.9%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	376	0.06%
	Average landing income per fte employed (2015, €)	232,285	
	Average landing income per vessel (2015, €)	523,829	
	Average landing income per enterprise (2015, €)	662,165	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	1,619	0.02%
	Average employment per vessel (2015, fte)	2.3	
	Average employment per enterprise (2015, fte)	2.9	

Segment	Measure	Value	Proportion	
Processing	Processing production (2016, € mln, % GDP)	963	0.14%	
	Employment in the fish processing sector (2015, fte, % workforce)	2,181	0.03%	
	Average processing production per fte employed (2015, €)	441,449		
Trade	Trade balance (2016, € mln, % GDP)	865	0.12%	
	<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	4,196	0.60%
	1. Germany (2016, € mln, % export)	815	19%	
	2. Belgium (2016, € mln, % export)	575	14%	
	3. France (2016, € mln, % export)	500	12%	
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	3,331	0.47%	
	1. Iceland (2016, € mln, % import)	374	11%	
	2. Germany (2016, € mln, % import)	365	11%	
	3. Belgium (2016, € mln, % import)	249	7%	

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

In the Netherlands, 44% of the fish and fish products that enter the market are sold as fresh, 33% is sold as frozen. Canned and dried/smoked/salted account for respectively 14% and 10% of the fish and fish products that are sold in the Dutch seafood market. On average, more than 80% of the fish products sold in the Netherlands are sold through retailers, the remainder is sold through the food service industry. Just under 80% of the fresh and frozen fish products are sold through retailers (see Figure 83). More than 90% of canned, and more than 85% of dried/smoked/salted fish products are sold through retailers.

Figure 83: Netherlands: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In the Netherlands, the majority of fresh fish – almost three quarters – is sold unbranded (see Table 58), a quarter is sold with the retailers’ own label. These proportions differ for the other fish product categories, where the majority is sold branded. 85% of the canned, and 72% of the frozen fish products are sold branded, with the remainder sold with the retailers’ own label. Just under two thirds of dried/smoked/salted fish products are sold as branded, and just over a third is sold with the retailers’ own label.

Table 58: Netherlands: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	5%	85%	72%	63%
Unbranded	70%			
Own label	25%	15%	28%	37%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

PP Group (see section 18.3.1), with brands such as Heiploeg, holds a share of around 21% in the Dutch fresh fish product segment (FFT, 2018). Roem van Yerseke, which is focussing on shellfish, holds a share of around 20% of the fresh product segment (FFT, 2018 and Zeeland’s Roem, n.d.). In the frozen product segment, Nomad (UK) with its Iglo brand hold the leading position with a share of around 37% (ibid.). In canned fish products John West (Thai Union (Thailand)) holds a market share of around 30%, followed by Princes (part of Mitsubishi (Japan)) with 18% and Roem van Yerseke with approximately 11% (ibid.). PP Group’s subsidiary Ouwehand Rederij also holds an important position in the canned segment with a share of about 7% and in the dried/smoked/salted segment with a market share of around 18% (ibid.).

18.2. Producer organisations

Table 59 shows that there are 12 recognized producer organisations in the Netherlands. Among them is the producer association Coöperatieve Visserij Organisatie (CVO). Of the remaining 11 organizations, 8 are members of CVO. CVO represents demersal fishing companies. Five of the listed POs are regional POs that are also members of VisNed, the Dutch national demersal fisheries representative association. Due to lack of data availability, the number of vessels and members is not provided.

Table 59: Netherlands: Recognized producer organizations

Association	Producer organization	Segment
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Delta Zuid*	Coastal and deep sea, high sea, local small-scale, other
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Nederlandse Vissersbond	Local small-scale
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Nederlandse Vissersbond IJsselmeer	Other
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Texel*	Local small-scale
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Voor De Visserij Urk*	Coastal and deep sea, high sea, local small-scale, other
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie West*	Coastal and deep sea, high sea, local small-scale, other
Coöperatieve Visserij Organisatie	Coöperatieve Producentenorganisatie Wieringen*	Coastal and deep sea, high sea, local small-scale, other
Coöperatieve Visserij Organisatie	Coöperatieve Visserij Organisatie	Local small-scale, deep sea, high sea.

Association	Producer organization	Segment
Coöperatieve Visserij Organisatie	Internationale Garnalen P.O. Rousant	Coastal and deep sea
n/a	Gezamenlijke Producentenorganisatie Garnaal	Coastal and deep sea
n/a	Producentenorganisatie van de Nederlandse Mosselcultuur	Other
n/a	Redersvereniging voor de Zeevisserij	Other

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission, p. 12-13; Coöperatieve Visserij Organisatie (n.d.), "Home", online: <http://cvo-visserij.nl/>, viewed in September 2018; VisNed (n.d.), "Producenten Organisaties (PO's)", online: <https://www.visned.nl/over-visned/po-s>, viewed in September 2018.

Note: * members of VisNed.

The interests of the three Dutch pelagic fishing companies are represented by the Pelagic Freezer-trawler Association (PFA). PFA states that it represents nine companies. However, as Table 60 shows, these nine members belong to four company groups.

Table 60: Pelagic Freezer-trawler Association members

Group	PFA member company
Cornelis Vrolijk	Cornelis Vrolijk's Visserij Maatschappij (Netherlands)
Cornelis Vrolijk	France Pélagique (France)
Cornelis Vrolijk	Jacson (Netherlands)
Cornelis Vrolijk	North Atlantic Fishing Company (United Kingdom)
Interfish	Interfish (United Kingdom)
PP Group	Atlantic High Seas Fishing Company (Lithuania)
PP Group	Doggerbank Seefischerei (Germany)
PP Group	Parlevliet & Van der Plas (Netherlands)
van der Zwan	W. van der Zwan & Zn (Netherlands)

Source: Pelagic Freezer-trawler Association (n.d.), "Our members", online: <https://www.pelagicfish.eu/organisation>, viewed in September 2018.

18.3. Company analysis

This section describes the company structures of the four largest fishing companies in the Netherlands. The largest companies in the Dutch pelagic sector are Parlevliet & Van der Plas (PP Group), Cornelis Vrolijk and van der Zwan. The largest demersal fishing companies in the Netherlands are Quotter, de Boer and Jaczon (Visser, 2018). Quotter is owned by van der Zwan and Jaczon is owned by Cornelis Vrolijk. This company analysis will therefore focus on PP Group, Cornelis Vrolijk, van der Zwan and de Boer.

18.3.1. Parlevliet & Van der Plas (PP Group)

PP Group is a large holding company. It is active in both the pelagic and demersal fish catching segment, as well as fish processing and trade.

The holding consists of over 170 companies, owning 43 vessels (Orbis, 2018f). PP Group has 51 companies in the Netherlands, and 120 companies abroad. It is active in 19 countries (see Table 61). The majority of the group's subsidiaries are located in the Netherlands, Germany, France, Denmark and the United Kingdom.

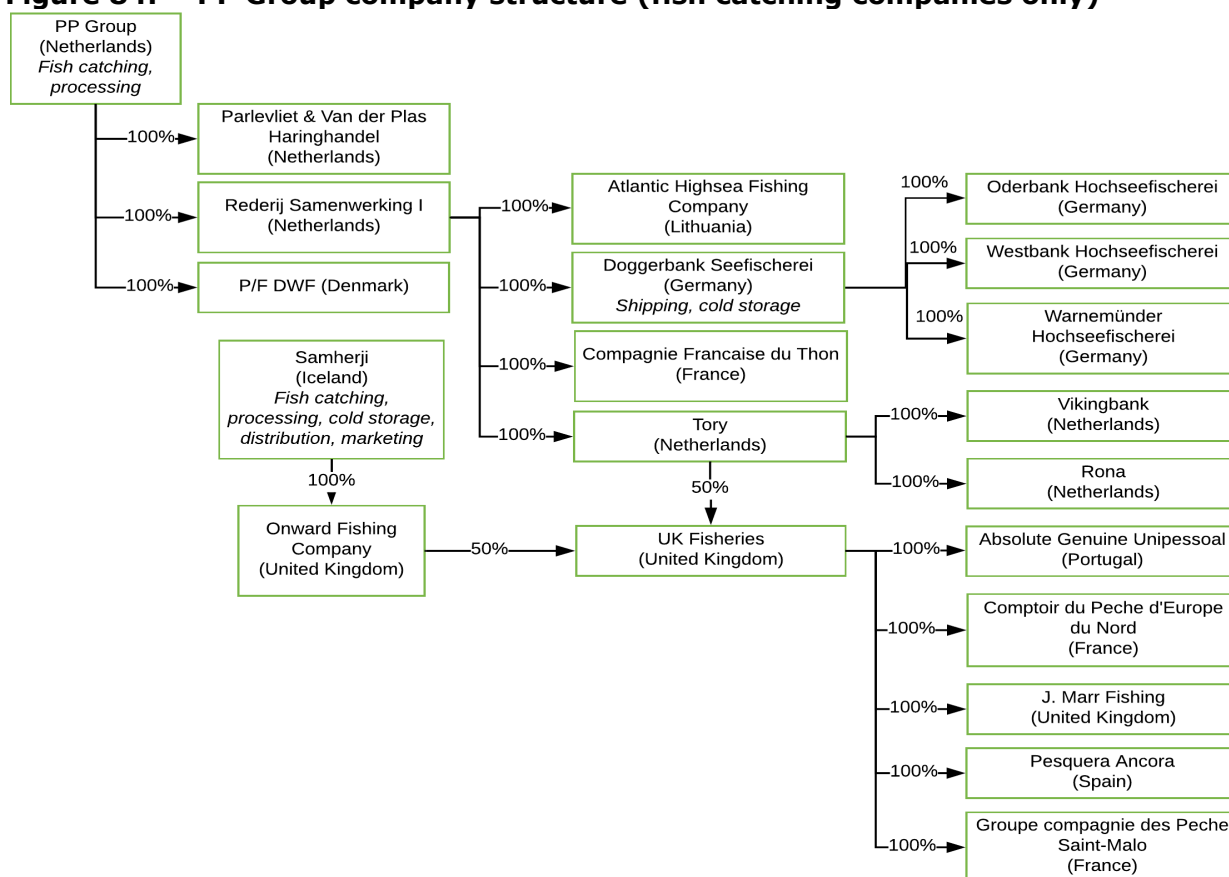
Table 61: Number of subsidiaries in countries where the PP Group is active

Country	No. of subsidiaries
Netherlands	51
Germany	36
Denmark	30
France	15
United Kingdom	15
Norway	4
Belize	3
Lithuania	3
Malta	2
Portugal	2
Saint Lucia	2
Surinam	2
Australia	1
Curacao	1
Gabon	1
India	1
Namibia	1
Spain	1

Source: Orbis (2018), "Current subsidiaries: PP Group", viewed in June 2018.

PP Group generated € 850 million turnover in 2016 (Orbis, 2018av). This was an increase from € 772 million in 2015 (ibid.). The company held € 903 million in total assets in 2016 (ibid.). The year before it owned € 685 million in total assets (ibid.).

Figure 84 shows a simplified company structure of the fisheries companies under PP Group.

Figure 84: PP Group company structure (fish catching companies only)

Source: Orbis (2018), "Current subsidiaries: PP Group", viewed in June 2018; Orbis (2018), "Current shareholders: PP Group", viewed in June 2018.

In addition to fish catching, PP Group also processes, freezes, packs, and trades fish through a number of subsidiaries. Heiploeg International is a vertically integrated shrimp company. It includes a shrimp peeling station in Morocco and subsidiaries in, among others, Germany (Büsumer Krabbenhandel), India, and Suriname. Other processing subsidiaries are Ouwehand Visverwerking and Frigo 2000 IJmuiden in the Netherlands, and Euro-Baltic Fischverarbeitungs GmbH and Ocean Food in Germany (Orbis, 2018f).

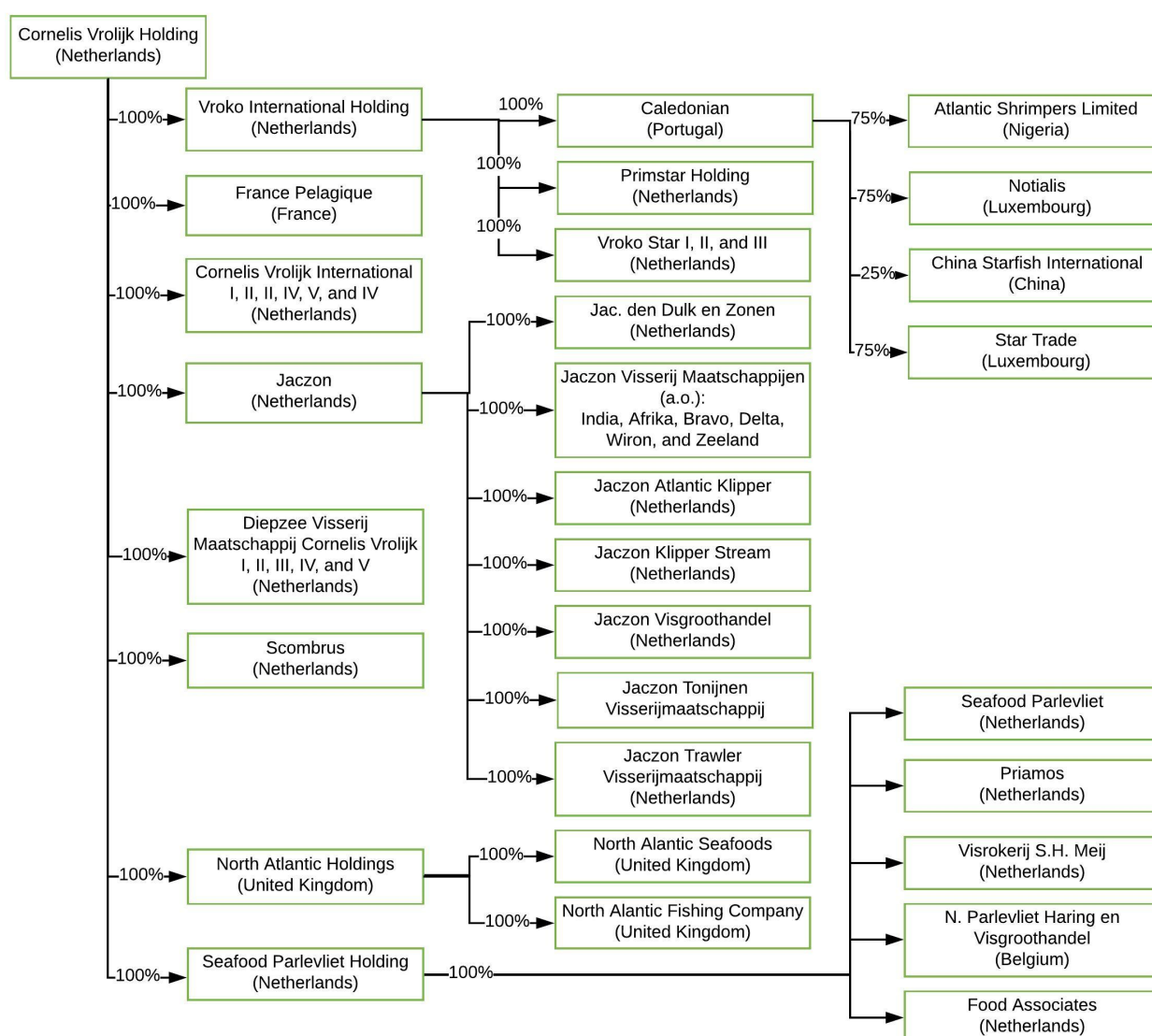
From the above description, it is evident that PP Group is a very large, fully integrated company. It has engaged in horizontal integration both domestically and internationally. The company's horizontal integration was not limited to the pelagic segment on which it was founded, but it also diversified its portfolio with investments in the demersal segment. The company has engaged in vertical integration by developing processing facilities both in the Netherlands and elsewhere in Europe.

18.3.2. Cornelis Vrolijk

Cornelis Vrolijk/Jaczon is a group of about 100 companies engaged in both the demersal and pelagic sector. The ultimate holding company – Cornelis Vrolijk Holding – is based in IJmuiden, the Netherlands. The company owns approximately 93 fishing vessels. The largest proportion of the fleet (70 vessels) is owned through Atlantic Shrimpers Limited (Nigeria), a subsidiary of Vrolijk's main holding Vroko International.

Cornelis Vrolijk is active in the catching and trade of fish through Cornelis Vrolijk and subsidiaries Jaczon BV (Netherlands), France Pélagique SAS (France) and North Atlantic Fishing Company Ltd (United Kingdom). The pelagic fish is stored in company-owned coldstores. Furthermore, Vrolijk/Jaczon is active in the catching, trade and processing of (tropical) shrimps, through subsidiary Primstar BV. Finally, the company is active in fish processing and trade through its subsidiaries Jac. den Dulk & Zonen BV and Seafood Parlevliet BV (Netherlands) (Cornelis Vrolijk, 2018a). In March 2018, Cornelis Vrolijk acquired a majority share in Bertus Dekker Seafood (Cornelis Vrolijk, 2018b). It thereby further diversified its portfolio with demersal fish processing capacity (Undercurrent News, 2018c).

In 2016, Cornelis Vrolijk generated approximately € 336 million in revenues (Orbis, 2018aw). This was € 30 million more than in the previous year (ibid.). The company owned total assets worth € 399 million, € 37 million more than in 2015 (ibid.).

Figure 85: Cornelis Vrolijk company structure (main companies only)

Source: Orbis (2018), "Current subsidiaries: Cornelis Vrolijk", viewed in June 2018; Orbis (2018), "Current shareholders: Cornelis Vrolijk", viewed in June 2018.

Cornelis Vrolijk operates two pelagic freezer-tractlers under Dutch flag. As does subsidiary Jaczon. Furthermore, Jaczon operates nine demersal cutters and one mussel vessel under Dutch flag.

The majority of the subsidiaries of the Cornelis Vrolijk group are based in the Netherlands. Integration within the EU takes place through North Atlantic (Holdings) Limited (United Kingdom), that operates fish catching companies in Great Britain. Vroko International has subsidiaries in Portugal, Spain, the UK and Luxembourg; Cornelis Vrolijk International III operates a Spanish subsidiary, Cornelis Vrolijk International IV operates a Romanian subsidiary, and Cornelis Vrolijk's Visserij Maatschappij operates a British subsidiary. Seafood Parlevliet has a subsidiary in Belgium. Outside the EU, the company has subsidiaries in Nigeria, Ecuador, United States, India, and China.

The analysis above has shown the Cornelis Vrolijk is a fully integrated fisheries company. It has engaged in horizontal integration at both the fish catching and processing levels. Horizontal integration at the fish catching level has taken place in both the demersal and pelagic segments through investments both domestically and internationally. Horizontal integration at the fish processing level has similarly taken place both domestically, and

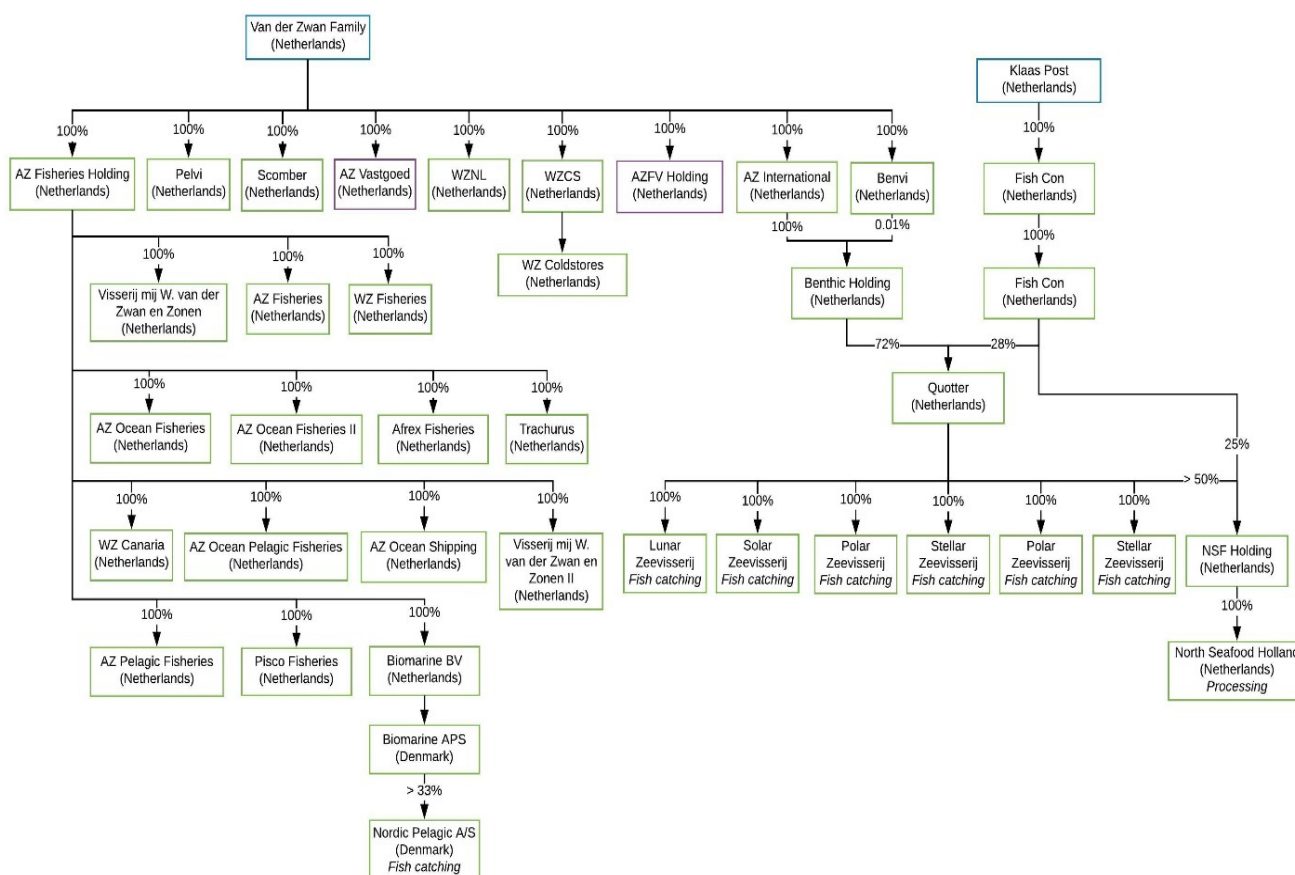
through investments internationally. Vertical integration has taken place from fish catching into fish processing and trade.

18.3.3. van der Zwan

W. van der Zwan & Zn BV. is a family business, established in 1888. Van der Zwan engages in fish catching, processing and distribution. The company owns and operates a fleet of deep-sea freezer trawlers. On board the pelagic fish is graded, frozen and packed. The company also owns and operates a fleet of cutters. Van der Zwan has coldstore facilities in Scheveningen, Velsen and Amsterdam, as well as multiple coldstores in Africa (among others in Ghana) (Van der Zwan, 2018).

Previously W. van der Zwan en Zonen Holding B.V. was the ultimate parent of the group of companies. This company has been dissolved in 2015. Former subsidiary Willem van der Zwan en Zonen B.V. has also been dissolved (Orbis, 2018a). Currently, the main holding company is AZ Fisheries Holding, see Figure 86.

Figure 86: Van der Zwan Group company structure



Source: Orbis (2018), "Current subsidiaries: AZ Fisheries Holding", viewed in May 2018; Orbis (2018), "Current shareholders: AZ Fisheries Holding", viewed in May 2018.

AZ Fisheries Holding that operates the pelagic fleet of Van der Zwan. AZ Ocean Pelagic Fisheries operates two freezer-trawler vessels under Dutch flag, the Alida and the Willem van der Zwan. The Danish subsidiary Nordic Pelagic operates under Danish flag the L303 Ariadne (the former M-10-HO 'Heroyfjord'). The Ariadne catches fishes for the fish meal industry (Visserijnieuws, 2015). AZ Fisheries generated € 92 million in revenue in 2016, a year earlier it had generated € 93 million (Orbis, 2018ax). In 2016, AZ Fisheries held total assets worth € 143 million (ibid.). In 2015, it had total assets of € 162 million (ibid.).

AZ International is the holding company for the cutter fleet. Through subsidiary Benthic Holding, it owns shares in demersal fisheries company Quotter and flatfish processor North Seafood. Quotter is one of the largest fishing companies of the Dutch demersal sector (Visser, 2018). Quotter is the holding company of a group of seven companies (Orbis, 2018b). Six of them are fishing companies, each managing the operations of one fishing vessel. The seventh company is a fish processing company – NorthSeafood. The fish processing company NorthSeafood specialises in frozen flatfish products, primarily for the retail market (NorthSeafood, 2018). In 2016, AZ International held total assets worth € 209 million, up approximately € 14 million from € 195 million in 2015 (Orbis, 2018ay).

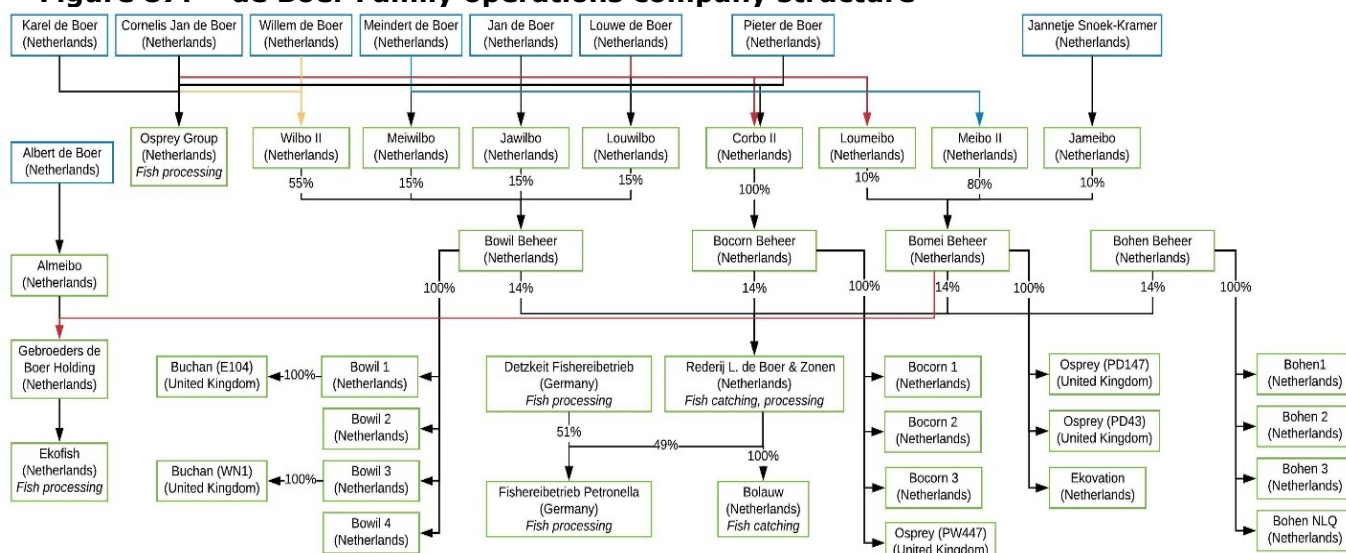
Similar to its peers PP Group and Cornelis Vrolijk, the group of companies owned and operated by the van der Zwan family are both vertically and horizontally integrated. In terms of horizontal integration, unlike PP Group and Cornelis Vrolijk, there has been less extensive international horizontal integration through investments in Denmark and Ghana. PP Group and Cornelis Vrolijk had more extensive investments in other EU countries. However, again similar to its peers, the van der Zwan operations are active in both the demersal and pelagic segments. The company has also engaged in vertical through its investments in both processing and trade.

18.3.4. de Boer

The fishing operations of the de Boer family are considered among the largest demersal fishing operations in the Netherlands (Visser, 2018). Figure 87 presents the web of companies around Rederij L. de Boer & Zonen. The corporate structure is a web of holding and trust companies. No individual shareholders are noted in the corporate databases, and there is no central ownership. Individual shareholders presented in Figure 87 are based on inferences on the basis of directorships (see Table 75).

Figure 87 shows that the de Boer family has fishing activities in both the Netherlands and the United Kingdom.

Figure 87: de Boer Family operations company structure



Source: Orbis (2018), "Beneficial owners: Rederij L. de Boer & Zonen", viewed in October 2018; Orbis (2018), "Current subsidiaries: Rederij L. de Boer & Zonen", viewed in October 2018; Orbis (2018), "Current shareholders: Detzkeit Fishereibetrieb", viewed in October 2018; Orbis (2018), "Current shareholders: Bowil Beheer", viewed in October 2018; Orbis (2018), "Current subsidiaries: Bowil Beheer", viewed in October 2018; Orbis (2018), "Current shareholders: Bocorn Beheer", viewed in October 2018; Orbis (2018), "Current subsidiaries: Bocorn Beheer", viewed in October 2018; Orbis (2018), "Current shareholders: Bomei Beheer", viewed in October 2018; Orbis (2018), "Current subsidiaries: Bomei Beheer", viewed in October 2018; Orbis (2018), "Current shareholders: Bothen Beheer", viewed in October 2018; Orbis (2018), "Current subsidiaries: Bothen Beheer", viewed in October 2018; Kamer van Koophandel (2018), *Concernrelaties: Ekofish*, p. 1; Osprey Fish (n.d.), "Onze mensen", online: <https://www.ospreyfish.com/nl/ons-verhaal/onze-mensen>, viewed in October 2018.

Through the directorships of the various de Boer related enterprises, inferences can be made about ownership (Table 62). It appears that six family members are the key people behind the de Boer family fishing enterprises: Cornelis Jan de Boer, Jan de Boer, Louwe de Boer, Meindert de Boer, Pieter de Boer and Willem de Boer.

Table 62: de Boer family fisheries related enterprises directorships

Name	Directorships	Company	Country
Louwe de Boer	11	Bocorn Beheer	Netherlands
		Bolauw	Netherlands
		Corbo II	Netherlands
		Loucorbo	Netherlands
		Louhenbo	Netherlands
		Loumeibo	Netherlands
		Louwilbo	Netherlands
		North Sea Fishermen's Organizations GB	United Kingdom
		Osprey (PD147)	United Kingdom
		Osprey (PD43)	United Kingdom
		Rederij L. de Boer & Zonen	Netherlands
Cornelis Jan de Boer	10	Jannetje Cornelis	United Kingdom
		Osprey (PD156)	United Kingdom
		Osprey (PW447)	United Kingdom
		Bocorn 1	Netherlands
		Osprey Group	Netherlands
		Corbo	Netherlands
		JDB KZN Holding	Netherlands
		Jahenbo	Netherlands
		Bocorn 2	Netherlands
Bocorn 3	Netherlands		
Willem de Boer	6	Bowil 1	Netherlands
		Bowil 2	Netherlands
		Bowil 4	Netherlands
		Bowil Beheer	Netherlands
		Voorland Urk	Netherlands
		Wilbo II	Netherlands
		Bowil 1	Netherlands
Jan de Boer	5	Bowil Beheer	Netherlands
		Buchan (E104)	United Kingdom
		Jawilbo	Netherlands
		Osprey (Jacoba Maria)	United Kingdom
		Bowil Beheer	Netherlands
Meindert de Boer	4	Meibo II	Netherlands
		Meiwilbo	Netherlands
		Osprey (PD63)	United Kingdom
		Bohen 2	Netherlands
H de Boer	3	Bohen Beheer	Netherlands
		Henbo II	Netherlands
		Bocorn Beheer	Netherlands
Pieter de Boer	2	Corbo II	Netherlands

Name	Directorships	Company	Country
Almeibo*	2	Eko Fish Group Gebroeders de Boer Holding	Netherlands
Gebroeders de Boer Holding*	1	Bomei Beheer	Netherlands
Jannetje Snoek-Kramer	1	Jameibo	Netherlands
Albert de Boer	1	Almeibo	Netherlands

Source: Kamer van Koophandel (2018), *Concernrelaties: Ekofish*, p. 1; Orbis (2018), "Director report: Albert de Boer", viewed in October 2018; Orbis (2018), "Director report: H de Boer", viewed in October 2018; Orbis (2018), "Director report: Jan de Boer", viewed in October 2018; Orbis (2018), "Director report: Willem de Boer", viewed in October 2018; Orbis (2018), "Director report: Jannetje Snoek-Kramer", viewed in October 2018; Orbis (2018), "Director report: Meinder de Boer", viewed in October 2018; Orbis (2018), "Director report: Louwe de Boer", viewed in October 2018; Orbis (2018), "Director report: Pieter de Boer", viewed in October 2018; Orbis (2018), "Director report: Cornelis Jan de Boer", viewed in October 2018.

Note: * companies performing the role of director.

Ekofish Group and Osprey Group, listed in Table 62, are the de Boer family's fish processing companies (Ekofish, n.d.a; Osprey Group, n.d.a). They market demersal fish species such as plaice, lemon sole, turbot and brill (Ekofish, n.d.a; Osprey Group, n.d.b). In addition to its own catch, Ekofish also cooperates with other partners who catch "pulse" dover sole, MSC cod, skrei cod and MSC redfish (Ekofish, n.d.a). Ekofish has a fleet of seven cutters that are active in the Danish sea (Ekofish, n.d.c). Osprey Group's fleet is mainly vessels owned by subsidiaries located in the United Kingdom (see Figure 87).

The de Boer family fishing companies are solely engaged in demersal fisheries (Ekofish, n.d.a). The family has engaged in horizontal integration through the expansion of its fleet both domestically as well as internationally in to the United Kingdom. The family has Dutch vessels with both Dutch and British quotas and also British vessels with Dutch quota (Visser, 2019). It has also engaged in horizontal integration at the processing level through its investments in fish processing facilities in the Netherlands (Ekofish and Osprey) and Germany (Fishereibetrieb Petronella). The family has engaged in vertical integration through its investments in processing facilities, after originally being solely a fish catching company.

18.4. Integration

As the above analysis has shown, there is both vertical and horizontal integration in the Dutch fisheries sector. Integration more extensive in the pelagic segment than in the demersal segment (van Balsfoort, 2018; Dutch Fisherman 1, 2018).

Originally, Dutch pelagic fisheries were primarily focussed on herring (van Balsfoort, 2018). As in many other industries, consolidation in the sector started after WWII (ibid.). Horizontal integration in the pelagic segment was extensive, decreasing from more than 100 companies before World War II to three main companies in 2018 (Dutch Fisherman 1, 2018). Consolidation and horizontal integration in the pelagic fisheries occurred in three phases.

The first consolidation phase was driven by the occurrence of the herring worm in the 1960s (van Balsfoort, 2018). In 1960s, consumers were falling ill due to the herring worm (ibid.). Since the Middle Ages herring had been salted at sea for conservation (ibid.). However, this was insufficient to prevent the occurrence of the herring worm (ibid.). In 1968 the government decided that Dutch fishermen were obliged to freeze raw fish at minus 20 degrees for a period of at least 24 hours (van Balsfoort, 2018; Dutch Fisherman 1, 2018). As herring needed to be frozen, the concept of the Dutch herring started to change from fresh (salted) landings by a fresh fish trawler to a freezer-trawler that can freeze the fish at sea (ibid.). The stronger, more forward-looking fishing companies started to develop freezer

trawlers. The fishing companies who couldn't afford to develop this new standard gradually left the sector (ibid.).

The second phase of horizontal integration in the pelagic fisheries was in the period of herring stock depletion in the second half of the 1970s (van Balsfoort, 2018). At that time, the herring stock decreased for natural reasons (ibid.). The fisheries management system was not as well developed as we see now and was not able to react quickly enough (ibid.). Fisheries continued at unsustainable levels (ibid.). There were too many fishermen targeting and with this further decreasing an already depleted stock. The reduced earnings had socio-economic impacts (ibid.). In 1977, the EEC and Norway on advice by the International Council for the Exploration of the Sea (ICES) decided to close the North Sea for herring fisheries (ibid.). It was re-opened in 1983 (ibid.). The 6-year closure had a major impact on the Dutch herring sector (ibid.). To continue with fisheries, the Dutch pelagic industry had to find other fishing grounds farther away: Channel, Biscay, South and West of Ireland, and Scotland (ibid.). Freezer-trawlers able to fish and freeze at sea and stay away for weeks were needed for this (ibid.). Fishing on other fishing grounds also meant fishing for other species: mackerel, horse mackerel, whiting, blue whiting, silver smelt (ibid.). As a result, the closure of the North Sea herring fishery meant that companies with the necessary resources diversified their fishing portfolio (ibid.).

The closure of the North Sea herring fishery coincided with the negotiations among the member states of the EEC/EU regarding the Common Fisheries Policy (CFP) and shared fish stock allocation (van Balsfoort, 2018). Allocations were based on the average catches of the member states during the period 1973-1978 (ibid.). The result was a compromise for every stock on the percentage share of the member states in the quota of these stocks (ibid.). In their entirety, these allocation keys are called the 'relative stability' (ibid.). However, because the Dutch had been fishing in other waters for species other than herring, these new catch records resulted in quota shares for the Dutch pelagic fishermen for these other pelagic species (ibid.).

The third phase of integration took place after the CFP was implemented (van Balsfoort, 2018). The remaining Dutch companies active in the pelagic segment were so successful and entrepreneurial, that they also started looking in neighbouring countries for opportunities, entering the phase of international horizontal integration (ibid.). As noted above, Dutch pelagic fishing companies started to invest in Germany, France, the United Kingdom, Denmark, Lithuania, Spain and Portugal, among other European countries. These same companies also started fishing activities in Latin America and Africa (ibid.). Moreover, the large pelagic fishing companies also started to invest in the demersal sector, both domestically and internationally (ibid.). The drivers for further horizontal integration were access to quota and usage rights in order to guarantee supply to their customers, as well as portfolio diversification for their clients (van Balsfoort, 2018; Parlevliet, 2018). During this phase, the large fishing companies also started to invest in processing facilities, developing their vertical integration (ibid.). This necessitated further supply of raw materials. Vertical integration allowed Dutch companies to compete better with their large Norwegian counterparts, and has strengthened their position towards retailers (Parlevliet, 2018).

Horizontal integration also took place in the demersal segment, but less consolidation than in the pelagic segment (Dutch Fisherman 1, 2018). There are still approximately 100 enterprises operating in the Dutch demersal segment (ibid.) As noted above, pelagic fishing companies started to invest in the demersal segment. Additionally, demersal fishing companies also consolidated domestically and invested internationally, such as the de Boer family. Demersal fishermen started to invest in the United Kingdom to access quotas (Visser, 2018). As the demersal quotas in the Netherlands were not enough to meet their needs, they invested in the United Kingdom as enough quotas were still available there (ibid.). Presently

quotas in the United Kingdom are more limited though (ibid.). Dutch demersal companies also went to Belgium, Germany, Denmark, France, Sweden and Norway (ibid.). In France, investments were made in existing companies or joint ventures creating Dutch ownership (ibid.). In Germany, Dutch investments are mostly majority-owned companies (ibid.). In Belgium, Dutch investments take the form of Dutch fishermen (not companies) operating a Belgian company (ibid.). Vessels under Belgian flag should sell part of their catch in Belgium, while a share may also go to the Netherlands (Brouckaert, 2018). Vertical integration in the demersal segment was also driven by fishing companies investing in processing facilities. There is not a lot of informal horizontal integration in the Dutch pelagic fisheries in the form of quota swaps or leasing as the companies are large and can optimize their fishing plan and quotas (van Balsfoort, 2018; Dutch Fisherman 1, 2018). In terms of informal vertical integration, the large pelagic companies try to maintain their long-term client relationships as they are fully-integrated and have long histories (ibid.).

In the Dutch demersal fisheries, informal forms of horizontal integration take place in the form of quota swaps, renting, leasing, as well as 'quota parking' (Visser, 2018). As the relative stability key and national quotas are fixed, the only way to address quota issues easily is to make quota swaps at national level (ibid.).

Horizontal integration has had little impact on employment (van Balsfoort, 2018; Visser, 2018). Even with the fleet reductions, long-term unemployment was limited as crews found employment on other vessels or in other industries (Visser, 2018). All companies employ local crews on their local fleets (van Balsfoort, 2018). In the Netherlands, crew members are covered by the sector's Collective Labour Agreement (ibid.). The main problem is getting people to work in the fishing industry (ibid.). Horizontal integration has helped to stabilize the fisheries sector in the Netherlands (Visser, 2018). Only the most efficient and effective companies remained (ibid.).

19. POLAND

KEY FINDINGS

- **High** degree of **value adding** in **processing**, particularly of **imported raw materials**
- **Processing** segment **eight times more employees** than **fish catching** segment
- **Large fully-integrated groups** active in **Poland**
- **Foreign investment** in **Polish fisheries** segment

19.1. Composition of the Polish seafood sector

In 2015, Polish fishing companies generated € 49 million in landings income. Processing companies in Poland added € 2.6 billion in production revenues in 2016. This indicates that Poland's position in the seafood value chain lies more in processing than harvesting.

Poland had a € 247 million trade deficit in fish and fish products in 2016. Poland imported approximately € 2 billion in fish and fish products in 2016. 70% of these imports came from the EU. Poland's main import partners were Sweden (40%), Norway (10%) and Germany (9%).

Poland exported € 1.7 billion in fish and fish products in 2016. More than a quarter of all fish exports were to Germany. The second and third largest export partners were France (5%) and Italy (3%). 92% of all fish and fish product exports from Poland were destined for other EU member states.

In 2015, there were 873 registered commercial fishing vessels. These were registered to 733 enterprises. 86 fishing companies – 12% of all fishing enterprises – owned more than one vessel. 93% of all vessels were active (STECF, 2018).

The Polish fish catching segment employed 2,280 fte. The fish processing segment in Poland employed 16,569 fte. The high level of employment in the fish processing segment compared to the fish catching segment is also reflected in their respective revenues.

Table 63: Polish seafood sector key figures

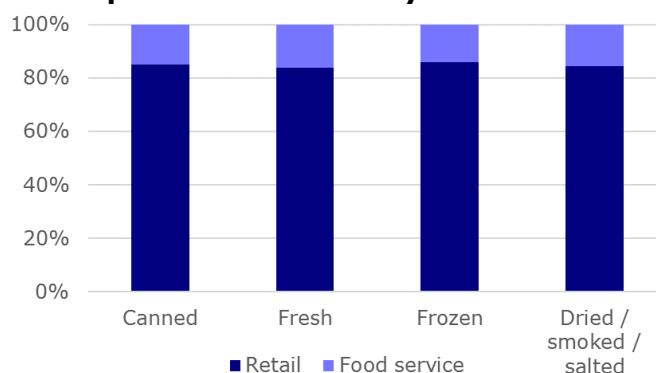
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	873	
	Average vessel tonnage per vessel (2015, GT)	39	
	Average vessel tonnage per enterprise (2015, GT)	46	
<i>Enterprises</i>	Number of fishing enterprises (2015)	733	
	Enterprises with more than one vessel (2015, number, % enterprises)	86	11.7%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	49	0.01%
	Average landing income per fte employed (2015, €)	21,370	
	Average landing income per vessel (2015, €)	55,811	
	Average landing income per enterprise (2015, €)	66,470	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	2,280	0.01%
	Average employment per vessel (2015, fte)	2.6	
	Average employment per enterprise (2015, fte)	3.1	

Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	2,612	0.61%
	Employment in the fish processing sector (2015, fte, % workforce)	16,569	0.10%
	Average processing production per fte employed (2015, €)	157,650	
Trade	Trade balance (2016, € mln, % GDP)	-247	0.06%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	1,710	0.40%
	1. Germany (2016, € mln, % export)	925	54%
	2. France (2016, € mln, % export)	132	8%
	3. United Kingdom (2016, € mln, % export)	99	6%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	1,957	0.46%
	1. Sweden (2016, € mln, % import)	787	40%
	2. Norway (2016, € mln, % import)	200	10%
	3. Germany (2016, € mln, % import)	177	9%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Half of the fish and fish products that are sold in the seafood market in Poland are sold as frozen. Dried/smoked/salted fish products account for approximately a quarter of all fish and fish products sold on the Polish market. Frozen and canned fish products account for 18% and 9%, respectively. 84% of all fish and fish products are sold through retailers, the remainder is sold in the food service industry (see Figure 88 for more detail).

Figure 88: Poland: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Approximately 55% of fresh fish is sold under retailers' own labels, and 40% is sold unbranded (see Table 64). With 95%, the majority of canned fish products are sold branded. Approximately two thirds of frozen fish and fish products are sold branded, 18% is sold unbranded, and 19% is sold under the retailers' own labels. Slightly more than three quarters of dried/smoked/salted fish products are sold branded, the remainder is sold with the retailers' own labels.

Table 64: Poland: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	5%	95%	63%	79%
Unbranded	40%		18%	
Own label	55%	5%	19%	21%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Stanpol is the most important player in the Polish fresh fish segment, accounting for a market share of approximately 12%, while Rybhand accounts for about 11% (FFT, 2018). In the frozen fish product sector, Abramczyk holds an important position with around 16%, as well as German Frosta with a share of approximately 15% (ibid.). In the canned fish product segment, Lisner (part of Theo Müller Group (Germany)) holds a market share of around 22%, while Graal has a share of about 17% (ibid.). Superfish, also part of Graal, is an important player in the dried/smoked/saled segment with a market share of approximately 25%, while Suempol has a share of around 22% (ibid.).

19.2. Producer organisations

There are eleven EU recognized producer organisations. Two of these represent fresh water fisheries. The other nine represent marine fisheries (see Table 65). The North Atlantic Producers Organisation represents the distant water fleet, fishing in the Atlantic and African waters. The other eight POs are regional POs, serving several fishing communities along the Baltic coast engaged in coastal and local small-scale fishing. Due to lack of data availability, the number of vessels and members is not provided.

Table 65: Poland: Recognized producer organizations

Producer's organisation	Segment
Pólnocnoatlantycka Organizacja Producentów (North Atlantic Producers Organisation)	Deep sea, high sea, other
Krajowa Izba Producentów Ryb (National Chamber of Fish Producers)	Coastal, local small-scale, other
Zrzeszenie Rybaków Morskich - Organizacja Producentów (Association of Sea Fishermen - Producers' Organisation)	Coastal, local small-scale, other
Organizacja Producentów Rybnych Władysławowo (Fish Producer's Organisation Władysławowo)	Coastal, local small-scale, other
Kolobrzaska Grupa Producentów Ryb (Kolobrzaska Fish Producer's Group)	Coastal, local small-scale, other
Organizacja Producentów Ryb Bałtyk (Baltic Fish Producers' Organisation)	Local small-scale
Organizacja Rybaków Łódziowych (Fishermen Organisation Łódziowych)	Coastal, local small-scale
Darłowska Grupa Producentów Ryb i Armatorów Łodzi Rybackich Spółka (Darłowska Group of Fish Producers and Shipowners of the Fishing Boat Company)	Local small-scale
Zachodniopomorska Grupa Producentów Ryb (Zachodniopomorska Fish Producers Group)	Coastal, local small-scale

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission.

19.3. Company analysis

This section describes the company structures of the six largest fishing companies in Poland. All these companies are engaged in the pelagic sector, since Polish fisheries in the Baltic Sea target primarily pelagic species.

19.3.1. Arctic Navigations and Atlantex

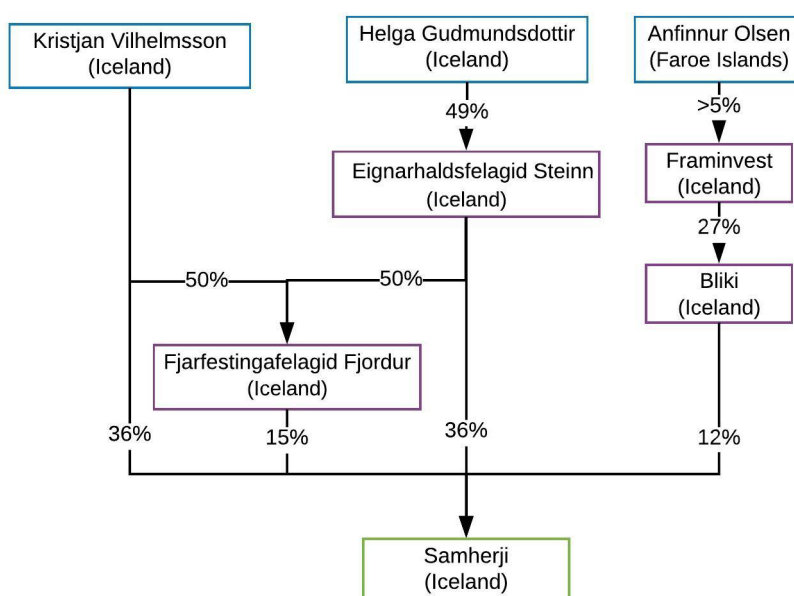
Samherji operates three pelagic freezer-tractors in Poland. The vessels are owned by two fishing companies that are members of the North Atlantic Producer Organisation – Arctic Navigations and Atlantex. These companies catch fish in Atlantic, African and Baltic waters. Arctic Navigations operates the Polonus (GDY-36), while Atlantex operates the Alina (GDY-147) and the Saga (GDY-150) (PAOP, 2018). Both Atlantex and Arctic Navigations are majority owned by Icelandic company Samherji (Orbis, 2018v).

Samherji is a very large, vertically integrated fish company. In 2016, the company had an operating revenue of € 636 million, an increase from the € 571 million generated in the previous year. The company held total assets of € 927 million in 2016, an increase from a year earlier when it held total assets worth € 837 million, with 1,554 employees (Orbis, 2018v). There are four current shareholders (Orbis, 2018ad). The owners of Samherji are shown in Figure 89. As Samherji is a large international fishing conglomerate, Figure 90 presents the part of the company structure that is related to its activities in Poland.

Samherji owns fishing companies in Germany (see section 11.3.1), the United Kingdom, Spain, the Faroe Islands, France (see section 10.3.4), Latvia, and Portugal, among others. In most of the countries the company is vertically integrated with fish processing, coldstores and distribution. Samherji markets the Icefresh Seafoods brand (Orbis, 2018v).

Samherji is also engaged in a range of other business sectors, in general through minority participations. However, most of its activities are related to seafood. In total, Samherji has investments in 632 companies (Orbis, 2018v).

Figure 89: Samherji company structure



Source: Samherji (2018a), "History", online: <http://www.samherji.is/en/the-company/history>, viewed in June 2018; Samskip (2018), "About us", online: <https://www.samskip.com/who-we-are/about-us/>, viewed in July 2018; Orbis (2018), Ownership report Samherji, viewed in June 2018; Orbis (2018ae), "Ownership report Saebol fjarfestingafelag ehf", viewed in June 2018.

Samherji's subsidiaries in Poland are also vertically integrated. Atlantex is 100% owned by Samherji, through the Icelandic company Saebol fjarfestingafelag and the Cypriot company Esja Shipping (Orbis, 2018v). In 2015, the company had an operating revenue of € 34 million, showing a slight decrease from a year earlier when its operating revenue reached € 31 million. In 2015, Atlantex held total assets of € 36 million, an increase by € 7 million since 2014 (Orbis, 2018ad). Through the producer's organisation, Atlantex is a co-owner of a coldstore facility and a logistics company.

Arctic Navigations is a majority-owned subsidiary of Samherji (Orbis, 2018ae). Arctic Navigations operates the freezer-trawler Polonus (GDY-36). In 2016, the company had an operating revenue of € 12.6 million, a slight increase from the € 12.8 million reported in the previous year. The company held total assets of € 17 million in 2016, an increase by € 1 million from the previous year (Orbis, 2018ac).

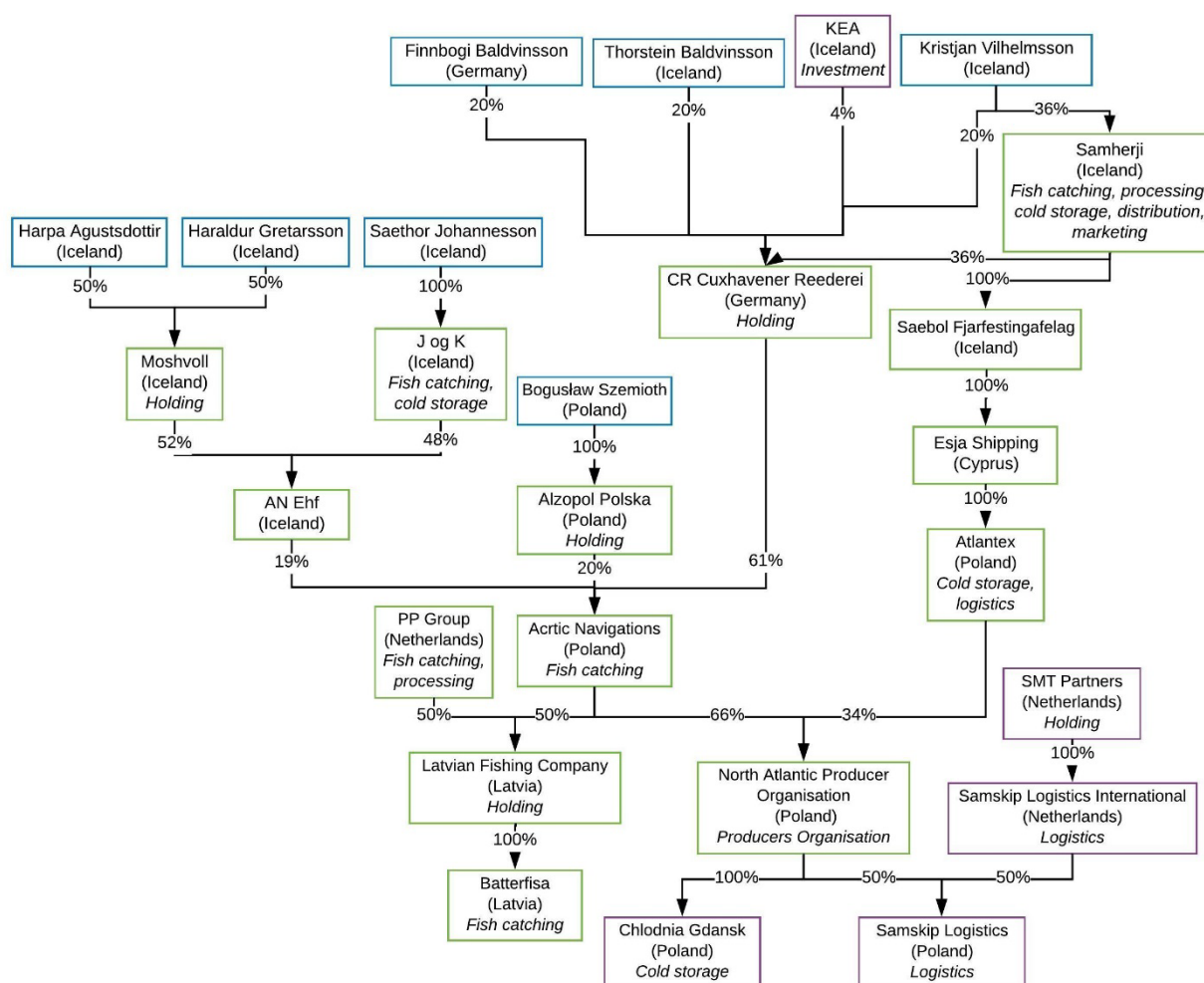
The shareholders of Arctic Navigations are CR Cuxhavener Reederei, AN Ehf, and Alzopol Polska:

- CR Cuxhavener (Germany) is owned by Samherji, KEA (Iceland), and three persons that are related to Samherji (Orbis, 2018af) (see Figure 51).
- AN Ehf (Iceland) is ultimately owned by Moshvoll Ehf (Iceland) and J og K Ehf (Orbis, 2018ah). Moshvoll is a holding company (RSK, 2018a), while J og K Ehf is engaged in fishing activities and coldstores (RSK, 2018b). Relations of Moshvoll and J og K with Samherji are not clear, but the neighbouring addresses may indicate that a relationship exists. In 2016, Moshvoll had total assets of USD 2.8 million (2015: USD 2.1 million); (Orbis, 2018ai).
- Alzopol Polska is 100% owned by Bogusław Szemieth, who is also chairs the North Atlantic Producer Organisation (Krajowy Rejestr Sądowy, 2018b).

Latvian Fishing Company is owned by Arctic Navigations and by German Mecklenburger Hochsee Fischerei, the latter being a subsidiary of PP Group (see section 18.3.1). Latvian Fishing Company operates, through the fisheries company Batterfisa in Latvia, the trawler Dorado LVL-2156 (the former Polonus); (Orbis, 2018ae).

Arctic Navigations owns 66% of the North Atlantic Producer Organisation, the other part being owned by Atlantex. This makes Icelandic company Samherji the majority-owner of the Polish producer's organisation.

The North Atlantic Producer Organisation owns two companies: the coldstore Chlodina Gdansk (Mojepanstwo, 2018a) and 50% of Samskip Logistics (Orbis, 2018ae). The other 50% is owned by Samskip Logistics International (Netherlands), which is ultimately owned by SMT Partners (Netherlands) (KvK, 2018x). The ownership details of SMT Partners are not revealed by the Dutch company register. Samskip is headquartered in the Netherlands but was originally founded in Iceland in 1990 (Samskip, 2018).

Figure 90: Samherji Poland operations company structure

Source: Orbis (2018), Ownership report Samherji, viewed in June 2018; Samherji (2018a), "History", online: <http://www.samherji.is/en/the-company/history>, viewed in June 2018; Krajowy Rejestr Sądowy (2018b), "Company details Alzopol Polska", online: <https://mojepanstwo.pl/alzopol-polska>, viewed on 28 June 2018.

19.3.2. Gadus

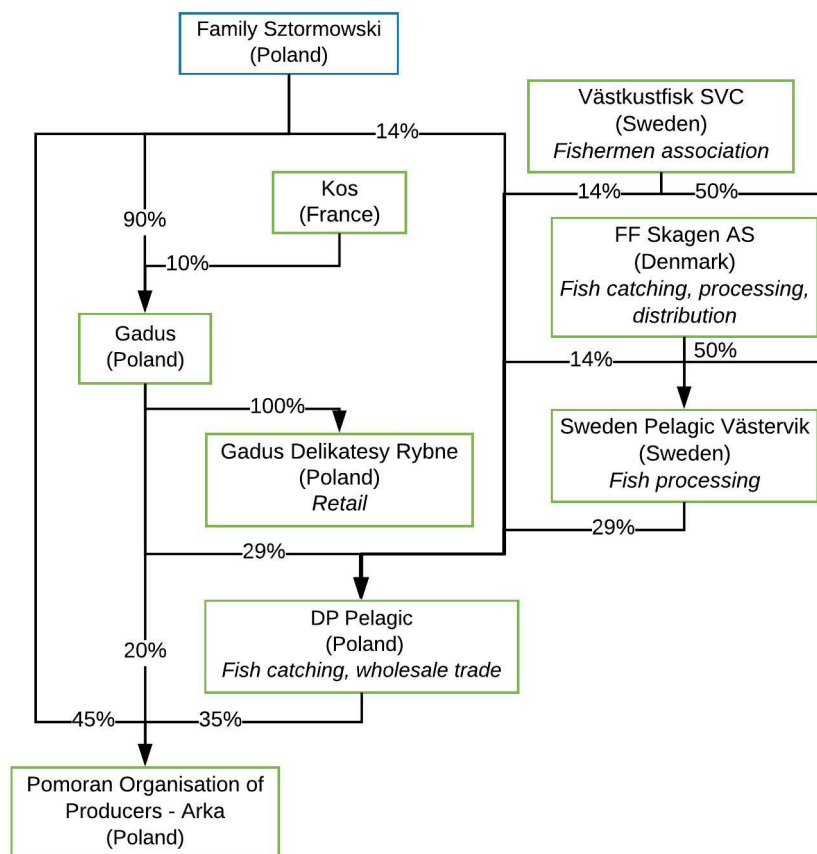
Gadus is a vertically integrated pelagic fisheries company that operates 16 fishing vessels, a transport company, processing facilities and a chain of retail shops throughout Poland (Gadus, 2018). The company is majority-owned by the Sztormowski family, fishermen from Gdynia. The French company Kos holds 10% of the shares (Orbis, 2018ag).

In 2015, Gadus had an operating revenue of € 45 million, up from € 27 million a year earlier. The company held total assets of € 21 million in 2015, an increase by € 5 million from the previous year (Orbis, 2018w).

Figure 91 presents the company structure of Gadus. DP Pelagic operates one fishing vessel, the WŁA-139, and is a seafood wholesale trader in Gdynia. DP Pelagic is owned by the Sztormowski family (including indirectly via Gadus) and by three Swedish companies: Västkustfisk, FF Skagen, and (via their joint-venture) Sweden Pelagic Västervik (Mojepanstwo, 2018f). In 2016, DP Pelagic generated a turnover of € 272,000, a decrease from the € 286,000 generated in the previous year. DP Pelagic held total assets of € 2.6 million in 2016, a decrease by 0.1 million from the previous year (Orbis, 2018ag).

Pomorkso Organizacja Producentow Arka (Pomeran Organisation of Producers – Arka) is not an official producer organisation. It is a company with three shareholders: the Sztormowski family, Gadus and DP Pelagic (Orbis, 2018ag).

Figure 91: Gadus company structure



Source: Orbis (2018, June), "Ownership report: Gadus", viewed in June 2018; Krajowy Rejestr Sądowy (2018a), "Company details Pomorska organizacja producentow Arka", online: <https://mojepanstwo.pl/pomorska-organizacja-producentow-arka>, viewed on 26 June 2018; Orbis (2018, July), "Ownership report: DP Pelagic", viewed in July 2018; Mojepanstwo (2018f), "KRS Registration DP Pelagic", online: <https://mojepanstwo.pl/dp-pelagic>, viewed in July 2018.

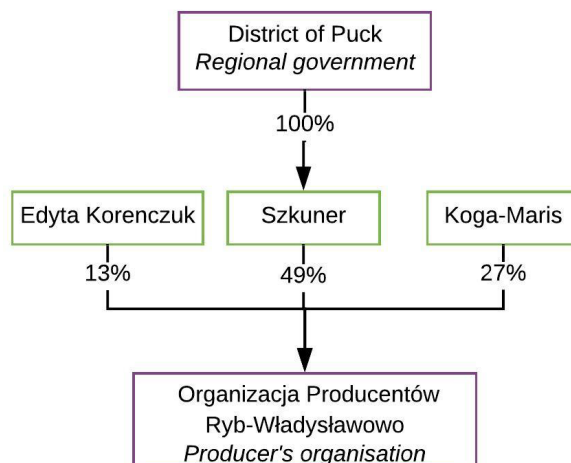
The above description has shown that Gadus is both vertically and horizontally integrated. Its large fleet of vessels is an indication of domestic horizontal integration. Its activities throughout the seafood value chain – from fish catching to retail – are an indication of its vertical integration.

19.3.3. Szkuner

Szkuner owns five fishing vessels, all over 26 metres long and with main engine powers of 420 kW. Szkuner operates a shipyard, a cold store, and processes fish in the harbour town of Władysławowo. The main species caught by the fleet are sprats, herring and cod. The company is state-owned by the District of Puck (Szkuner, 2018). In 2016, the company had an operating revenue of € 6.5 million, up from € 5.2 million in the previous year (Orbis, 2018ac). The company held total assets of € 14.6 million in 2016, down from € 16 million in 2015 (ibid.).

As shown in Figure 92, Szkuner holds a 49% share in the producer organisation Organizacja Producentów Ryb-Władysławowo (see Figure 92). The other shares are held by Koga-Maris (see section 19.3.4) and vessel-owner Edyta Korenczuk (Orbis, 2018s).

Figure 92: Szkuner company structure



Source: Orbis (2018, July), "Ownership report: Organizacja Producentów Ryb-Władysławowo", viewed in July 2018.

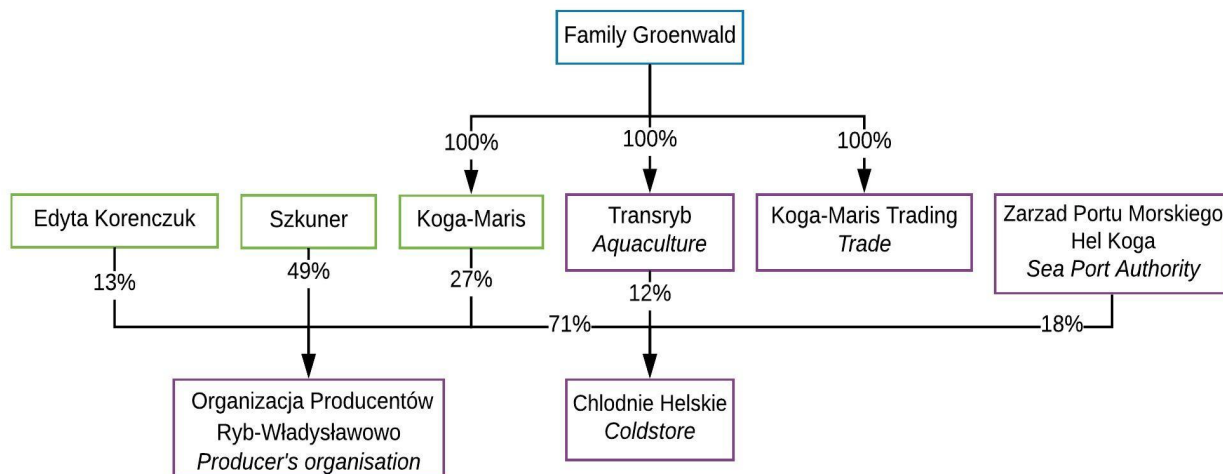
The above analyses shows that Szkuner is both vertically and horizontally integrated. It has engaged in horizontal integration through the expansion of its fleet with in Poland. The companies processing activities and cold store are indications of its vertical integration.

19.3.4. Koga-Maris

Koga-Maris operates four fishing vessels from Hel harbour (Orbis, 2018aa). In 2016, Koga-Maris had an operating revenue of € 4.3 million, an increase from the € 3.7 million generated in the previous year. The company held total assets of € 6.2 million in 2016, a decrease by € 0.2 million in the previous year (Orbis, 2018aa).

Koga Maris is owned by the Groenwald family (see Figure 93). The family also owns a trading company, an aquaculture company, and a cold store. Koga-Maris owns 27% of producer organisation Organizacja Producentów Rybnych Władysławowo. The coldstore is co-owned by the Sea Port Authority of Hel Koga, a department of the Municipality of Hel City.

Figure 93: Koga-Maris company structure



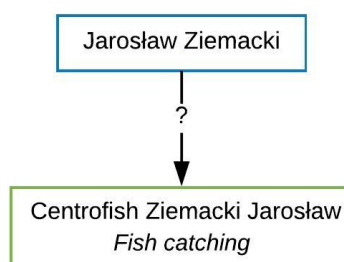
Source: Orbis (2018, July), "Ownership report: Organizacja Producentów Ryb-Władysławowo", viewed in July 2018; Mojepanstwo (2018b), "KRS Registration Koga-Maris", online: <https://mojepanstwo.pl/koga-maris> viewed in July 2018; Mojepanstwo (2018c), "KRS Registration Chłodnie Helskie", online: <https://mojepanstwo.pl/chlodnie-helskie>, viewed in July 2018.

The above description shows that Koga-Maris has engaged in horizontal integration through the expansion of its fleet. Moreover, its investments in aquaculture can also be considered a form of horizontal integration. The company has also engaged in limited vertical integration through its cold store facilities and trading company.

19.3.5. Centrofish ZiemackiJarosław

Centrofish ZiemackiJarosław owns five fishing vessels. Centrofish ZiemackiJarosław's vessels target cod as well as other species (MSC, 2014). Centrofish ZiemackiJarosław is a member of the main board of the Zrzeszenie Rybaków Morskich (Association of Sea Fisherman), the largest producer organisation in Poland (Mojepanstwo, 2018d).

Figure 94: Jarosław Ziemacki company structure



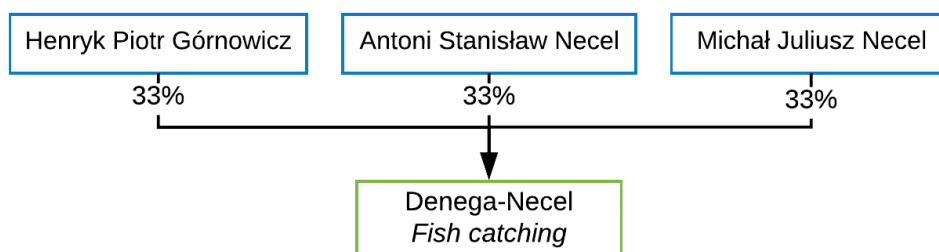
Source: PanoramaFirm (2018), "1. Centrowtór Ziemacki Jarosław 2. Centrofish Ziemacki Jarosław", online: https://panoramafirm.pl/pomorskie,,gda%C5%84sk,pomorska,43/1._centrowtor_ziemacki_jaroslaw_2._centrofish_ziemacki_jaroslaw-suxsc_fc.html, viewed in July 2018.

The fact that Centrofish Ziemacki Jarosław operates several vessels is a sign of horizontal integration. The company has, however, not engaged in vertical integration.

19.3.6. Denega-Necel

Denega-Necel (Figure 95) is a partnership of three fishermen (Mojepanstwo, 2018e). The partnership owns three fishing vessels. Denega-Necel is a member of the Zrzeszenie Rybaków Morskich producer organisation (MSC, 2014). Operating revenue and assets are unknown. The partnership had 35 employees in 2013. The partnership does not have any subsidiaries (Orbis, 2018z).

Figure 95: Denega-Necel company structure



Source: Mojepanstwo (2018e), "KRS Registration Denega-Necel", online: <https://mojepanstwo.pl/denega-necel>, viewed on 5 July 2018; Orbis (2018z), "Summary report Denega-Necel", viewed in July 2018.

The above description shows that Denega-Necel has engaged in some horizontal integration as the three fishermen pooled together in creating the joint venture partnership with three vessels. The company has, however, not engaged in vertical integration.

19.4. Integration

The analysis of Polish fish catching companies has shown that three of the six companies have engaged in vertical integration. One of these is part of a fully-integrated, international fish conglomerate based in Iceland. One of the other two has received investments from Swedish fishermen. The last of these integrated operations is fully-owned by Polish fishermen. All the analysed enterprises have engaged in horizontal integration through the expansion of their fleets. The fleet expansion is limited to Poland.

It is noteworthy that Poland in comparison to other EU countries has a high processing revenue (see 19.1), which seems to be based largely on imports. This research did not identify vertical integration carried out by mid-/downstream companies investing in the upstream fish catching segment, or the vice versa.

20. PORTUGAL

KEY FINDINGS

- Blue economy, i.e. the use of the sea and its resources, accounts for 3% of GDP
- 95% of fishing enterprises single vessel operations
- Fish product imports more than twice the value of exports
- Structural **vertical integration** is **evident**
- **Limited** structural **horizontal** integration

20.1. Composition of Portuguese seafood sector

Although the Portuguese fisheries industry only makes a limited contribution to GDP, the sector is of great socioeconomic significance to the country as a whole, and particularly to its coastal areas (European Maritime and Fisheries Fund, 2016, p. 1).

The blue economy accounts for approximately 3% of Portuguese GDP (European Maritime and Fisheries Fund, 2016, p. 1).

The per capita consumption of fish products in Portugal is the highest in Europe at 56.5 kilograms. It is more than twice the average EU per capita consumption of 22.7 kilograms (European Commission: DG Fisheries and Maritime Affairs, 2007, p. 1).

Portuguese fishing companies generated € 356 million in landings income in 2015. Processing companies added a further € 1.2 billion in production revenue.

In 2016, Portugal had a trade deficit in fish and fish products of € 958 million. It imported € 1.9 billion in fish products. 71% of these imports originated from other EU countries. Portugal's largest import partner was Spain, accounting for 38% of all fish imports. Sweden (12%) and the Netherlands (10%) were also important import partners.

Portugal exported approximately € 940 million in fish and fish products in 2016 (Table 66). 82% of these exports were destined for other EU countries. As with imports, Spain was also a major export destination, accounting for more than half of total exports. Other important export partners were Italy (13%) and France (10%).

There were 8,205 registered commercial fishing vessels in Portugal in 2015. These were owned by 3,658 fishing enterprises. 175 fishing companies – 4.8% of all fishing companies – operated more than one vessel. In 2017, only 47% of the registered fleet was considered active (STECF, 2018).

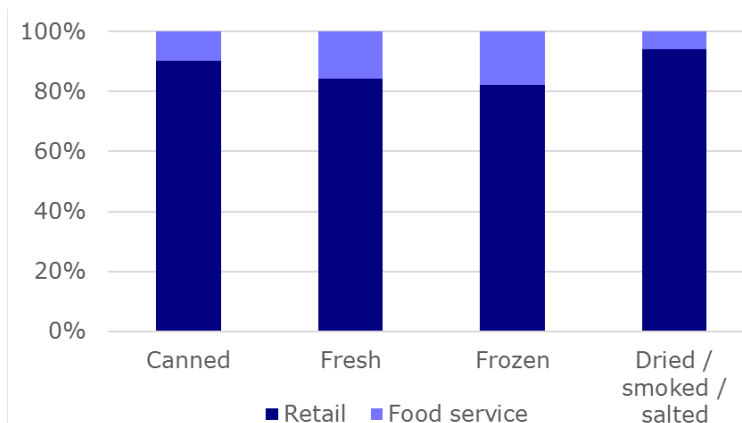
Although the fish processing segment generated significantly higher production revenues, it employed a smaller workforce than the fish catching segment. In 2015, the fish processing segment employed 6,913 fte, while the fish catching segment employed 8,130 fte.

Table 66: Portuguese seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	8,205	
	Average vessel tonnage per vessel (2015, GT)	12	
	Average vessel tonnage per enterprise (2015, GT)	27	
<i>Enterprises</i>	Number of fishing enterprises (2015)	3,658	
	Enterprises with more than one vessel (2015, number, % enterprises)	175	4.8%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	356	0.20%
	Average landing income per fte employed (2015, €)	43,774	
	Average landing income per vessel (2015, €)	43,374	
	Average landing income per enterprise (2015, €)	97,289	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	8,130	0.19%
	Average employment per vessel (2015, fte)	1.0	
	Average employment per enterprise (2015, fte)	2.2	
Processing	Processing production (2016, € mln, % GDP)	1,215	0.66%
	Employment in the fish processing sector (2015, fte, % workforce)	6,913	0.16%
	Average processing production per fte employed (2015, €)	175,741	
Trade	Trade balance (2016, € mln, % GDP)	-958	0.52%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	940	0.51%
	1. Spain (2016, € mln, % export)	481	51%
	2. Italy (2016, € mln, % export)	122	13%
	3. France (2016, € mln, % export)	95	10%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	1,899	1.03%
	1. Spain (2016, € mln, % import)	726	38%
	2. Sweden (2016, € mln, % import)	226	12%
	3. Netherlands (2016, € mln, % import)	181	10%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

In Portugal, approximately three quarters of the fish and fish products that enter the market are sold as fresh. Only 5% is sold as canned, 12% is sold as frozen, and the remaining 10% is sold as dried/smoked/salted. 85% of the fish and fish products are sold through retail outlets, the remainder is sold in the food service industry. Just over 80% of fresh and frozen fish is sold through retailers, and over 95% of the canned and dried/smoked/salted fish products are sold through retailers (Figure 96).

Figure 96: Portugal: Fish product end industry

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In Portugal, almost 90% of the fresh fish is sold unbranded, the remainder is sold branded (see Table 67). Approximately 90% of canned and frozen fish and fish products are sold as branded, the remainder is sold with retailers' own labels.

Table 67: Portugal: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	11%	91%	88%	33%
Unbranded	89%			45%
Own label		10%	12%	22%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In the fresh fish segments in Portugal, FRIP Group (Pesca Miradouro) and Pescanova (Spain, see section 23.3.3) are notable players with a market share of around 5% each (FFT, 2018). In the frozen segment, Pescanova accounts for a share of about 33%, while Nomad UK's Iglo accounts for 22% (ibid.). In the canned product segment, Ramirez has a share of about 27%, while Cofaco accounts for approximately 22% (ibid.). In the dried/smoked/salted segment, Martiko is the leading player with a share of around 27% (ibid.).

20.2. Producer organisations

Table 68 provides an overview of the producer organisations in Portugal that are currently recognized by the European Union authorities. Due to lack of data availability, the number of vessels and members is not provided.

Table 68: Portugal: Recognized producer organisations

Producer organisation	Segment
Associação da Pesca Artesanal da Região de Aveiro (APARA) (OP-20)	Other
Associação de Produtores de Atum e Similares dos Açores (APASA) (OP-14)	Other
Associação Armalgarve Polvo (Quateira)	Coastal, local small-scale
Cooperativa de Pesca de Setúbal, Sesimbra e Sines, C.R.L. (SESIBAL) (OP-10)	Local small-scale

Cooperativa de Pesca do Arquipélago da Madeira (COOPESCAMADEIRA) (OP-2)	Coastal, local small-scale
Cooperativa de Pesca Geral do Centro (OPCENTRO) (OP-8)	Coastal, local small-scale
Cooperativa de Produtores de Peixe do Centro Litoral, C.R.L. (CENTRO LITORAL (OP-18)	Local small-scale
Cooperativa de Produtores de Peixe, C.R.L. (VIANAPESCA) (OP-12)	Local small-scale
Cooperativa de produtores de peixe do Norte (PROPEIXE) (OP-6)	Local small-scale
Cooperativa dos Armadores da Pesca Artesanal, C.R.L. (CAPA) (OP-13)	Local small-scale
Cooperativa dos Armadores de Pesca do Barlavento, C.R.L. (BARLAPESCAS) (OP-7)	Coastal, local small-scale
Organização de Produtores da Pesca, C.R.L. (ARTESANALPESCA) (OP-11)	Coastal, local small-scale
Organização de Produtores de Pesca do Algarve, C.R.L. (OLHÃOPESCA) (OP-19)	Local small-scale
Organização de Produtores de Pexsca Artesanal (APROPESCA) (OP-9)	Coastal, local small-scale
Pesca de Bivalves, CRL (BIVALMAR) (OP-21)	Other

Source: European Commission (2017, December), List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector, Brussels: European Commission.

20.3. Company analysis

The Department for Natural Resources, Security and Maritime (DGRM) of the Portuguese Ministry of Agriculture, Rural Development and the Sea lacked company-specific catch and quota data. Data were available regarding approved factory ships and freezer vessels. An analysis of the corporate structures was carried out for seven of the nine companies with more than one approved factory ship or freezer vessel. There were insufficient data regarding the remaining two companies to determine their corporate structures.

Table 69: Portugal: Top vessel owners

Parent company	Vessel type	Number of vessels
Largispot	Factory ship	3
	Freezer vessel	2
Aquavita	Freezer vessel	3
Pedro França	Factory ship	3
Pescarade	Freezer vessel	2
Hydrex	Factory ship	2
Anfersa Pescas	Freezer vessel	2
Pesquera Downey	Freezer vessel	2

Source: Department for Natural Resources, Security and Maritime (2016, January), *Navios-Fábrica Aprovados*; Department for Natural Resources, Security and Maritime (2016, January), *Navios Congeladores Aprovados*.

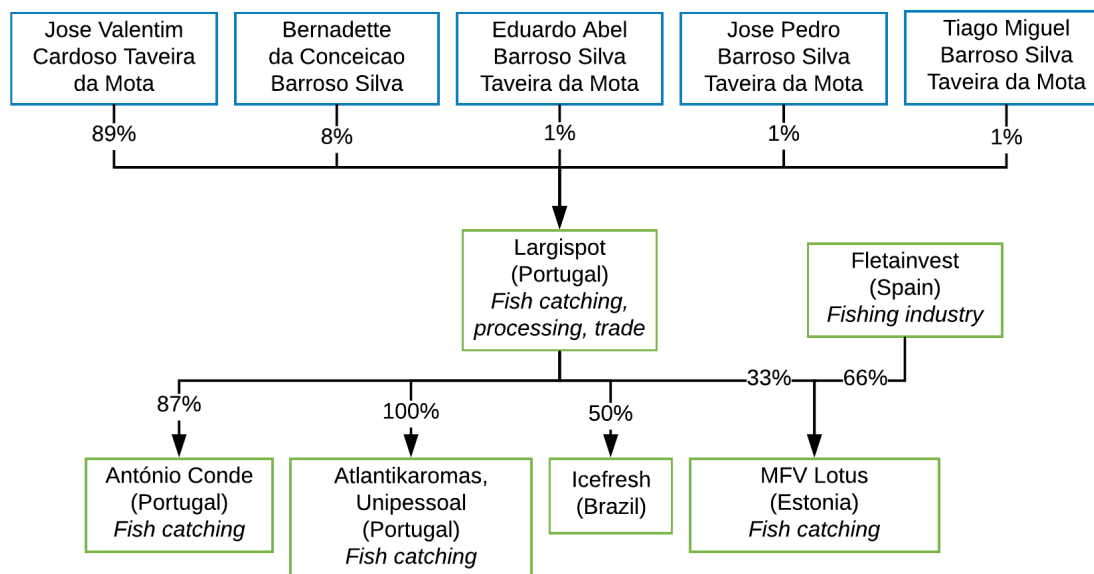
20.3.1. Largispot

As Table 69 shows, Largispot has three approved factory ships and two freezer vessels. It is possible that Largispot also has other, smaller, fish catching vessels. Figure 26 provides an overview of the Largispot company structure. It shows that Largispot has two fish catching subsidiaries in Portugal, António Conde and Atlantikaromas. It further has a subsidiary in

Brazil, and an associate fish company in Estonia whose ultimate parent is a Spanish fishing industry company, Fletainvest.

In 2014 Largispot generated a revenue of € 20 million, down from € 33 million in 2013. In 2014, the company had total assets of € 18 million. 53% of Largispot's products were exported in 2014, the remainder was destined for the domestic market (Largispot, n.d.).

Figure 97: Largispot company structure



Source: Orbis (2016), "Largispot", viewed in April 2016; Largispot (n.d.), "Home", online: <http://largispot.com/en/>, viewed in April 2016; MFV Lootus (2015), *Annual Report 2014*, p. 18.

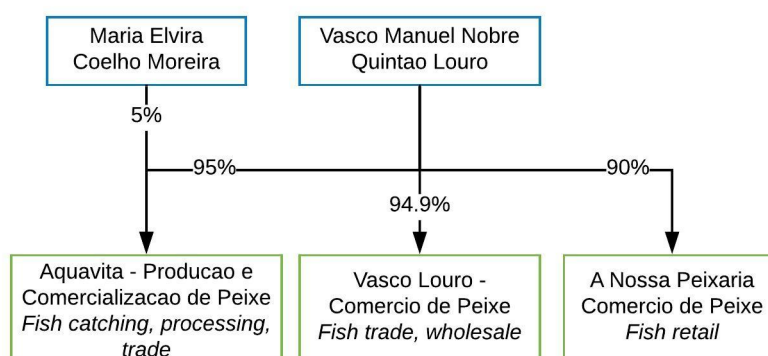
Largispot shows evidence of both vertical and horizontal integration. It has investments in both upstream fish catching, midstream processing and downstream trade. Horizontal integration is seen in its investments in fish catching companies both domestically as well as in other countries. Such investments are likely to be driven, at least in part, by the motivation to obtain access to quota.

20.3.2. Aquavita

As Table 69 shows, Aquavita has three approved freezer vessels. It is possible that Aquavita also has other, smaller, fish catching vessels. Figure 27 provides an overview of the Aquavita company structure. It shows that Aquavita does not have subsidiary companies. However, the company owners also have investments in two related companies. These companies are active in the fish trade, and in wholesale and retail activities.

No information on Aquavita's turnover could be found. The company had total assets of €890,000 in 2014.

Figure 98: Aquavita company structure



Source: Orbis (2016), “Aquavita – Producao e Comercializacao de Peixe”, viewed in April 2016.

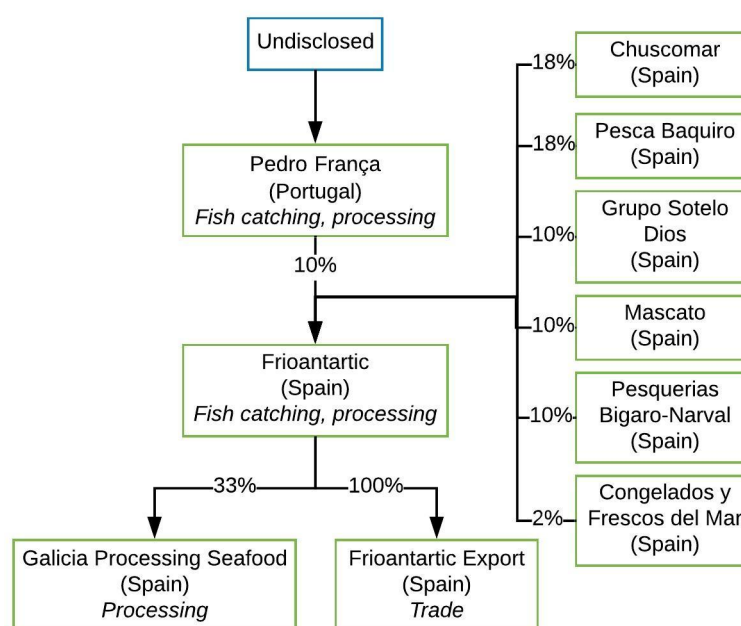
The company structure of Aquavita does not show evidence of vertical nor horizontal integration. However, companies by the same owners are active in various stages in the fisheries supply chain. This indicates that the owners of Aquavita employ a vertical integration business strategy.

20.3.3. Pedro França

As Table 69 shows, Pedro França has three approved factory ships. It is possible that Pedro França also has other, smaller, fish catching vessels not detailed in the DGRM data. Figure 99 provides an overview of the Pedro França company structure. The company has a minority stake in the Spanish fish catching and processing company Frioantartic. Six Spanish companies hold the remaining stakes in Frioantartic.

In 2014, Pedro França generated a turnover of € 12 million, with similar levels in 2013. The company had total assets of € 13 million in 2014 (Orbis, 2016).

Figure 99: Pedro França company structure



Source: Orbis (2016), “Pedro França, S.A”, viewed in April 2016; Orbis (2016), “Frioantartic SA”, viewed in April 2016.

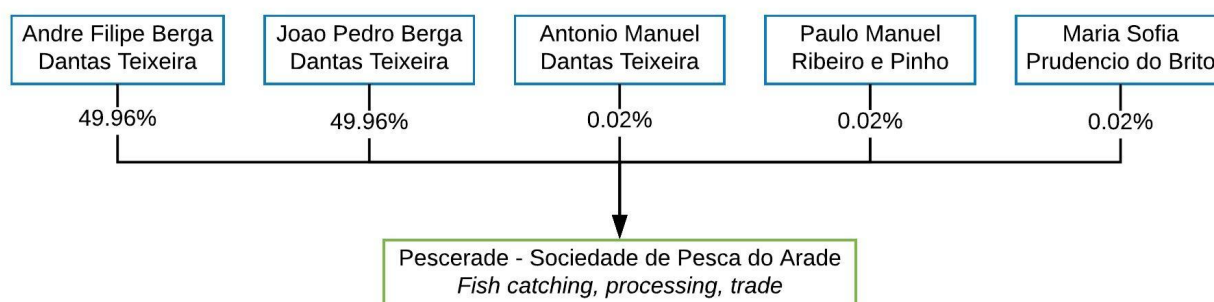
Pedro França's company structure indicates a degree of both vertical and horizontal integration. Vertical integration is found in the investments throughout the fish product supply chain, particularly in catching, processing and trade. Horizontal integration is evidenced by the company's investments in Spanish Frioantartic. This indicates a desire to access both quotas as well as extra processing and distribution channels.

20.3.4. Pescarade

As Table 69 shows, Pescarade has two approved freezer vessels. It is possible that Pescarade also has other, smaller, fishing vessels not detailed in the DGRM data. Figure 100 provides an overview of the Pescarade company structure. It shows that Pescarade is a family-owned, fully-integrated fishing company. It does not have any identified subsidiaries or affiliates.

The company generated a turnover of € 3 million in 2014, down from € 3.5 million in 2013. In 2014, Pescarade had total assets of € 6.7 million (Orbis, 2016).

Figure 100: Pescarade company structure



Source: Orbis (2016), "Pescarade – Sociedade de Pesca do Arade", viewed in April 2016.

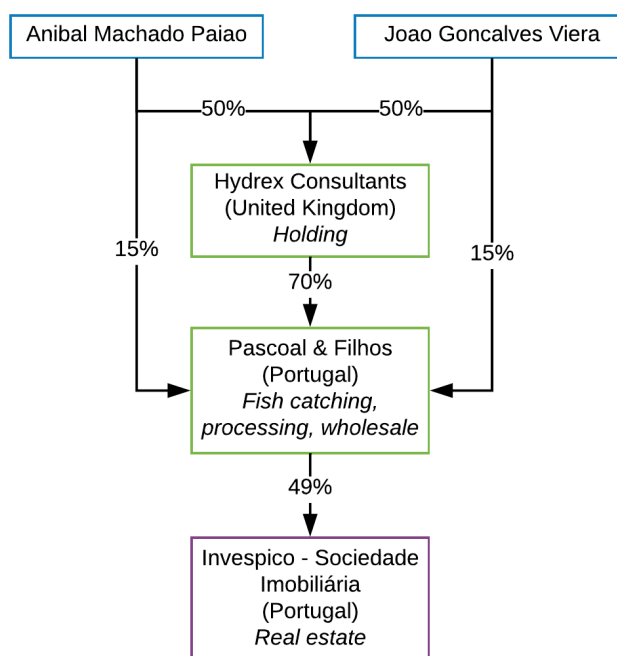
Pescarade shows evidence of vertical integration. Based on the company's business activities, Pescarade is a fully-integrated fisheries company.

20.3.5. Hydrex

As Table 69 shows, Hydrex has two approved factory ships. It is possible that Hydrex and its subsidiaries also own other, smaller fishing vessels not detailed in the DGRM data. Figure 101 provides an overview of Hydrex's company structure. The company is the majority shareholder of Pascoal & Filhos. The owners of Hydrex also directly own minority shares in Pascoal & Filhos. The subsidiary's main activities are in the integrated fisheries industry, including fish catching, processing and wholesale. Pascoal & Filhos also owns one affiliate engaged in real estate.

In 2014, Pascoal & Filhos generated revenue of € 49 million, down from € 60 million in the previous year. The company had total assets of € 78 million in 2014 (Orbis, 2016).

Figure 101: Hydrex company structure



Source: Orbis (2016), "Hydrex Consultants Limited", viewed in April 2016; Orbis, (2016) "Pascoal & Filhos, S.A", viewed in April 2016.

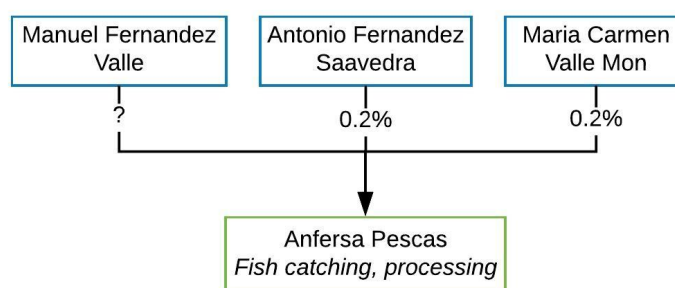
The Hydrex company structure indicates vertical integration as its subsidiary Pascoal & Filhos is a fully-integrated fisheries company.

20.3.6. Anfersca Pesca

As Table 69 shows, Anfersa Pescas has two approved freezer vessels. It is possible that the company also owns smaller fishing vessels not detailed in the DGRM data. Figure 102 provides an overview of Anfersa Pescas' company structure. It shows that the company has both fish catching and processing activities.

Anfersa Pescas generated revenue of € 1 million in 2014, up from € 733,000 in 2013. In 2014 the company had total assets of € 716,000 (Orbis, 2016k).

Figure 102: Anfersca Pesca company structure



Source: Orbis, "Anfersa Pescas", viewed in April 2016.

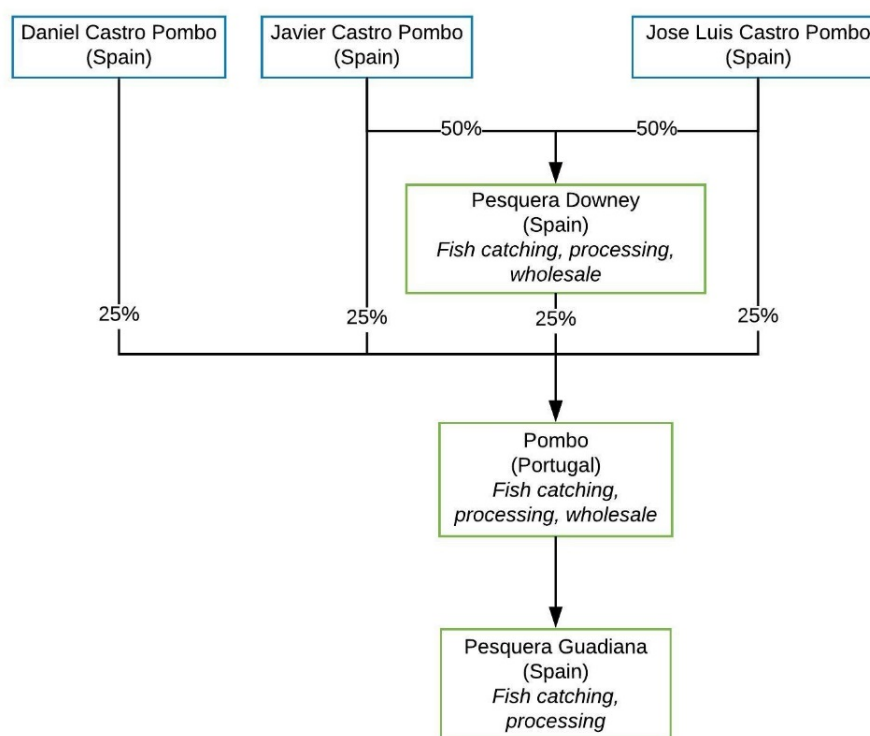
Anfersa Pescas shows evidence of a limited degree of vertical integration through its business activities in both fish catching and processing.

20.3.7. Pesquera Downey

Table 69 shows that Pesquera Downey has two approved freezer vessels. It is possible that the company also owns smaller fishing vessels not detailed in the DGRM data. Figure 103 provides an overview of Pesquera Downey's company structure. Its Spanish company has a significant investment in the Portuguese fishing industry through Pombo, under which the freezer vessels in Portugal are registered. The owners of Pesquera Downey also have direct ownership stakes in Pombo. Pesquera Downey further has a fish catching and processing subsidiary in Spain.

In 2014, Pesquera Downey generated revenue of € 1.3 million, with similar levels in 2013. In 2014, the company had total assets of € 3 million (Orbis, 2016).

Figure 103: Pesquera Downey company structure



Source: Orbis (2016), "Pombo", viewed in April 2016; Orbis (2016), "Pesquera Downey", viewed in April 2016; Orbis (2016), "Pesquera Guadiana", viewed in April 2016.

The Pesquera Downey company structure shows evidence of both vertical and horizontal integration. Vertical integration is found in the fact that the company has activities in fish catching, processing and wholesale. Horizontal integration is found in the investments in fish catching companies in both Portugal and Spain. This is likely motivated by the desire to access both quotas and processing facilities.

20.4. Integration

The analysed fish catching companies active in Portugal are vertically integrated. This is probably due in part to selection bias, as the only available and reliable list of fishing companies active in Portugal with an indicator of size was the DGRM list of approved freezer vessels and factory ships. Freezer vessels and factory ships are mostly used by integrated companies, as part of the processing is conducted on-board.

Several the analysed companies also show evidence of horizontal integration. Only one, Largispot, had investments in more than one fish catching company in Portugal. Other companies that showed evidence of horizontal integration were either owned by Spanish companies or had investments in Spanish companies. This shows the close ties between the fisheries industries in both these countries, as reflected also in the bilateral trade relations (see section 23.1). There does not seem to be a strong motivation to increase quota through investments in other Portuguese fishing companies, or fishing companies in other countries. This seems counter intuitive given the situation of fish stocks in Portuguese waters.

21. ROMANIA

KEY FINDINGS

- Very **small fisheries** segment
- **Small-scale** and **part-time** nature of the **fishing** industry
- Fish **processing significant segment**, driven by imports
- **Some horizontal** integration
- **Very limited vertical** integration due to **cost** and **unstable legislation**

21.1. Composition of Romanian seafood sector

In 2015, Romanian fish catching companies generated € 4 million in landings income (Table 70). Fish processing companies generated a further € 105 million in production revenues.

Romania had a € 205 trade deficit in fish products in 2016. It imported € 236 million in fish and fish products. 84% of these imports came from other EU countries. Romania's main import partners were the Netherlands (11%), Poland (11%) and Italy (10%).

The country exported € 32 million in fish and fish products in 2016. France accounted for more than half of all fresh fish exports. Bulgaria (11%) and the Republic of Moldova (8%) were the second and third most important export destinations.

In 2015, 151 commercial fishing vessels were registered in Romania. These were owned by 80 fishing companies. 20 fishing companies – or a quarter of all fishing enterprises – operated more than one vessel.

The fish catching segment in Romania employed 44 fte. The fish processing segment had a larger workforce of 1,279 fte.

Table 70: Romanian seafood sector key figures

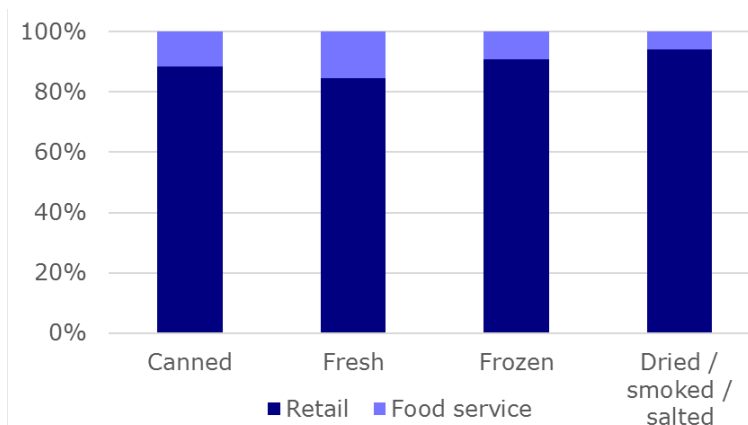
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2015)	151	
	Average vessel tonnage per vessel (2015, GT)	6	
	Average vessel tonnage per enterprise (2015, GT)	11	
<i>Enterprises</i>	Number of fishing enterprises (2015)	80	
	Enterprises with more than one vessel (2015, number, % enterprises)	20	25.0%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	4	0.00%
	Average landing income per fte employed (2015, €)	96,952	
	Average landing income per vessel (2015, €)	28,360	
<i>Employment</i>	Average landing income per enterprise (2015, €)	53,529	
	Employment fisheries (2015, fte, % workforce)	44	0.00%
	Average employment per vessel (2015, fte)	0.3	
Processing	Average employment per enterprise (2015, fte)	0.6	
	Processing production (2016, € mln, % GDP)	105	0.06%
	Employment in the fish processing sector (2015, fte, % workforce)	1,279	0.02%
	Average processing production per fte employed (2015, €)	82,252	

Segment	Measure	Value	Proportion
Trade	Trade balance (2016, € mln, % GDP)	-205	0.12%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	32	0.02%
	1. France (2016, € mln, % export)	16	52%
	2. Bulgaria (2016, € mln, % export)	3	11%
	3. Moldova, Republic Of (2016, € mln, % export)	3	8%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	236	0.14%
	1. Netherlands (2016, € mln, % import)	27	11%
	2. Poland (2016, € mln, % import)	26	11%
	3. Italy (2016, € mln, % import)	24	10%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

In Romania, just over 40% of the fish and fish products that enter the market are sold as fresh and just under 30% are sold as frozen. Canned and dried/smoked/salted fish products account for approximately 15% each of the fish product categories in the market. Just under 90% of all fish products sold in Romania are sold through retailers, the remainder is sold through the food service industry. Approximately 85% of fresh fish is sold through retailers (see Figure 104), while approximately 90% of the other fish product categories are sold through retail outlets.

Figure 104: Romania: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo

The majority of fresh fish sold in Romania (80%) is sold as unbranded products (see Table 71), while 20% is sold branded. More than 80% of canned and frozen fish products sold in Romania are sold as branded products. More than half of the dried/smoked/salted fish products are branded, and approximately 40% is unbranded.

Table 71: Romania: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	19%	82%	89%	56%
Unbranded	80%	10%	5%	43%
Own label	1%	8%	6%	1%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Piscicola Calarasi is the leading player in the fresh fish segment with a market share of around 12% (FFT, 2018). In the frozen fish product segment, Agroalim holds a market share of approximately 23%, while Ocean Fish accounts for another 15% (ibid.). In the canned product segment, the King Oscar brand of Thai Union (Thailand) plays an important role with a market share of around 11%, while Calvo (part of Grupo Calvo (Spain)) has a market share of around 10% (ibid.). In the dried/smoked/salted market segment, important players include Negro2000 with approximately 38% and Ocean Fish with approximately 28% (ibid.).

21.2. Producer organisations

There are five recognized has producer organisations in Romania representing marine fishing. The POs are presented in Table 72. Due to lack of data availability, the number of vessels and members is not provided.

Table 72: Romania: Recognized producer's organisations

Producer's organisation	Segment
Organizatia - "Federatia Producatorilor de Peste Delta Dunarii" (Organization - "The Danube Delta Fish Producers Federation")	Other
Organization Danube Delta Fishermen Organizations Federation (Organization Danube Delta Fishermen Organizations Federation)	Coastal, local small-scale, other
RO-PESCADOR Organization (RO-PESCADOR Organization)	Coastal, high sea, local small-scale, other
Grindul Lupilor (Wreath of the Wolves)	Other
Asociatia Pescuitului Maritim Tomis (Tomis Marine Fisheries Association)	Other

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission.

21.3. Company analysis

This section describes the company structures of the four largest fishing companies in Romania that are active in commercial fishing in the Black Sea. In 2017, the Romanian government granted 42 vessels a turbot fishing license, and 123 vessels a fishing license for other species, of which 37 vessels with sprat quota (ANPA, 2018).

The other species concern mostly whelk (*rapana*) and mussels. In 2015, 4,460 tonnes of whelk (representing 92.1% of total weight landings by the national fleet), 112 tonnes of European anchovy, 106 tonnes of European sprat, 46 tonnes of mussels, and 31 tonnes of turbot were the main species landed (STECF, 2017).

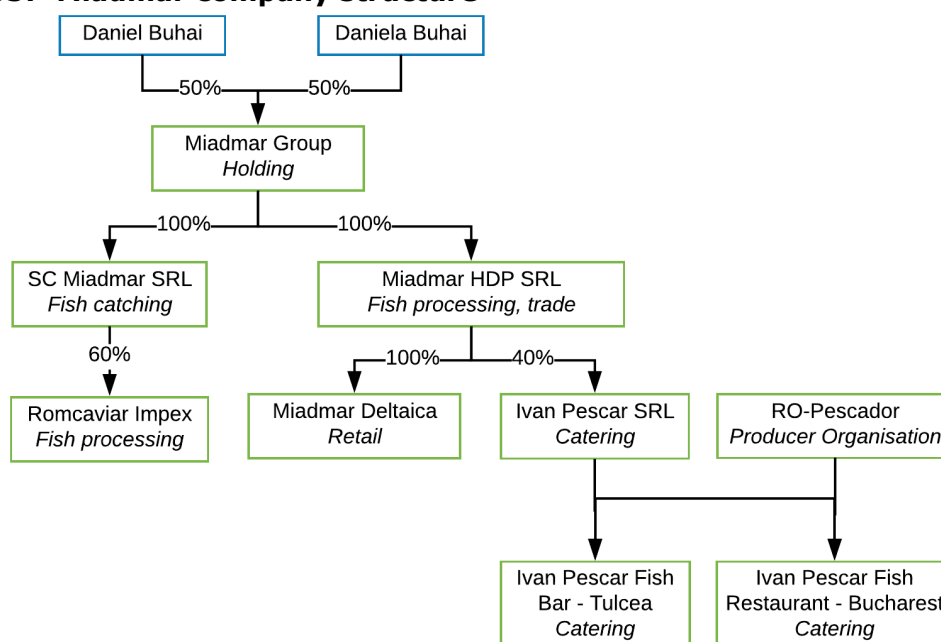
The largest companies in Romania are Miadmar, Brivas, Romfish Marina and Rompescador.

21.3.1. Miadmar

Miadmar is a fish company in Tulsa with catching, processing, retail and catering as business activities (Miadmar, 2018). It is active in catching turbot among other species (ibid.). The company processes and sells fresh water fish and marine fish under the brand name Deltaica, and caviar under the brand name Romcaviar (ibid.). It has processing facilities and stores in Tulsa, Constanta and Bucharest (ibid.). The restaurant branch is co-owned by the Producer Organisation RO-Pescador, of which Miadmar is a founding member (ibid.).

Miadmar has 48 employees. In 2016, its operating revenue was € 4.5 million, up from € 2.8 million in the previous year. The company held total assets of € 1.3 million in 2016, similar to the previous year (Orbis, 2018bk). The company structure is shown in Figure 105.

Figure 105: Miadmar company structure



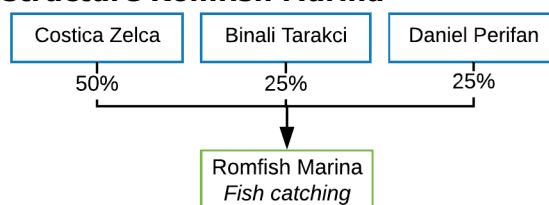
Source: Orbis (2018), "Ownership report: SC Miadmar SRL", viewed in August 2018; Orbis (2018), "Ownership report: Miadmar HDP SRL", viewed in October 2018; Miadmar (2018), "Despre noi", online: <https://miadmar.ro/despre/>, viewed in August 2018 [Romanian].

Miadmar shows evidence of vertical integration. It has investments in both upstream fish catching, midstream processing and downstream trade.

21.3.2. Romfish Marina

Romfish Marina SRL is a Romanian limited liability company and owned by three natural persons. The company operates two vessels in the large fleet segment from the port of Constanta. Both vessels have licences to fish turbot in the Black Sea. In 2016, the operating revenue was € 287,000, a decrease from € 328,000 the year before (Orbis, 2018bl). The company held total assets worth € 217,000 in 2016, an increase from the year before when it held total assets of 199,000 (ibid.). In 2016 it had 11 employees (ibid.).

Figure 106: Company structure Romfish Marina



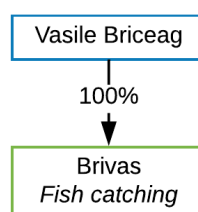
Source: Orbis (2018), "Ownership report: Romfish Marina SRL", viewed in August 2018.

Romfish Marina shows a certain degree of horizontal integration as it operates two large vessels in the Black Sea.

21.3.3. Brivas

Brivas operates four vessels. The only shareholder is Vasile Briceag. The Briceag family is also active in tourism (Observator de Constanta – 2018).

Figure 107: Company structure Brivas



Source: Orbis (2018), "Ownership report: Brivas SRL", viewed in August 2018.

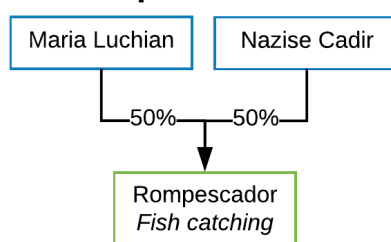
Brivas is engaged in horizontal integration through the operation of several vessels in the Black Sea.

21.3.4. Rompescador

Rompescador operates two vessels. There has been a change in shareholders in the company Rompescador SRL in the summer of 2018, when Traian-Ștefan Luchian transferred his shares to Maria Luchian.

Following the withdrawal, the share structure of 310 lei, divided into 31 shares, is as follows: Nazise Cadir holds 11 shares and Maria Luchian 20 shares. Both remaining associates participate with 50% in profit and loss (Ziua de Constanta - 2018).

Figure 108: Company structure Rompescador



Source: Orbis (2018), "Ownership report: Rompescador SRL", viewed in August 2018.

Rompescador shows a certain degree of horizontal integration as it operates two vessels in the Black Sea.

21.4. Integration

The above analysis has shown that there is a degree of both vertical and horizontal integration in the Romanian fisheries segment. Horizontal integration is more common, as several companies have expanded their fleet sizes. According to a representative of the PO Asociatia Pescuitului Maritim Tomis (Tomis Marine Fisheries Association), there are companies in Romania that "swallowed up other companies to grow" by buying other vessels (Florin, 2018). There is no expansion into the processing sector in Romania, because the investments are too high, the European funds confinement rate is low, and there is unstable legislation (ibid.). Nevertheless, one of the selected companies has engaged in vertical integration with activities all through the seafood value chain from catching and processing to distribution and branded marketing.

22. SLOVENIA

KEY FINDINGS

- **Negligible** vertical or horizontal **integration**
- **Significant fleet reduction** in recent years under scrapping programs
- Significant **reduction** in **marine fish landings**
- Seafood **processing** industry **relies** on **imported** raw **materials**

22.1. Composition of the Slovenian seafood sector

In 2015, Slovenian fishing companies only generated € 1 million in landings income (Table 73). Fish processing companies added € 12 million in production revenue in 2013.

In 2016, Slovenia had a negative trade balance of € 64 million in fish and fish products. The country imported for a value of € 97 million. 87% of its fish imports originated in other EU countries. With 30% Italy was the leading supplier, followed by Croatia (24%) and Spain (13%).

Slovenia exported € 32 million in fish and fish products in 2016. Three quarters of this was destined to other EU countries. Key destinations were Croatia (30%), Austria (17%) and Hungary (13%).

There were 172 registered commercial fishing vessels in Slovenia in 2016, 47% of which were active. 99 companies owned these vessels. 23 fishing enterprises – or a quarter of all fishing companies – owned more than one vessel. In 2017, 47% of the national fleet was active (STECF, 2018).

The fish catching segment employed 84 fte in 2015. According to 2012 data, the fish processing segment employed a larger workforce of 306 fte.

Table 73: Slovenian seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	172	
	Active vessels (2016)	80	47%
	Average vessel tonnage per vessel (2015, GT)	4	
	Average vessel tonnage per enterprise (2015, GT)	6	
<i>Enterprises</i>	Number of fishing enterprises (2015)	99	
	Enterprises with more than one vessel (2015, number, % enterprises)	23	23.2%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	1	0.00%
	Average landing income per fte employed (2015, €)	15,203	
	Average landing income per vessel (2015, €)	7,530	
	Average landing income per enterprise (2015, €)	12,855	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	84	0.01%
	Average employment per vessel (2015, fte)	0.5	
	Average employment per enterprise (2015, fte)	0.8	
Processing	Processing production (2013, € mln, % GDP)	12	0.03%
	Employment in the fish processing sector (2012, fte, % workforce)	306	0.03%
	Average processing production per fte employed (2015, €)	38,889	

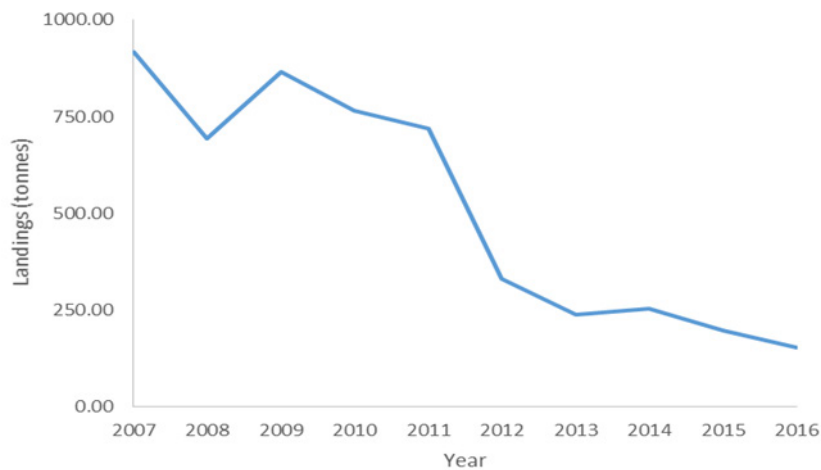
Segment	Measure	Value	Proportion
Trade	Average processing production per fte employed (2015, €)	38,889	(blank)
<i>Exports</i>	Trade balance (2016, € mln, % GDP)	-64	0.16%
	Exports of fish and fish products (2016, € mln, % GDP)	32	0.08%
	1. Croatia (2016, € mln, % export)	10	30%
	2. Austria (2016, € mln, % export)	5	17%
<i>Imports</i>	3. Hungary (2016, € mln, % export)	4	13%
	Imports of fish and fish products (2016, € mln, % GDP)	96	0.24%
	1. Italy (2016, € mln, % import)	29	30%
	2. Croatia (2016, € mln, % import)	23	23%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

The Slovenian coast, in the north-east Adriatic Sea, stretches over approximately 46 km. Fishing activity is almost exclusively restricted to these inshore territorial waters, and as such, the Slovenian fishing fleet is small - especially in comparison to the neighbouring Italian and Croatian fleets. The EU's Community Fishing Fleet Register has 224 individual vessels recorded for Slovenia (2018); the Ministry of Agriculture, Forestry and Food, reported 171 active fishing vessels in 2016, totalling 590 GT and with total engine capacity 8,535 kW and an average age of over 30 years. The fleet capacity has decreased in size over the past decade - largely due to the scrapping of the largest vessels.

The fleet is divided into a small-fleet segment and a large-scale segment (approximately 14% of active vessels) with an engine power of 1.9 thousand kW and above. More than 90% of Slovenian vessels are less than 12 metres in length. This small-scale fleet primarily targets demersal species in the inshore area. The remaining vessels are registered as being over 12 metres in length, and largely target small pelagic species, again almost exclusively within territorial waters. Historically the pelagic sector was dominated by two pair trawl vessels, but these were both scrapped under the EFF-funded cessation scheme (Ministry of Agriculture, Forestry and Food, 2015). These vessels had previously represented almost 50% of landed weight (STECF, 2018). Slovenia does not receive any quota from the EU. As it borders the Mediterranean, most management is conducted through days at sea effort control. In 2014, the fleet spent a total of approximately 8.6 thousand days at sea.

Landings of marine fish made by the Slovenian fleet has significantly decreased over the past decade (Figure 109). In 2016, 152 tonnes were landed, down from 917 tonnes in 2006. Around 76% of the 2016 catch was finfish, 19% molluscs, and 5% crustaceans. In terms of value of landings, the Fisheries Research Institute of Slovenia estimates that the total value in 2016 was about € 1.1 million - 15% lower than in 2015. The highest value fish species were sole, turbot and shi-drum (more than EUR 18 per kg). The majority of landed fish are sold locally - some fishers even have their own market stalls (or shops) at which they sell their catch directly. Slovenia has three main fishing harbours, located in Izola, Piran and Koper, the latter also being an important cargo port - with 64, 84 and 76, registered fishing vessels, respectively.

Figure 109: Total Slovenian landings of marine species in tonnes

Source: Fisheries Research Institute of Slovenia

The contribution of fisheries to the country's GDP is limited, particularly in comparison to the aquaculture sector, which was valued at approximately € 3.75 million in 2014. However, the fisheries sector is of importance socially due to the employment that it offers. The Slovenian statistical office estimates that 101 persons were employed in marine fishing as economic activity in 2016 (Statistical Office of the Republic of Slovenia, 2018). Most of them were self-employed fishers (75%), working on 83 active vessels (fewer than half of all registered fishing vessels). Among all persons in employment only 50% had full-time jobs, which is 21% fewer than in 2015. People employed in fisheries are often also engaged in other economic activities, such as tourism, trade and catering.

Processing is the largest remaining seafood sector, with 12 seafood processing companies in Slovenia – none employ more than 250 staff. However, most of the raw seafood being processed is either imported from outside the country or is from marine or freshwater aquaculture. Some of the smaller processing companies are formed by fish farmers who aim to add additional value to their product.

22.2. Producer organisations

Slovenia currently has no producer organisations that are recognised by the European Commission in the fishery and aquaculture sector. However, one of their 'union priorities' identified in their European Maritime and Fisheries (EMFF) operational programme was to provide funding in order to help create a producer organisation for fisheries and aquaculture products, in order to improve market organisation and support investment in processing and marketing (European Commission - Maritime Affairs and Fisheries, 2016).

22.3. Company analysis

Companies of note in Slovenia are almost exclusively processing companies – this industry is propped up by large amounts of imported raw fish product that is then processed in Slovenia.

22.3.1. Delamaris

Delamaris d.o.o. is part of the Slovenian Pivka Group (Pivka perutninarstvo d.d) (Pivka Group, n.d.). It is historically the largest seafood company in Slovenia – it employs over 100 staff today, who largely work in processing of raw fish. The company used to own a number

of Slovenian flagged fishing vessels that landed raw fish into Slovenia, which were then processed and sold by Delamaris. However, due to the significant reduction in Slovenian landings, the company now imports almost all of the raw fish it uses for processing – which is almost entirely mackerel. Indeed, the move towards imported fish is so significant, that the company has now relocated inland, away from the sea.

22.3.2. DROGA KOLINSKA živilska industrija

DROGA KOLINSKA živilska industrija d.d. food processing company with fish processing as one of its activities. Droga Kolinska is part of Atlantic Grupa (Hungary) (Atlantic Grupa, n.d.; Atlantic Grupa, 2010).

22.3.3. Ribogojstvo Goričar

Ribogojstvo Goričar d.o.o. Fish farm with additional processing business is marketing freshwater as well as marine fish (Ribogojstvo Goričar, n.d.).

22.3.4. Rival Trade

Rival Trade d.o.o - smaller company that processes and trades fisheries products, including fresh fish, crustaceans and molluscs from the Adriatic and the North Seas (Rival Trade, n.d.).

22.4. Integration

There is no evidence of significant vertical or horizontal integration occurring in the Slovenian seafood sector. The largest sector of the seafood industry is the processing sector, however, the turnover has decreased by 12% between 2008 and 2015, while the profit has decreased by 847% in the same period. This is perhaps not very attractive to outside investment. Lower turnover and higher operating cost are key driving forces behind the overall deterioration of Slovenian fish processing.

23. SPAIN

KEY FINDINGS

- Fish **processing** industry **largest** in **Europe**
- **Largest importer** of fish products in **Europe**
- **High** levels of structural **vertical** integration
- **Limited domestic** structural **horizontal** integration, **significant international** investments
- Non-structural vertical integration more common than structural
- **No quota trade due to overcapacity**, quota swapping common

23.1. Composition of the Spanish seafood sector

Spain has the biggest fishing industry in the EU. The country's location is of geostrategic importance, as it is positioned in the far south-west of Europe, enjoying entry points into both the Atlantic and the Mediterranean, while also offering good conditions for marine and fresh water aquaculture. The country's coastline is 8,000 km long, representing 7.4% of the total EU-23 coastline (European Commission - Maritime Affairs and Fisheries, 2016, p. 1).

There were 9,686 registered commercial fishing vessels in 2016. These were owned by 8,979 fishing companies. 592 enterprises – 7% of all fishing companies – operated more than one vessel. The fish catching segment in Spain employed approximately 30,015 fte in 2015 (Table 74).

Half of the Spanish fishing fleet (50%) is located in the Galicia region, Andalusia (15%) and Catalonia and the Canary Islands (9% together) follow with smaller shares (Eurofish, 2015c). 93% of the fishing enterprises in Spain own only one vessel (see Table 74). The most important fished species are tuna, albacore and needlefish, cod, hake, herring, sardines, and anchovies (Eurofish, 2015c).

The Spanish fish processing industry is the largest in Europe. In 2016, its turnover reached €5.2 billion, while total employment was estimated at 17,693 full-time workers (European Commission - Maritime Affairs and Fisheries, 2016, p. 1). The industry is diverse. It is focussed mainly on canning, but also active in frozen and fresh processed seafood. The canning sector has a production volume of 348,000 tonnes and a value of nearly €2 billion. It is mostly composed of medium-sized companies (Eurofish, 2015c). Tuna is the most important species in the sector, amounting for 69% of the total production volume, while other key species include sardines and anchovies (ibid.).

The Spanish fish and seafood market was estimated to be worth €13 billion in 2015 (Infinity Research, 2015a, p.25). Indications suggest it will grow to €16 billion by 2020. Spain accounted for 19.6% of European fish and seafood revenue in 2015 (ibid.). Globally, Spain is the fourth-largest market for imported fish and seafood, following the US, Japan and China (ibid.). It is the largest European importer of fish (ibid.). Spanish per capita annual fish consumption was estimated to be 26.4 kg per person in 2014 (ibid.).

Spanish fishing companies generated approximately € 2 billion in landings income in 2015. In 2016, fish processing companies generated a further € 5.2 billion in production revenues (Table 74).

Spain had a € 2.8 billion trade deficit in fish and fish products in 2016. It imported € 6.4 billion in fish products. Only 37% of these imports originated in other EU countries. Spain's largest import partners were Morocco (10%), France (7%) and Argentina (7%).

Spain exported € 3.7 billion in fish and fish products in 2016. 79% of these exports were to other EU countries. The main export destinations were Italy (32%) and Portugal (18%), followed by France (13%).

Table 74: Spanish seafood sector key figures

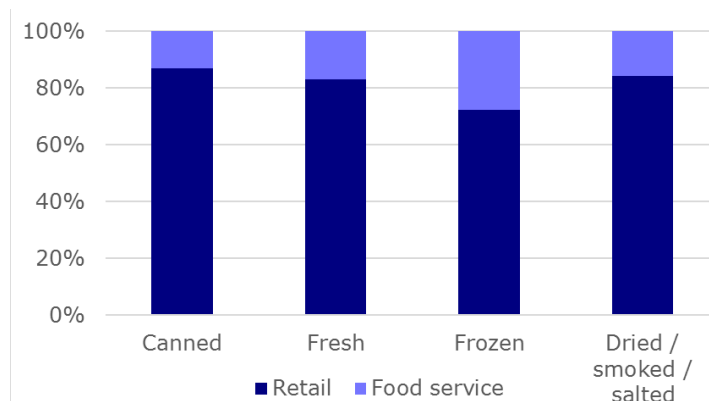
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	9,356	
	Active vessels (2016)	8,295	89%
	Average vessel tonnage per vessel (2015, GT)	38	
<i>Enterprises</i>	Average vessel tonnage per enterprise (2015, GT)	41	
	Number of fishing enterprises (2015)	8,979	
<i>Production</i>	Enterprises with more than one vessel (2015, number, % enterprises)	592	6.6%
	Income from landings (2015, € mln, % GDP)	1,952	0.18%
	Average landing income per fte employed (2015, €)	65,039	
<i>Employment</i>	Average landing income per vessel (2015, €)	201,547	
	Average landing income per enterprise (2015, €)	217,417	
	Employment fisheries (2015, fte, % workforce)	30,015	0.17%
	Average employment per vessel (2015, fte)	3.1	
	Average employment per enterprise (2015, fte)	3.3	
Processing	Processing production (2016, € mln, % GDP)	5,180	0.46%
	Employment in the fish processing sector (2015, fte, % workforce)	17,693	0.10%
	Average processing production per fte employed (2015, €)	292,766	
Trade	Trade balance (2016, € mln, % GDP)	-2,785	0.25%
<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	3,653	0.33%
	1. Italy (2016, € mln, % export)	1,178	32%
	2. Portugal (2016, € mln, % export)	666	18%
	3. France (2016, € mln, % export)	474	13%
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	6,438	0.58%
	1. Morocco (2016, € mln, % import)	617	10%
	2. France (2016, € mln, % import)	431	7%
	3. Argentina (2016, € mln, % import)	417	6%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

66% of all fish and fish products that enter the Spanish market are sold as fresh. Canned and frozen account for respectively 17% and 12% of all fish and fish products that enter the market. 82% of all fish and fish products are sold through retailers, the remainder is sold

through the food service industry. More than 80% of canned, fresh and dried/smoked/salted fish and fish products are sold through retailers (see Figure 110). 72% of frozen is sold through retailers, the remainder is sold through the food service industry.

Figure 110: Spain: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo

In Spain, 95% of fresh fish is sold unbranded (Table 75). Only 2% of fresh fish is sold branded, the remaining 3% is sold with retailers' own labels. The majority – more than 85% – of canned fish products are sold branded, and the remainder is sold with retailers' own labels. Almost three quarters of frozen fish and fish products are sold branded, approximately 20% is sold with retailers' own labels and 11% is sold unbranded. Roughly 60% of dried/smoked/salted fish products are sold branded, a quarter is sold with retailers' own labels and 15% is unbranded.

Table 75: Spain: Fish product retail composition

	Fresh	Canned	Frozen	Dried/smoked/salted
Branded	2%	85%	70%	61%
Unbranded	95%		11%	15%
Own label	3%	15%	19%	24%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In frozen products, Pescanova (see section 23.3.3) holds the largest market share with about 29% (FFT, 2018). In canned products, Conservas Albo is an important player with a market share of approximately 13%, while Conservas Garavilla with its brand Isabel accounts for another 11% (ibid.). Pescanova also accounts for about 7% of the market for dried/smoked/salted fish products in Spain, while Lur Berri (France) accounts for about 15% (ibid.).

23.2. Producer organisations

Table 76 gives an overview of the producer organisations in Spain. Due to lack of data availability the number of vessels and members is not provided.

Table 76: Spain: Recognized producer organisations

Producer organisation
Asociación de Productores de Pesca de Carboneras, S.A.
Asociación de Productores de Rodababallo
Asociación Empresarial de Productores de Cultivos Marinos (APROMAR)
Asociación Española de Ciprinicultores y de Acuicultura continental de Aguas Templadas (AECAC)
Organització de Productors del Peix Blau de Tarragona
Organización de Productores Anacef
Organización de Productores Artesanales de Cantabria (OPACAN)
Organización de Productores Artesanales de Galicia (OPAGA)
Organización de Productores Artesanales del Estrecho
Organización de Productores Asociados de Grandes Atuneros Congeladores (OPAGAC)
Organización de Productores de Acuicultura en Mar Abierto de Conil
Organización de Productores de Adsg Atrugal
Organización de Productores de Atún Rojo con Artes Decerco
Organización de Productores de Buques Congeladores Demerlúcidos Cefalópodos y Especies Varias
Organización de Productores de la Atunara
Organización de Productores de Marisco y Cultivos Marinos de la Provincia de Pontevedra
Organización de Productores de Mejillon de Galicia (OPMEGA)
Organización de Productores de Palangreros Guardeses
Organización de Productores de Pesca de Altura de Cantabria (OPECA)
Organización de Productores de Pesca de Altura del Puertode Ondárroa (OPPAO)
Organización de Productores de Pesca de Bajura de Guipuzcoa (OPEGUI)
Organización de Productores de Pesca de Bajura de Vizcaya (OPESCAYA)
Organización de Productores de Pesca de Palangre (ORPAL)
Organización de Productores de Pesca Fresca del Puerto de la Coruña
Organización de Productores de Pesca Fresca del Puerto de Vigo
Organización de Productores de Pesca Fresca del Puerto y Ria de Marin (OPROMAR)
Organización de Productores de Piscicultura Marina de Andalucía
Organización de Productores de Túnidos Congelados (OPTUC)
Organización de Productores de Túnidos y Pesca Fresca de Laisla de Tenerife (ISLATUNA)
Organización de Productores de Túnidos y Pesca Fresca de la Provincia de las Palmas
Organización de Productores Pescadores de Carboneras, Sociedad Cooperativa Andaluza
Organización de Productores Pescagalicia
Organización de Productores Pesqueros Artesanales Lonjade Conil
Organización de Productores Pesqueros Chirlas Deandalucía
Organización de Productores Pesqueros de Almadraba
Organización de Productores Pesqueros de Almeria, S.L.
Organización de Productores Pesqueros de la Marina Alta
Organización de Productores Pesqueros de Sant Carles de Larápita OPP Rápita
Organización de Productores Pesqueros Opmallorcamar
Organización de Productores Piscicultores
Organización de Productores Puerto de Celeiro, S.A.

Source: Ministerio de Agricultura, Alimentación y Medio Ambiente (2015, March), Directorio de Organizaciones de Productores y Asociaciones de Organizaciones de Productores.

23.3. Company analysis

This section provides an analysis of the company structures of seven major Spanish fish catching companies. These companies have been described as significant players in recent market research, with additional companies referred to by interviewees (Infinity Research, 2015a, p.25).

23.3.1. Grupo Freiremar

Grupo Freiremar was established in 1974 in Gran Canaria, Spain. The company owns and operates 35 freezer vessels including longliners and trawlers. Grupo Freiremar's registered gross tonnage is over 13,000 metric tonnes. The group harvests globally - in Europe, Africa, Argentina and Canada (Infinity Research, 2015a, p.42-43). Grupo Freiremar has processing plants on the Canary Islands, and in Valencia and Ria Vigo, Spain. Freiremar has been under insolvency since 2013 (Orbis, 2016m). The company's total fishing quota in the waters administered by Northwest Atlantic Fisheries Organization (NAFO) was passed on to two other Spanish companies, namely Moradiña and Hermanos Gandon (FIS, 2014).

Table 77 gives an overview of the Grupo Freiremar company structure, reporting on the company's main subsidiaries and associated companies. (A company is considered a subsidiary company if the parent's shareholding exceeds 50%). All identified subsidiaries are outside the EU. Vertical and horizontal integration thus occurs domestically in Spain and outside the EU.

Table 77: Grupo Freiremar company structure

Subsidiary / Associated company	Country	Shareholding
Beecon Marine	Panama	100%
Bonfred	Spain	98%
Bouza Mauritania de Peche	Mauritania	49%
Centropesca	Spain	77%
Cephapeche	Morocco	50%
Comercial d' Argoni	Panama	50%
Conpesa Mercado	Spain	99%
Credelmar	Uruguay	25%
Elaborados Freiremar	Spain	96%
Elaborados Freiremar Vigo	Spain	78%
Fonseca	Argentina	100%
Freirefrio	Spain	94%
Freiremar Comercial	Spain	n.a.
Freiremar Maroc	Morocco	89%
Freirewin Limited	n.a.	75%
Isla Alegranza	Uruguay	25%
Maruxia	Spain	100%
Societe de Peche Canario Senegalaise	Senegal	49%
Urtizbera Anaiak	Argentina	25%

Source: Orbis (2016), "Company report: Grupo Freiremar", viewed in April 2016.

The Grupo Freiremar shows a high degree of horizontal integration with investments in a large number of fish catching companies. These companies are largely located outside the EU.

23.3.2. Grupo Calvo

Grupo Calvo (Luis Calvo Sanz, S.A.) was established in 1940 and it is based in La Coruña, Spain (Bloomberg, n.d.). Currently, the company is engaged in fishing, processing (canning) and commercialisation of fish products. It owns a fleet consisting of six purse seiners, two reefer vessels and one auxiliary vessel. The company mainly fishes and processes tuna (Grupo Valvo, n.d.). The company also owns two canning factories in Spain, one tuna loin processing and canning factory in El Salvador, and one multi-product canning factory in Brazil (Grupo Calvo, 2014, p. 15). Its main brands include Gomes da Costa, Calvo, and Nostromo (Grupo Calvo, n.d.). In 2014, the company's total assets amounted to €372 million, while its revenue was €572 million (ORBIS, 2016n).

Table 78 gives an overview of the Grupo Calvo company structure, reporting on the company's main subsidiaries and associated companies. (A company is considered a subsidiary company if the parent's shareholding exceeds 50%). As we can see from the Table, Grupo Calvo, through its subsidiaries and associated companies' activities, is vertically integrated, covering all activities within the fish industry (fishing, processing, and distribution of fish products). Grupo Calvo holds subsidiaries in Europe, Central America and Africa; thus the company is internationally horizontally integrated. However, Grupo Calvo fish catching companies are either located in Spain or outside the EU.

Table 78: Grupo Calvo company structure

Subsidiary / associated company	Country	Activity	Shareholding
Calvo Conservas El Salvador	El Salvador	Food production	100%
Calvo Consignataria Centroamericana	El Salvador	Fish catching	100%
Calvo Distribucion Alimentaria Costa Rica	Costa Rica	Distribution	100%
Calvo Distribucion Alimentaria El Salvador	El Salvador	Distribution	100%
Calvo Distribucion Alimentaria	Spain	Distribution	100%
Calvo Envases	Spain	Can production	100%
Calvoconservas El Salvador	El Salvador	Food production	100%
Calvopesca Atlántico	Cape Verde	Fish catching	100%
Calvopesca El Salvador	El Salvador	Fish catching	100%
Calvopesca	Spain	Fish catching	100%
Cantábrica de Túnidos	Spain	Fish catching	100%
Conservas Premium	Spain	Distribution	75%
Conservera de Esteiro	Spain	Food production	100%
GDC Alimentos	Brazil	Food production; can production	100%
GDC Argentina	Argentina	Distribution	3%
Gestra Corporation	Panama	Fish catching	100%
Luis Calvo Sanz de El Salvador	El Salvador	General services	58%
Nostromo	Italy	Distribution	100%

Source: Grupo Calvo (2014, August), Grupo Calvo Corporate Report 2012-13, p. 25; Orbis (2016), "Company report: Grupo Calvo", viewed in April 2016.

The company structure of Grupo Calvo shows evidence of both structural vertical and structural horizontal integration. The company has activities in both the upstream and midstream segments through its investments in fish catching, processing and distribution. Grupo Calvo also shows evidence of structural horizontal integration through its investments in a large number of fish catching companies, predominantly located in South America.

23.3.3. Pescanova

Pescanova was established in 1960 by José Fernández López. Currently, the company owns more than 100 vessels, almost 50 fish-farming plants and more than 30 processing plants. Pescanova is a vertically integrated company, present in five continents and more than 20 countries (Pescanova, n.d.). At the end of the 2014 fiscal year, the company's total assets amounted to €1.2 billion, while its revenue was €901 million (Pescanova, 2015, p. 3, p. 12).

The company's structure is comparatively complicated as the Pescanova Group comprises more than 160 companies (Pescanova, n.d.). Table 79 gives an overview of the Pescanova company structure, reporting on the company's main subsidiaries and associated companies. (A company is considered a subsidiary company if the parent's shareholding exceeds 50%).

Pescanova, through its subsidiaries and associated companies, engages in activities within the primary (aquaculture, fishing), secondary (processing of products) and tertiary (marketing of products) sectors of the fish industry. Thus, Pescanova can be considered a highly vertically integrated company. Due to the company's vast presence across many countries, Pescanova is also a horizontally integrated company. However, as with Grupo Calvo, Pescanova's fish catching companies are located either in Spain or outside the EU.

Table 79: Pescanova company structure

Subsidiary / associated company	Country	Activity	Shareholding
Abad Exim Private	India	Fish processing	32%
Abad Overseas Private	India	Fish processing	45%
Acuicola el Rincón	Guatemala	Other	50%
Acuinova - Actividades Piscícolas	Portugal	Aquaculture	100%
American Shipping	Uruguay	Other	100%
Argenova	Argentina	Fish catching; fish processing	100%
Arkofish	Argentina	Jigging	100%
Asociación Pesqueira Edipesca (Marnova)	Angola	Fish catching	50%
Bajamar Séptima	Spain	Fish processing; marketing food products	100%
Eiranova Fisheries Limited	Ireland	Fish processing	100%
Entrepuesto Frigorífico de Pesca (Efripel) de Mozambique	Mozambique	Other	97%
Fricatamar	Spain	Other	100%
Frigodis	Spain	Other	100%
Frinova	Spain	Fish processing	90%
Frivipesca Chapela	Spain	Fish processing	100%
Fukucho	Argentina	Jigging	100%
Harinas y Sémolas del Noroeste	Spain	Processing food products (other than seafood)	50%
Insuiña	Spain	Aquaculture	100%
Ittinova	Italy	Other	100%
Nova Guatemala	Guatemala	Aquaculture	100%
Novaocéano	Mexico	Fish processing	100%
Novaperu	Peru	Fish processing	100%
Novapesca Italia	Italy	Other	100%
Novapesca Trading	Spain	Other	100%
Pescafina Bacalao	Spain	Fish processing	100%
Pescafina	Spain	Marketing food products	99%

Subsidiary / associated company	Country	Activity	Shareholding
Pescafina Tampico	Mexico	Other	99%
Pescafresca	Spain	Marketing food products	100%
Pescanova (Portugal) - Produtos Alimentares	Portugal	Marketing food products	100%
Pescanova Alimentación	Spain	Marketing food products	100%
Pescanova Brasil	Brazil	Aquaculture	95%
Pescanova France	France	Marketing food products	100%
Pescanova Hellas	Greece	Marketing food products	100%
Pescanova	United States	Marketing food products	100%
Pescanova Italia	Italy	Marketing food products	100%
Pescanova Japan	Japan	Marketing food products	100%
Pescanova Polska	Poland	Marketing food products	99%
Pescanova Real Estate	USA	Other	100%
Pesquera Arnippo	Argentina	Jigging	100%
Pesquera Latina	Argentina	Jigging	100%
Pesquerias Belnova	Uruguay	Fish catching	100%
Servicios y Contrataciones	Nicaragua	Aquaculture	67%
Subgrupo Camanica	Nicaragua	Aquaculture	100%
Camarones de Nicaragua	Nicaragua	Aquaculture	100%
Camanica Zona Franca	Nicaragua	Aquaculture	100%
Pescanova Nicaragua	Nicaragua	Aquaculture	100%
Zona Franca Rio Real	Nicaragua	Aquaculture	100%
Subgrupo Nova Honduras	Honduras	Aquaculture	100%
Nova Honduras	Honduras	Aquaculture	100%
Camarones y Derivados Marinos	Honduras	Aquaculture	100%
Elizmar	Honduras	Aquaculture	100%
Lorette	Honduras	Aquaculture	100%
Nova Honduras Zona Libre	Honduras	Aquaculture	100%
Subgrupo Novagroup	South Africa	Fish catching; other	92%
Novagroup	South Africa	Fish catching; other	92%
Novacargo Namibia	South Africa	Fish catching; other	42%
Novaship Logistics	South Africa	Fish catching; other	92%
Novaship Namibia	South Africa	Fish catching; other	92%
Novaspace	South Africa	Fish catching; other	92%
Novatech	South Africa	Fish catching; other	55%
Pilar Properties	South Africa	Fish catching; other	92%
Pescanova Agents Namibia	South Africa	Fish catching; other	92%
Eyethu Nova Joint Venture	South Africa	Fish catching; other	49%
Suidor Fishing	South Africa	Fish catching; other	49%
Suidor Trawling	South Africa	Fish catching; other	49%
	South Africa	Fish catching; other	92%
Novagroup	South Africa	Fish catching; other	92%
Novacargo Namibia	South Africa	Fish catching; other	42%
Novaship Logistics	South Africa	Fish catching; other	92%
Subgrupo Novanam	Namibia	Fish catching; processing seafood products; marketing food products	49%
Novanam Limited Namibia	Namibia	Fish catching; processing seafood products; marketing food products	49%

Subsidiary / associated company	Country	Activity	Shareholding
CMI Trawling	Namibia	Fish catching; processing seafood products; marketing food products	48%
Conbaroya Fishing	Namibia	Fish catching; processing seafood products; marketing food products	48%
Deep Ocean Fishing Namibia	Namibia	Fish catching; processing seafood products; marketing food products	48%
Empire Trawling	Namibia	Fish catching; processing seafood products; marketing food products	48%
Gendor Fishing	Namibia	Fish catching; processing seafood products; marketing food products	47%
Gendor Holding	Namibia	Fish catching; processing seafood products; marketing food products	48%
Gendor Resource Development	Namibia	Fish catching; processing seafood products; marketing food products	48%
Glomar Fisheries	Namibia	Fish catching; processing seafood products; marketing food products	48%
Kalahari Trawling	Namibia	Fish catching; processing seafood products; marketing food products	48%
Lalandii Holdings	Namibia	Fish catching; processing seafood products; marketing food products	48%
Nautilus Fishing Enterprises	Namibia	Fish catching; processing seafood products; marketing food products	47%
Neavera Trawling	Namibia	Fish catching; processing seafood products; marketing food products	47%
Novafish Shop	Namibia	Fish catching; processing seafood products; marketing food products	47%
Novafish Trawling	Namibia	Fish catching; processing seafood products; marketing food products	47%
Novanam Fishing Industries of Namibia	Namibia	Fish catching; processing seafood products; marketing food products	47%
Novanam Holdings of Namibia	Namibia	Fish catching; processing seafood products; marketing food products	47%
Omuhuka Trawling	Namibia	Fish catching; processing seafood products; marketing food products	48%
Oya Namibia	Namibia	Fish catching; processing seafood products; marketing food products	19%

Subsidiary / associated company	Country	Activity	Shareholding
Pamwe Fishing	Namibia	Fish catching; processing seafood products; marketing food products	23%
Skeleton Coast Trawling	Namibia	Fish catching; processing seafood products; marketing food products	23%
Pomona Lobster Packers	Namibia	Fish catching; processing seafood products; marketing food products	2%
Subgrupo Pescamar	Mozambique	Fish catching; marketing food products	70%
Sociedade de Pesca de Mariscos (Pescamar)	Mozambique	Fish catching; marketing food products	70%
Estaleiros Navais da Beira (Beiranave)	Mozambique	Fish catching; marketing food products	50%
Pescabom	Mozambique	Fish catching; marketing food products	70%
Compañía de Pesca del Océano Índico, (Copoic)	Mozambique	Fish catching; marketing food products	70%
Pescas Carrelo (Carrelomar)	Mozambique	Fish catching; marketing food products	36%
Subgrupo Promarisco	Ecuador	Aquaculture	100%
Promarisco	Ecuador	Aquaculture	100%
Balanceados Nova (Balnova)	Ecuador	Aquaculture	49%
Megashak	Ecuador	Aquaculture	100%
Sombracorp	Ecuador	Aquaculture	100%
Subgrupo Seabel	France	Processing seafood products; marketing food products	100%
Seabel	France	Processing seafood products; marketing food products	100%
Krustanord	France	Processing seafood products; marketing food products	100%
Krustanova	France	Processing seafood products; marketing food products	100%
Sofranor	France	Processing seafood products; marketing food products	100%
Sofranova	France	Processing seafood products; marketing food products	100%

Source: Pescanova (2015, April), *2014 Pescanova Annual Report*, p. 50-52; Orbis (2016, March), "Company report: Pescanova", viewed in March 2016.

The Pescanova company structure shows evidence of both structural vertical and structural horizontal integration. Vertical integration is evident through the company's investments throughout the value chain from fish catching to the marketing of food products. Horizontal integration is seen in Pescanova's investments in fish catching companies, particularly in Africa, with some investments in fish catching companies in South America.

23.3.4. Portobello Capital

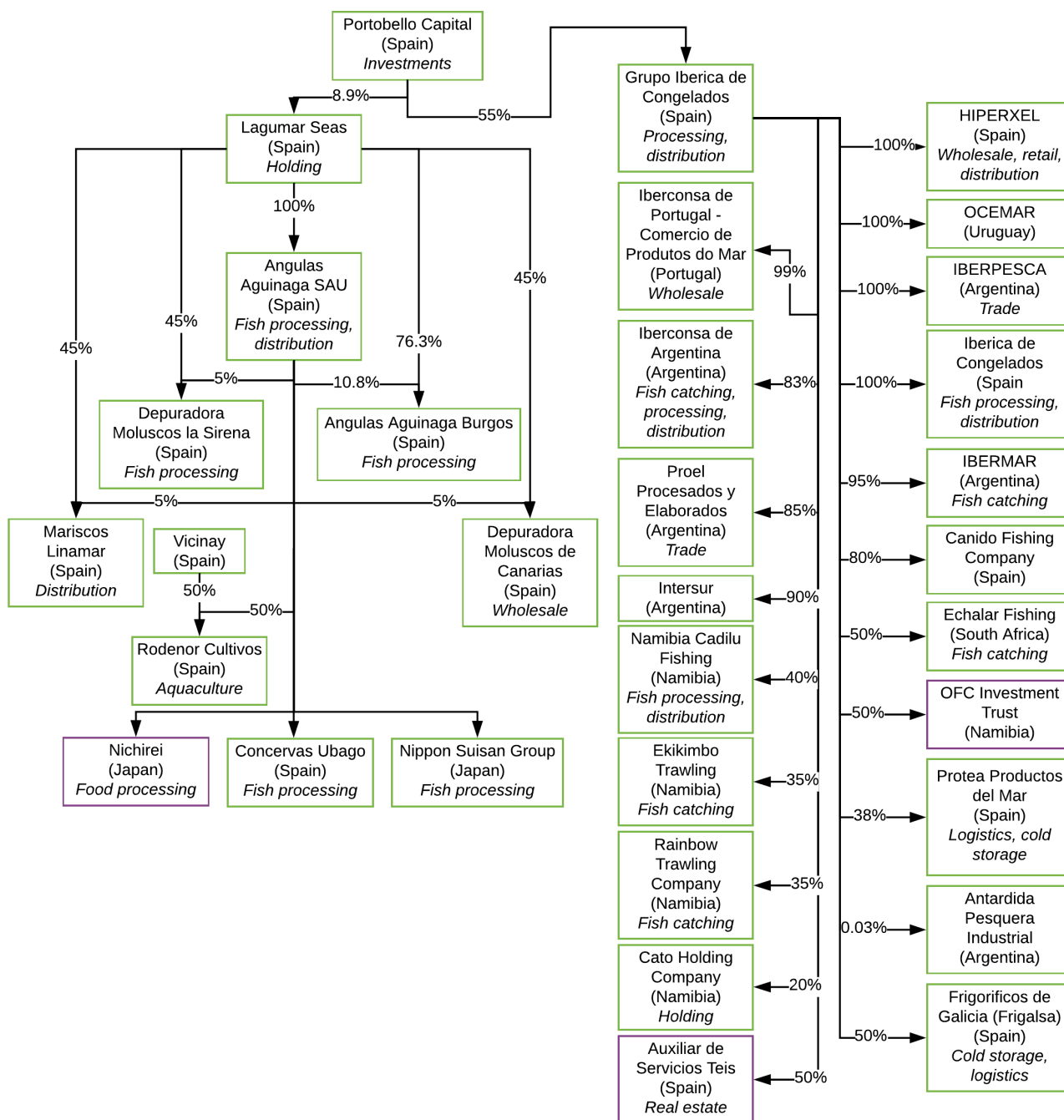
Portobello Capital is a Spanish private equity company founded in 2010 (Portobello Capital, n.d.). The company has a diverse portfolio, having invested in companies in different industries, including fisheries (ibid.). Portobello Capital has the majority stake in Grupo Iberica de Congelados (Iberconsa) and holds a 9% stake of Angulas Aguinaga (Portobello Capital, 2015). Figure 111 gives an overview of the Portobello Capital company structure.

In 2015, Portobello Capital acquired the majority stake in Iberconsa (Portobello Capital, 2015). Iberconsa was established in 1981 and is based in Vigo, Spain (Bloomberg Businessweek, n.d.). The company owns and operates vessels fishing in the Southeast and Southwest of Spain (FAO 41 and 47 regions respectively). The company catches various species of fish (e.g. toothfish, squid, hake, blue whiting and monkfish) (Iberconsa, n.d.). Iberconsa is a vertically integrated company as besides fish catching, it also engages in fish processing and the distribution of frozen seafood products (Iberconsa, n.d.). It has processing plants in Argentina and Namibia, owns a network of retail stores and has a stake in two cold storage companies in Galicia, Spain (Portobello Capital, 2015). As can be seen in Figure 111, besides in Spain, Iberconsa has subsidiaries in Argentina, Namibia, South Africa, Uruguay, and Portugal. The company is thus also horizontally integrated. In 2014, Iberconsa's total assets amounted to €160 million, while its revenue was €180 million (Orbis, 2016j).

Portobello Capital also holds a 9% stake in Angulas Aguinaga (Orbis, 2016d). Angulas Aguinaga was established in 1974 (Angulas Aguinaga, n.d.). The company engages in fish processing and distribution through its brands La Gula del Norte, Krissia, Prawn, Mussel, Salmon, and Octopus (n.d.). La Gula del Norte offers products that substitute elver-based products on surimi (ibid.). The company has subsidiaries in Spain and established partnerships with Japanese companies (Angulas Aguinaga, n.d. and Orbis, 2016d). In 2014, the Angulas Aguinaga's total assets amounted to €145 million, while its revenue was €96 million (Orbis, 2016d).

From the company structure and the description above, it is clear that Portobello Capital, through its investments in the fisheries segment, shows high levels of both structural vertical and structural horizontal integration. The company has investments throughout the value chain, from fish catching to processing and on to distribution and retail. Additionally, the company also has investments in a large number of fish catching companies; these are located on the Iberian Peninsula, Africa, and South America.

Figure 111: Portobello Capital company structure



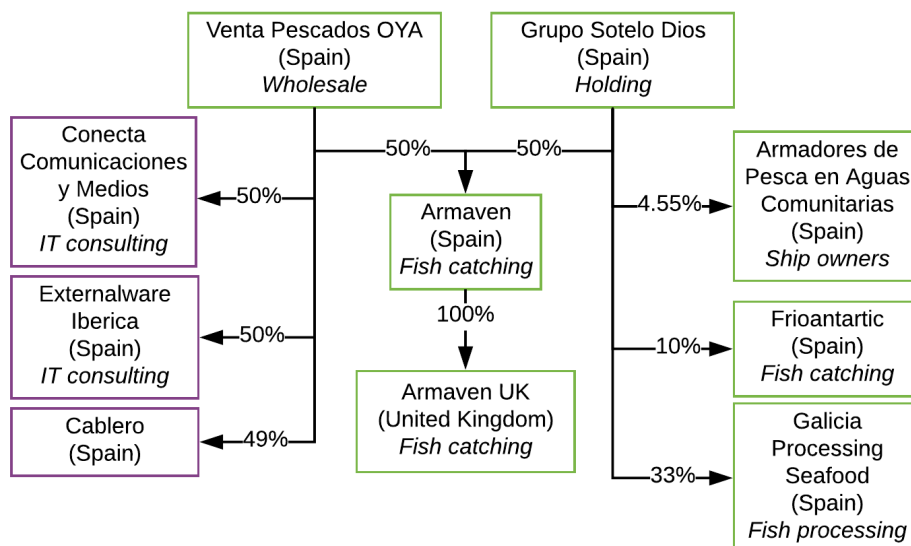
Source: Portobello Capital (2015, December), "Portobello Capital acquires Iberconsa", online: <http://www.portobellocapital.es/portobello-capital-acquires-iberconsa/>, viewed in May 2016; Iberconsa (n.d.), "Company - Group Companies", online: http://www.iberconsa.es/empresas_del_grupo.aspx/, viewed in May 2016; Orbis, "Iberconsa", viewed in May 2016; HIPERXEL (n.d.), "Conocemos", online: <http://www.hiperxel.com/conocenos.html#>, viewed in June 2016; Orbis (2016, May), "Company report: Lagumar Seas", viewed in May 2016; Angulas Anguinaga (n.d.), "International", online: <http://www.angulas-aguinaga.es/en/international/>, viewed in May 2016; Bloomberg (n.d.), "Company profile of Angulas Aguinaga Burgos SL", viewed in June 2016.

* Portobello Capital holds 55% of Grupo Iberica de Congelados, the remainder is held by individuals.

23.3.5. Armaven

Armaven is a vessel owning company with vessels registered in Spain and the United Kingdom (Marine Traffic, n.d.; Marine Traffic, n.d.; Inter-American Tropical Tuna Commission, n.d.). Figure 112 gives an overview of the Armaven company structure. Armaven is a joint venture between Venta Pescados and Grupo Sotelo Dios (Orbis, 2016i). Venta Pescados is a fish distribution company (Venta Pescados, n.d). Grupo Sotelo Dios holds a 10% stake in Frioantartic, a fish vessel owner fishing in the Atlantic and Indian Oceans (FAO 21, 27, 34, 41, and 51 regions).

Figure 112: Armaven company structure



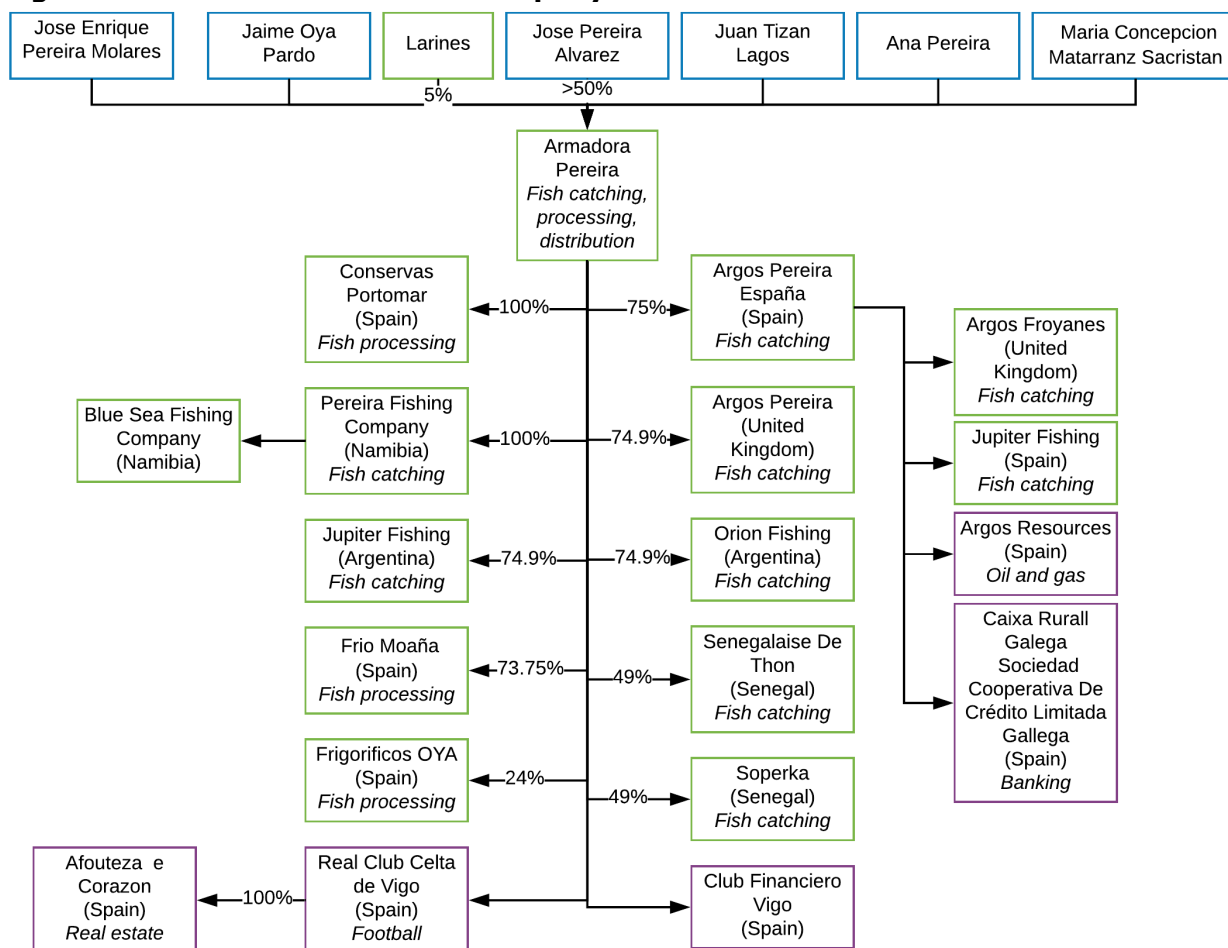
Source: Orbis (2016, May), "Company report: Armaven", viewed in May 2016; Orbis (2016, May), "Company report: Venta Pescados", viewed in May 2016; Orbis (2016, May), "Company report: Grupo Sotelo Dios", viewed in May 2016; Companies House (2015, December), *Armaven (UK) Limited*, p. 5.

The company structure of Armaven shows evidence of both vertical and horizontal integration. Vertical integration is apparent in the investments in fish catching and processing. One of Armaven's parent companies, Venta Pescados, also distributes fish products. Armaven further shows evidence of horizontal integration through its investments in fish catching companies in both Spain and the UK.

23.3.6. Armadora Pereira

Armadora Pereira was established in 1955 (Bloomberg, n.d.). In 2014, Armadora Pereira's total assets amounted to €101 million, while its revenue was € 83 million (Orbis, 2016h).

Figure 113: Armadora Pereira company structure



Source: Orbis (2016, May), "Company report: Armadora Pereira", viewed in May 2016; Landsea Food (n.d.), "Company", online: <http://www.landseafood.com.cn/empresa.html/>, viewed in June 2016; Pereira Fishing Company (n.d.), "Overview", online: http://pereiraocanproducts.co.za/fishing/main_fishing.html, viewed in June 2016.

Figure 113 gives an overview of the Armadora Pereira structure. Through its subsidiaries in Argentina, Namibia, and Senegal, the company fishes in the Atlantic Ocean (FAO 21, 27, 34, 41, and 47 regions) for a variety of species (Armadora Pereira, n.d.). Pereira Fishing Company, a subsidiary of Armadora Pereira, owns four vessels mainly operating along the Namibian coast (Pereira Fishing Company, n.d.). Soperka, another subsidiary, operates four frozen fishing vessels engaged in fish catching activities in Senegal, Gambia, and Guinea-Bissau (Soperka, n.d.).

Armadora Pereira has processing plants in Europe, Africa, and South America (Landsea Asia, n.d.). Frigorificos, a subsidiary of Armadora, has a refrigeration processing plant located in Moana, Spain (Armadora Pereira, n.d.). Frigorificos has also facilities used for the classification, transformation, and containing and packing of seafood products (Frigorificos, n.d.). Another of Armadora Pereira's subsidiary companies engaging in fish processing activities is Frio Moaña (Armadora Pereira, n.d.). Argos Pereira and Senegalaise de Thon are also fish catching subsidiary companies of Armadora Pereira operating in Spain and Senegal respectively (International Commission for the Conservation of Atlantic Tuna, n.d.).

Armadora Pereira distributes its products in the Asian market through its subsidiary, Seafood Asia, located in China (Landsea Asia, n.d.).

The company is a vertically integrated company engaging in fish catching, fish processing and the distribution of fish products (Armadora Pereira, n.d.). Since Armadora Pereira has subsidiaries in different countries and continents, the company is also horizontally integrated.

23.4. Integration

As the company analysis presented in section 23.3 shows, the Spanish fish industry is highly integrated vertically and horizontally. Leading Spanish companies engage in fish catching, fish processing, wholesale and distribution of seafood products, while at the same time they hold subsidiaries, vessels, processing factories and distribution centres all over the world.

Structural vertical integration in Spain was initially comprised of upstream companies investing downstream. However, recently downstream companies have also started to invest upstream (Ayala, 2016; Anonymous, 2016; Freire, 2016; Touza, 2016). For upstream companies, the key driver for investing downstream is to gain access to the market. This has been made possible through improvements in logistics. For downstream companies, the key driver for investing upstream is to gain access to quota (Anonymous, 2016; Touza, 2016).

Javier Touza of Cooperativa de Armadores de Pesca del Puerto de Vigo stated that there are a number of examples of fish catching companies taking over the whole value chain in Spain (Touza, 2016). These companies first invested in the processing segment before investing in retail. Touza named the examples of Grupo Pereira and Pescanova (ibid.).

A small number of retail companies and private equity companies in Spain are investing in the fish catching segment. José Luis Freire of Conxemar noted that private equity company Portobello Capital had invested in integrated fisheries through investments in fish catching, processing, and distribution companies Iberconsa and Angualas Aguinaga (Freire, 2016). For such companies the motivation to integrate is to reduce costs, to become more competitive, and to compete globally. Upstream companies investing downstream do so in order to assure supply at a good price (ibid.). Companies that have integrated have become more competitive (Ayala, 2016).

A respondent from a large Spanish fishing company stated that from the outset his company was determined to vertically integrate (anonymous respondent from large Spanish fishing company, 2016). The fish catching company started with on-board processing and later started investing in on-land processing and distribution networks (ibid.).

Freire also described how fishermen have, in some instances, also grouped together to invest in processing companies (Freire, 2016). Touza described another recent initiative undertaken by a number of Spanish fishermen (Touza, 2016). These fishermen pool together their ITQs or NAFO quotas and distribute them in an efficient manner (ibid.). For example, one company has NAFO rights for 20 days, another for 25 days, and another for 30 days (ibid.). They then pool these days together so that one vessel can catch fish for the full 75 days one year, with each company taking it in turn (ibid.). The benefits are shared each year. Touza states that a similar initiative is being used by fishermen in the Gran Sol (Great Sole Bank) fishing grounds (ibid.).

Non-structural vertical integration is also present in Spain. A respondent from a large fishing company and Touza both stated that this is still more common than structural vertical integration (anonymous respondent from large Spanish fishing company, 2016 and Touza, 2016). This is generally in the form of off-take arrangements between producers and processors. However, given the recent developments in ease of access to markets, structural vertical integration is becoming increasingly common (anonymous respondent from large Spanish fishing company, 2016). The respondent noted, however, that one difficulty was that the market was becoming increasingly concentrated within a small group of large buyers (ibid.).

There is not a lot of structural horizontal integration taking place within Spain, although a few companies are acquiring other fishing companies in Spain (Ayala, 2016). A respondent from a large Spanish fishing company with fishing activities exclusively outside Spain and the

EU, stated that his company had engaged in structural horizontal integration from the beginning (anonymous respondent from large Spanish fishing company, 2016). In the 1990s and 2000s, horizontal integration took place at the fish catching and processing levels (ibid.). This was in order to expand production capacity, and to expand the species and product portfolios (ibid.). The respondent added that horizontal integration was more common at the processing level than at the producer level (ibid.). He attributes this to the fact that quotas and catches are relatively fixed and stable, and given the highly competitive state of the Spanish fish catching sector due to overcapacity, it is more difficult to engage in horizontal integration at the fish catching level (ibid.). Touza corroborates the statement that horizontal integration was taking place at the processor level (Touza, 2016). However, he also notes that there are increasing concerns about quota concentration, which can only occur with horizontal integration at the fish catching level (ibid.). Touza argues that safeguarding mechanisms are needed to prevent the formation of monopolies. He believes that there is an increasing tendency, particularly in the Gran Sol (Great Sole Bank) fishery, of quota concentration (ibid.). POs and the Spanish authorities are already undertaking steps to identify suitable limits and control mechanisms (anonymous respondent from large Spanish fishing company, 2016).

Spanish companies that did not have fishing activities in the EU and certain non-Union waters when Spain joined the EU in 1986, do not have a fishing track-records in the regulated waters (anonymous respondent from large Spanish fishing company, 2016). This has meant that they are not allocated quotas in the EU and certain non-Union waters (ibid.). For these companies it is now very difficult to invest in the fish catching sector in Spain, particularly given the high level of competition in the sector due to the overcapacity of the Spanish fishing fleet (ibid.).

Freire noted that horizontal integration at the fish catching level in Spain tends to be international, and particularly outside the EU (Freire, 2016). However, he added that there are also several Spanish fish catching companies with investments in France and Ireland (ibid.). There are a number of barriers to Spanish horizontal integration in the EU. Firstly, according to Freire, the cost of labour is too high in most other EU countries, (ibid.). Another consideration is the quota allocation of species interesting to the Spanish market. Further barriers include general concerns by fishing companies about investing in unfamiliar countries (ibid.).

Touza similarly describes international horizontal integration at the fish catching level (Touza, 2016). He stated that over the last two years 14 vessels from his PO have flagged in France to gain access to more quotas. Some have also gone to Ireland and the UK, but most have gone to France (ibid.). He believes that this is a growing trend. The companies still maintain their companies in Spain, but also set up in France with vessels and become members of the French POs (ibid.). The flagging in France is primarily undertaken in order to gain access to quotas (ibid.). This is to get around the EU's 'relative stability key' issue (ibid.). This tendency reflag in France is done most often by Spanish fresh fish ship-owners (ibid.). They buy old ships in France, decommission them or sell them after transferring the quota and bring in newer vessels (ibid.). An example of a company that is doing this is Armaven SA in Spain and France (ibid.). Touza states that France has more quotas than Portugal, and the quota species in France are more interesting for the Spanish market (ibid.). Additionally, France has a small fleet and Spain and France have good relations (ibid.). Portugal and Spain have similar problems in relation to the 'relative stability key' (ibid.).

In terms of non-structural horizontal integration, there is quota swapping in Spain. Quota swapping can occur between companies and POs, both domestically and internationally. International quota swapping is usually undertaken by the POs.

24. SWEDEN

KEY FINDINGS

- A **quarter** of fishing enterprises in Sweden own **more than one vessel**
- **Limited** structural **vertical integration**
- Structural **horizontal integration** primarily in **pelagic** sector, and **international**
- **Less integration** in **demersal** segment
- Introduction of **ITQ system** has **improved company performance**
- **Room** for further **development** of **fish catching** sector

24.1. Composition of the Swedish seafood sector

Swedish fishing companies generated € 116 million in landings income in 2015. Processing companies generated an additional € 565 million in 2016 (Table 80).

Sweden maintained a trade deficit € 672 million in fish and fish products. Approximately 88% of all Swedish fish imports in 2016 came from Norway, with a value of approximately € 4 billion. Denmark and China were the second and third most important import markets, accounting for respectively 5% and 1% of all fish and fish product imports in 2016. Only 9.3% of the €4.7 billion Swedish fish imports came from the EU.

Sweden exported approximately € 4 billion in fish and fish products in 2016. Its major export destinations included Poland (21%), France (17%) and Spain (9%). Exports to EU countries accounted for 98% of all Swedish fish and fish product exports. Fish exports constituted 1% of Sweden's GDP in 2016.

There were 1,255 registered fishing vessels in Sweden in 2016, 78% of which were active (STECF, 2018). These belonged to 995 enterprises. Approximately a quarter of the fishing enterprises in Sweden owned more than one vessel. However, it should be noted that some of the larger pelagic fishing companies also only own one vessel.

Approximately 792 workers were employed in the fisheries segment in Sweden in 2015. The fish processing segment has a higher level of employment, approximately 1,662.

Table 80: Swedish seafood sector key figures

Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	1,255	
	Active vessels (2016)	975	78%
	Average vessel tonnage per vessel (2015, GT)	24	
<i>Enterprises</i>	Average vessel tonnage per enterprise (2015, GT)	31	
	Number of fishing enterprises (2015)	995	
	Enterprises with more than one vessel (2015, number, % enterprises)	251	25.2%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	116	0.03%
	Average landing income per fte employed (2015, €)	146,457	
	Average landing income per vessel (2015, €)	89,337	
	Average landing income per enterprise (2015, €)	116,543	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	792	0.02%
	Average employment per vessel (2015, fte)	0.6	
	Average employment per enterprise (2015, fte)	0.8	

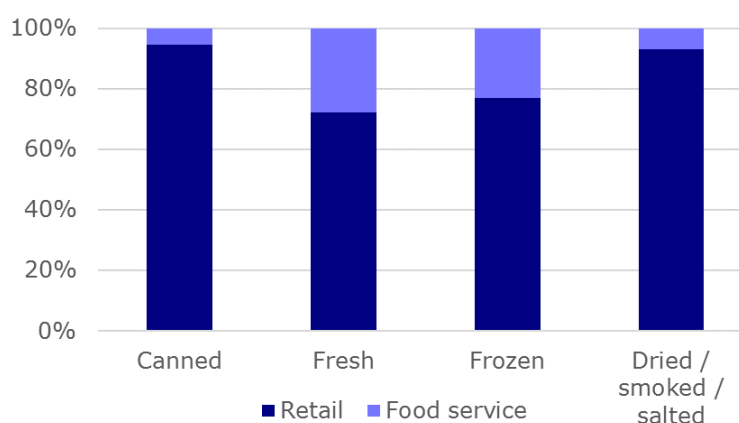
Segment	Measure	Value	Proportion
Processing	Processing production (2016, € mln, % GDP)	565	0.12%
	Employment in the fish processing sector (2015, fte, % workforce)	1,662	0.04%
	Average processing production per fte employed (2015, €)	339,771	
Trade	Trade balance (2016, € mln, % GDP)	-672	0.14%
Exports	Exports of fish and fish products (2016, € mln, % GDP)	4,020	0.86%
	1. Poland (2016, € mln, % export)	828	21%
	2. France (2016, € mln, % export)	686	17%
	3. Spain (2016, € mln, % export)	371	9%
Imports	Imports of fish and fish products (2016, € mln, % GDP)	4,692	1.01%
	1. Norway (2016, € mln, % import)	4,070	87%
	2. Denmark (2016, € mln, % import)	241	5%
	3. China (2016, € mln, % import)	64	1%

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

The pelagic fishing segment represents the majority of the Swedish fishing industry, with 85% to 90% of the volume and 60% to 65% of the value of fish caught (Paulrud, 2018).

A quarter of the fish and fish products that enter the Swedish market are sold as fresh, another quarter is sold canned. Roughly 30% of the fish products are sold as frozen. The remaining 20% is dried/smoked/salted. The majority of fish products in Sweden go to the retail market (84%). 94% of all canned fish products are destined for the retail market, the remainder is used by the food service industry. 72% of fresh fish goes to retail, 77% of frozen and 93% of dried/smoked/salted fish (see Figure 114).

Figure 114: Sweden: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

On average, 66% of retailed fish products in Sweden are branded, and 9% is unbranded. 25% of all fish products are sold under retailers' own-brand. The majority of canned products were branded (82%), compared to fresh fish with 50%. According to the available data, there are no unbranded canned, frozen or dried/smoked/salted fish products in Sweden (see Table 81).

Table 81: Sweden: fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	50%	82%	64%	66%
Unbranded	39%			
Own label	11%	18%	36%	34%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Sweden has a comparatively large share of branded fresh fish products. An important supplier is Bröderna Hanssons with a market share of approximately 53%, followed by Lerøy Seafoods (part of Austevoll (Norway)) with a share of about 27% (ibid.). In the frozen segment, the Findus brand of Nomad (UK) holds a share of approximately 39% (ibid.). In the canned segment, Orkla (Norway) accounts for approximately 51% of the Swedish market, while the Falkeskog brand (part of Nordqvists Fiskexport) holds a share of around 29% of canned fish products market (ibid.). Falkeskog and Lerøy Seafoods are also important brands in the dried/smoked/salted segment, accounting for approximately 36% and 14%, respectively (ibid.).

24.2. Producer organisations

There are six producer organizations in Sweden that are recognized by the European Commission. Two of these are specifically for local small-scale fishermen. One PO is for aquaculture. In addition, there is one PO whose members are engaged in both pelagic and demersal fisheries, and demersal and pelagic fisheries have one PO each (Table 82).

In terms of the number of members, the Swedish Fisheries Producers' Organization (Sveriges fiskares Producentorganisation - SFPO) is the largest with 227 members. The members of SFPO are all demersal fishing companies. The Swedish Pelagic Federation PO has a smaller number of members (14), however, these all operate large pelagic fishing vessels.

Table 82: Sweden: Recognized producer organisations

Producer organization	Segment	No. of members
Hallandsfiskarnas Producentorganisation	Local small-scale fisheries	52 vessels
Producentorganisationen Gävlefisk	Local small-scale fisheries	n/a
Svensk skaldjursodling Producentorganisation	Aquaculture	n/a
Torskfiskarnas Producentorganisation STPO	Pelagic and demersal	10 vessels
Swedish Pelagic Federation PO	Pelagic	14 vessels
Swedish Fisheries Producers Organization	Demersal	227 vessels

Source: European Commission (2017, December), *List of the Recognised Producer Organisations in the Fishery and Aquaculture Sector*, Brussels: European Commission, p. 15; Swedish Fisheries Producers' Organization (n.d.), "About the Swedish Fisheries Producers Organization", online: <http://www.sfpo.se/om-sfpo>, viewed in May 2018; Swedish Pelagic Federation PO (n.d.), "Portfolio", online: <https://www.pelagic.se/portfolio/>, viewed in May 2018; Svensson, A. (2017, February 20), "Number of members of the fisheries organizations", *Njord*, online: <http://fiske.zaramis.se/2017/02/20/antalet-medlemmar-i-fiskeriorganisationerna/>, viewed in May 2018.

24.3. Company analysis

This section presents an analysis of the structures of companies active in the Swedish fisheries sector. Subsection 24.3.1 presents the analysis of companies active in the pelagic segment, while subsection 24.3.2 analyses companies active in the demersal segment.

24.3.1. Pelagic segment

Table 83 presents the Swedish pelagic quota allocation per company as of January 2018. Six companies account for approximately 47% of all pelagic quota allocation in Sweden. Of these companies, Fiskeri AB Ginneton is the largest, holding approximately 12% of the total national pelagic quota. This indicates a high level of consolidation in the pelagic segment.

Table 83: Pelagic fishing companies quota allocation (2018)

Company	Total quota (mln tonnes)	% of total
Fiskeri AB Ginneton	23	12%
Astrid Fiske AB	19	9%
B-C Pelagic AB	18	9%
Bryngeld Fiskeri	17	9%
Carmona AB	15	8%
Other	105	53%
Total	197	100

Source: Havs- och vattenmyndigheten (2018, March), Pelagiska Fiskemöjligheter Rättigheter [Dataset].

Note: Actual allocations are likely to have changed. Allocation are made at the vessel level. Figures are for identified company level vessel owners.

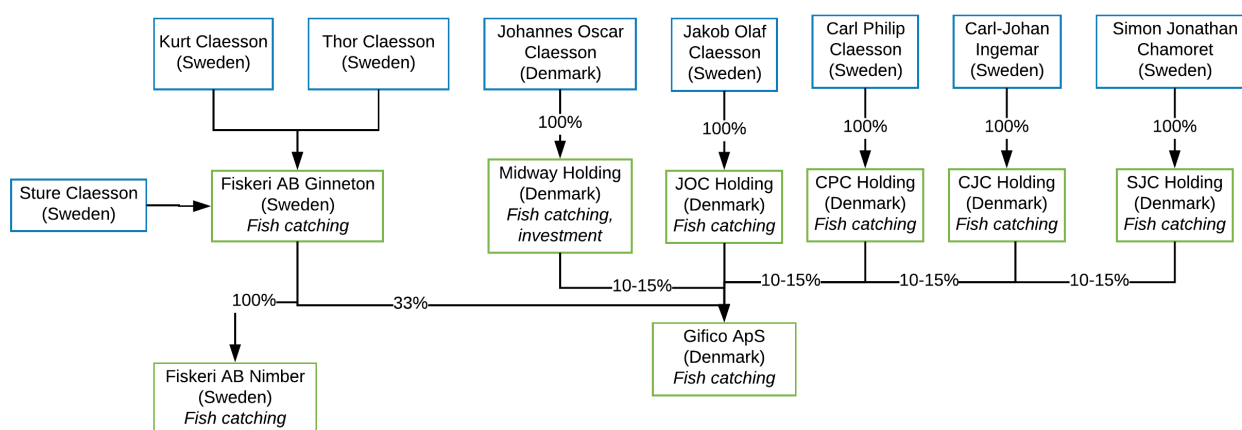
The remainder of this section will present the company analysis of the three companies with the highest values of identified pelagic quota allocation.

24.3.1.1. Fiskeri AB Ginneton

Fiskeri AB Ginneton is a Swedish fishing company. It expanded into Denmark in 2011 (Fiskeri AB Ginneton, 2018a). The company is engaged in both pelagic and demersal segments. In Sweden it owns 12% of all pelagic quota, and approximately 0.53% of the demersal quota (Havs- och vattenmyndigheten, 2018a and 2018b). In the pelagic segment, Fiskeri AB Ginneton targets herring, mackerel, sprat and sand eel. In the demersal segment it targets, among others, cod and lobsters.

In the 18-month period from 1 January 2016 to 30 June 2017, Fiskeri AB Ginneton generated a turnover of approximately € 10.5 million. In the 12 months of 2015, the company generated € 6.4 million in turnover (Fiskeri AB Ginneton, 2017). In 2017 the company held total assets of approximately € 19.1 million, up from € 17.7 million in 2015 (ibid.). Among these assets were quota valued at € 3.1 million, up from € 0.8 million in 2015 (ibid.). The company an average workforce of 36 employees in 2017, up from 23 in 2015 (ibid.).

Fiskeri AB Ginneton operates three vessels: two in Sweden (78m Beinur HG 62, and 15.5m Vera C GG-210), and one in Denmark (62.6 m Ceton S-205) (Fiskeri AB Ginneton, 2017, 2018b).

Figure 115: Fiskeri AB Ginneton company structure

Source: Orbis (2018, May), "Gifico ApS: Beneficial owners", viewed in May 2018; Fiskeri AB Ginneton (2017, September), *Annual Report: 2016-01-01 to 2017-06-30*, p. 13.

The structure of the company shows that Fiskeri AB Ginneton is a horizontally integrated company. It operates in both pelagic and demersal segments and has activities in both Sweden and Denmark.

24.3.1.2. Astrid Fiske

Astrid Fiske is a Swedish fishing company. The company was established in the 1950s by Leif Johansson in Sweden (Astrid Fiskeri, n.d. a). His two sons, Börje and Tomas, followed his footsteps and expanded the business (ibid.). The next generation of Johanssons – Daniel, Johannes, and Kristian – passed the skippers' exam in Skagen in Denmark. This allowed Astrid Fiske to expand into the Danish fisheries by establishing a subsidiary in Denmark, accessing Danish vessels and quota (ibid.).

Astrid Fiske had consolidated turnover of approximately € 47.6 million in 2016, up from € 46.7 million in 2015 (Astrid Fiske, 2017). Astrid Fiske had consolidated total assets of € 142 million in 2016, up from € 126 million in 2015 (ibid.). Of the total assets, Astrid Fiske owned consolidated quota valued at € 91.4 million in 2016, an increase from € 78.4 million a year earlier (ibid.).

In Sweden, Astrid Fiske has quota in both the pelagic segment (9% of the total national quota), and the demersal segment (0.2% of the total national quota) (Havs- och vattenmyndigheten, 2018a and 2018b).

In Denmark, Astrid Fiskeri's share of total quota is higher:

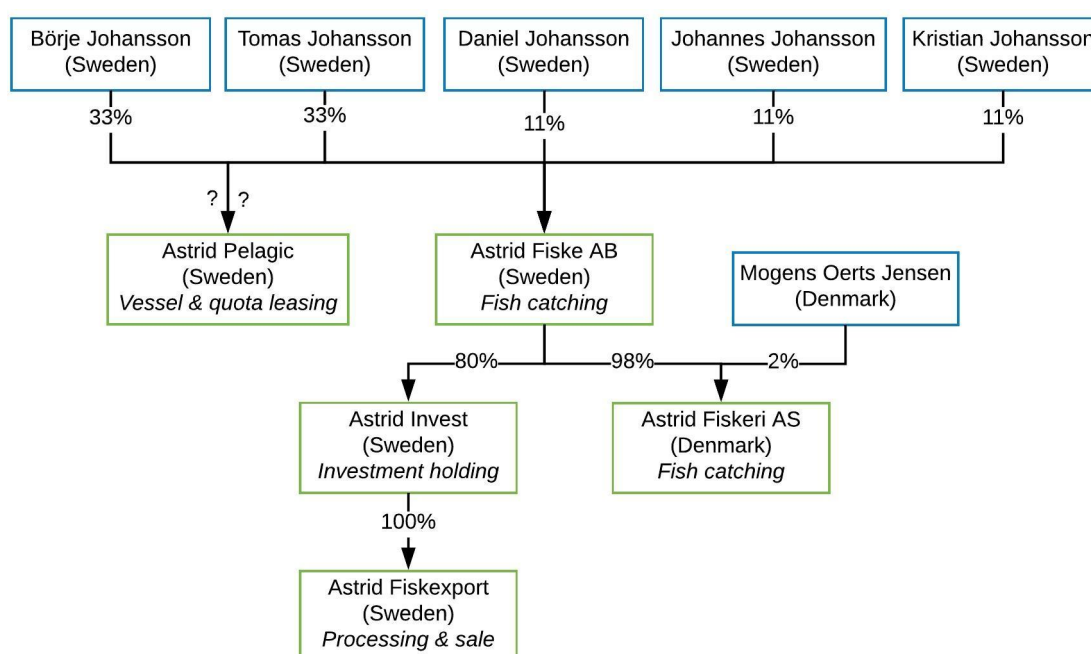
- 14% of Danish herring in the North Sea;
- 13% of Danish herring in the Skagerrak/Kattegat area;
- 14% of North Sea sprat;
- 34% of Western horse Mackerel;
- 8% of Mackerel;
- 24% of Norway pout;
- 10% of sand eel;
- 19% of Baltic sprat;
- 8% of blue whiting (Astrid Fiskeri A/S, n.d. b).

88% of Astrid Fiske's consolidated turnover was generated through sales outside of Sweden (Astrid Fiske, 2017). However, only 30% of the company's unconsolidated turnover was generated through sales outside of Sweden (ibid.).

Astrid Fiske group employed on average 70 employees in 2016, two more than in 2015 (Astrid Fiske, 2017).

Astrid Pelagic is not included in the consolidated financial statements of Astrid Fiske. It appears to be a separate entity owned by Börje and Tomas Johansson who are the directors of the company. Astrid Pelagic describes its business activities as leasing vessels and quota to Astrid Fiske (Astrid Pelagic, 2017). In doing so, it generated revenues of € 0.6 million in 2016, down from € 0.9 million the previous year. Astrid Pelagic had total assets of approximately € 8.2 million in 2016, and € 8.1 million in 2015. Of these assets, the company held quota valued at € 167,000 in 2016, a decrease from € 209,000 the previous year (ibid.).

Figure 116: Astrid Fiske company structure



Source: Astrid Fiske AB (2017, July), *Consolidated Annual Report 2016-01-01 to 2016-12-31*, p. 2; Astrid Fiskeri A/S (n.d.), "Astrid Fiskeri A/S", online: <http://www.astridfiskeri.dk/en/company/astrid-fiskeri-as/>, viewed in June 2018; Astrid Fiskexport (2017, July), *Annual Report 2016-01-01 to 2016-12-31*, p. 9; Astrid Pelagic (2017, July), *Annual Report 2016-01-01 to 2016-12-31*, p.2

The company structure suggests a similar pattern to that of Fiskeri AB Ginneton (see section 24.3.1.1). Astrid Fiske is a horizontally integrated company. It is active in both the pelagic and demersal segments. It is also active in both the Swedish and Danish fisheries. Similar to Fiskeri AB Ginneton, it originated in Sweden and later expanded into Denmark. One difference, however, is that Astrid Fiske is more vertically integrated. It has a processing plant and sales company through Astrid Fiskexport.

24.3.1.3. B-C Pelagic

B-C Pelagic is a 50-50 joint venture between Bristol Fiske and Clipperton established in 2016. Bristol Fiske sold its shares in wholly-owned subsidiary SDQT Sweden AB to B-C Pelagic (Bristol Fiske, 2018). In turn, Clipperton sold its shares in wholly-owned subsidiary Clipperton Pelagic to B-C Pelagic (Clipperton, 2018). This formed the basis of the joint venture (B-C Pelagic, 2018). It owns the fishing vessel Clipperton (63m) that was delivered in April 2018

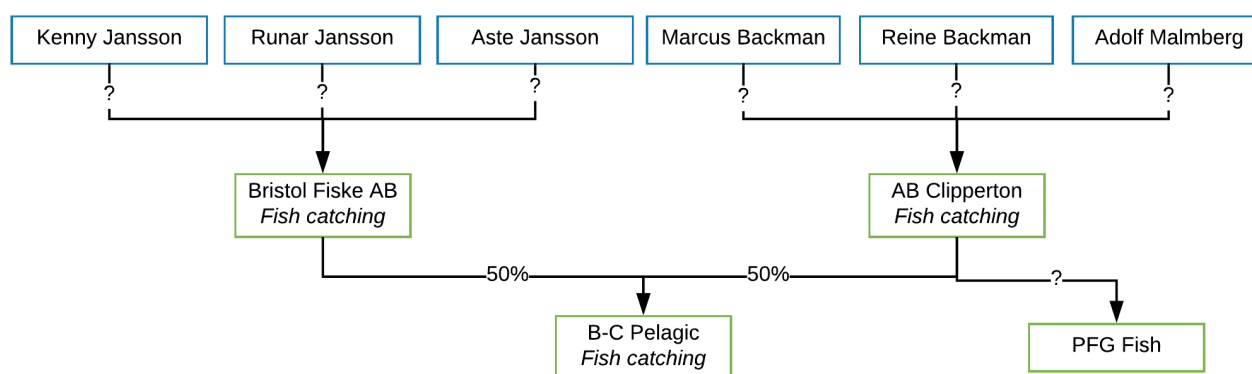
(FiskerForum, 2016). The vessel replaces Bristol Fiske's fishing vessel Bristol and Clipperton's fishing vessel Old Clipperton (ibid.).

Bristol Fiske is owned by the Jansson brothers. Clipperton is a Backman family enterprise. The current generation of Backmans were also trained as skippers in Skagen (Denmark), making them eligible to invest in the Danish fisheries (FiskerForum, 2016).

In the 18-month period January 2016 to June 2017, B-C Pelagic generated approximately € 4.1 million in revenues (B-C Pelagic, 2018). As of June 2017, it held total assets of € 14.9 million. Of this, € 3.7 million were fishing rights (ibid.).

B-C Pelagic owns 9% of the Swedish pelagic quota, and a small amount of demersal quota (Havs- och vattenmyndigheten, 2018a and 2018b).

Figure 117: B-C Pelagic company structure



Source: FiskerForum (2016, August), "Swedish operators merge for new build", online: <http://www.fiskerforum.dk/en/news/b/swedish-operators-merge-for-newbuild>, viewed in June 2018; B-C Pelagic (2018, February), *Annual Report 2016-01-04 to 2017-06-30*, p. 3; Bristol Fiske (2018, February), *Annual Report 2016-07-01 to 2017-06-30*, p. 2; Clipperton (2018, February), *Annual Report 2016-07-01 to 2017-06-30*, p. 3, 9.

The company structure of B-C Pelagic shows that it is horizontally integrated. Bristol Fiske and Clipperton consolidated their quota onto one larger vessel under a joint venture enterprise. Currently, B-C Pelagic is only active in the fish catching segment in Sweden. However, the fact that the current Backman generation is also trained in Denmark may allow the company to expand their investments into Denmark in the future.

24.3.2. Demersal segment

Table 84 presents the Swedish demersal quota allocation per company as of January 2018. Six companies account for approximately 9% of all demersal quota allocation in Sweden. This indicates that there is a low level of consolidation in the Swedish demersal segment.

Table 84: Demersal fishing companies quota allocation (2018)

Company	Total quota ('000 tonnes)	% of total
Ganefjord	664	4.5%
Bravik Fiskeri AB	625	4.2%
Västerland AB	558	4.0%
Vingaskär Fiskeri AB	507	3.4%
Almy West AB	447	3.0%
<i>Other</i>	<i>12,097</i>	<i>81%</i>
Total	14,897	100

Source: Havs- och vattenmyndigheten (2018, March), *Demersala Fiskemöjligheter Rättigheter* [Dataset]. Note: Actual allocations are likely to have changed. Allocation are made at the vessel level. Figures are for identified company level vessel owners.

The remainder of this section will present the company analysis of the three companies with the highest values of identified demersal quota allocation.

24.3.2.1. Ganefjord

Andreas Ganefjord operates two fishing vessels: Tunafjord FG-111 and Falken II GG-777 (Havs- och vattenmyndigheten, 2018a and 2018b). In total, he owns 4.5% of Sweden's demersal quota.

Ganefjord is associated with three entities in the Swedish company registry: Andreas Ganefjord, Älvsborg Fiskeri and Ganefjord Fiskeri (Proff.se, 2018a).

The legal entity Andreas Ganefjord is registered as a fishing company engaged in fish trawling (Proff.se, 2018b). It was established in 2010 but has no employees or financial information (ibid.).

Älvsborg Fiskeri was established in February 2018 (Proff.se, 2018c). At the time of this current research, no financial or further information was available.

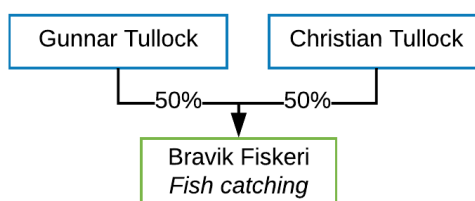
Ganefjord Fiskeri was established in December 2017 (Proff.se, 2018d). It is registered as a fishing company engaged in fish trawling, and has one to four employees (Proff.se, 2018d). At the time of this research, no financial or further information was available.

24.3.2.2. Bravik Fiskeri

Bravik Fiskeri operates one fishing vessel (Bravik GG-201). It is active in the Swedish demersal segment and owns approximately 4.2% of the Swedish demersal quota (Havs- och vattenmyndigheten, 2018a and 2018b). Bravik Fiskeri is owned by the brothers Gunnar and Christian Tullock (Figure 118).

In 2016, Bravik Fiskeri generated revenues of € 879,000, up from € 833,000 in 2015 (Bravik, 2017). The company owned total assets of € 555,000 in 2016, down from € 599,000 in 2015, indicating an improved asset turnover (ibid.). The company employed four employees in both 2016 and 2015 (ibid.).

Figure 118: Bravik Fiskeri company structure



Source: Bravik Fiskeri (2017, July), *Annual Report 2016*.

From the company structure and description, it is evident that Bravik Fiskeri is not an integrated company.

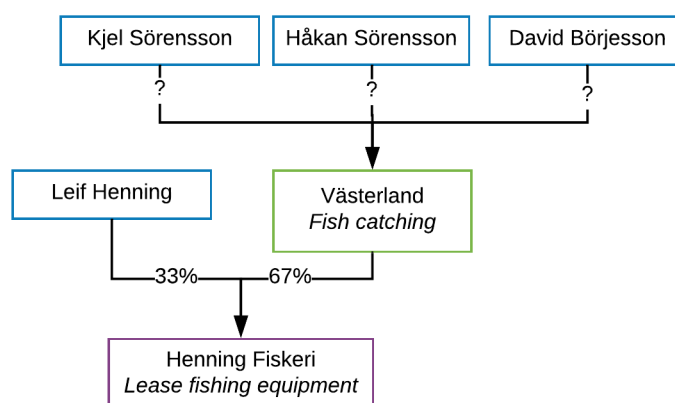
24.3.2.3. Västerland

Västerland AB is a Swedish fishing company. It owns approximately 4% of the Swedish demersal quota (Havs- och vattenmyndigheten, 2018a and 2018b). It operates two vessels: Västerland GG-181 and Odderö SD-748 (Havs- och vattenmyndigheten, 2018a and 2018b; Västerland, 2018).

In the twelve-month period from September 2016 to August 2017 Västerland generated approximately € 1.2 million in revenue (Västerland, 2018). In the same period the previous year it also generated € 1.2 million (ibid.). In August 2017, Västerland had total assets worth

€ 3.9 million (ibid.). The previous year it had the same value (ibid.). Of these assets, Västerland held fishing rights valued at € 393,000 in both 2016 and 2017 (ibid.).

Figure 119: Västerland company structure



Source: Västerland (2018, March), *Annual Report 2017-01-01 to 2017-08-31*, p.9; Henning Fiskeri (2018, March), *Annual Report 2017-01-01 to 2017-08-31*, p. 6.

As Figure 119 shows, Västerland is also the majority shareholder of a company that leases fishing equipment. With its two vessels, Västerland shows a small degree of horizontal integration.

24.4. Integration

The analysis of the Swedish fishery sector shows that there is a higher level of structural integration in the pelagic than in the demersal segment. This is confirmed by Peter Olsson of the SFPO (Olsson, 2018). The trend is in line with the trend in other countries. Structural integration in the Swedish pelagic segment is primarily horizontal and international (ibid.). Swedish fishing companies are buying a lot of vessels from Denmark, Germany, the Baltic States and Finland (Olsson, 2018; Claeson, 2018). Companies from those countries do not often invest in Sweden (Olsson, 2018). Half the Danish pelagic quota is owned by Swedish companies (ibid.). Likely due to earlier consolidation in the pelagic segment, only one pelagic fishing company owns more than one pelagic vessel in Sweden (Fiskeri AB Ginneton, 2018). Both Astrid Fiske and Fiskeri AB Ginneton have expanded into Denmark, while B-C Pelagic seems to be prepared to do so as a number of its shareholders have trained to be skippers in Denmark – a prerequisite for investing in the Danish fisheries.

The Swedish pelagic sector also experiences informal integration (Olsson, 2018; Claeson, 2018; Paulrud, 2018). Companies make offtake arrangements at the beginning of the year before they go out fishing (Olsson, 2018; Paulrud, 2018). In contrast, in the demersal sector all fish goes to the auction (ibid.). Quota swaps, renting, leasing and borrowing are also common, though usually done through the POs (Claeson, 2018; Paulrud, 2018).

According to Olsson, integration has had little impact on prices, company performance, competition within the sector or employment (Olsson, 2018). However, one effect of the introduction of the ITQ system in the demersal segment in 2017 is that the older vessels stay in the harbour (ibid.). The newer vessels use the quotas from the older vessels (ibid.). Access to quota is not very difficult as the price of a vessel with quota is not high these days (ibid.).

Claeson reports that horizontal integration has had a positive impact on company performance (Claeson, 2018). The quota system and the horizontal integration have improved the efficiency of fishing efforts as it makes it possible for the fishermen to catch greater loads on fewer trips (ibid.). This in turn minimises the use of the boats and diesel,

thus reducing the costs and increasing overall profitability (ibid.). Before the introduction of the ITQ system, the boat had to be in use all year around to make a living (ibid.). Claeson also states that the fleet size has decreased since the introduction of the ITQ system (ibid.).

Paulrud of the SPF similarly states that fleet sizes have decreased since the introduction of the quota management system (Paulrud, 2018). Since the Swedish Parliament took the decision to introduce the Quota system in 2009, the pelagic fleet has decreed from 84 to around 30 vessels (ibid.). The effect has been higher profitability and gains for the environment and for the fish stocks (ibid.). Moreover, Paulrud argues that the introduction of the ITQ system has led to positive reactions from fishermen, even those that sold their licences (ibid.). This is seen to be primarily tied to the fact that the quotas are issued regionally. Consequently, this has not caused the disappearance of the industry in certain regions, but instead preserved it through higher profitability (ibid.). He adds that the introduction of the quota management system has resulted in many younger people becoming interested in working in the sector (ibid.).

According to Olsson, the fleet is too small nowadays (Olsson, 2018). Fishing is badly managed from the political side (ibid.). There is space for more boats, illustrated by the fact that SEK 1 million worth of quotas are left unused (ibid.). In the Baltic Sea, only 50% of the Swedish quotas are actually fished (ibid.). The reason for fewer vessels is not that quotas have decreased in recent years (ibid.).

25. UNITED KINGDOM

KEY FINDINGS

- **Majority** of catch harvested in **Northern North Sea** and **West of Scotland**
- **Limited** structural **vertical** integration
- **High** levels of structural **horizontal** integration, 13 companies hold 60% of quota
- Non-structural vertical integration is common
- Non-structural horizontal integration through **quota trade, quota leasing, and quota swapping**

25.1. Composition of UK seafood sector

The UK fish and seafood market was estimated to be worth €5 billion in 2015 (Infinity Research, 2015a, p.30). It was the fifth-largest fish and seafood market in Europe, accounting for 5.73% of revenue in 2015 (ibid.). The UK is the eighth-largest importer of fish and seafood products in the world (ibid.). The main import category is prepared fish and seafood products, followed by fresh and chilled fish and seafood (ibid.).

In 2015, UK fishing companies generated € 1.1 billion in landings income. Fish processing companies added a further € 3.3 billion in production revenues (Table 85).

The UK had a trade deficit of € 1.7 billion in fish and fish products in 2016. It imported approximately € 3.7 billion. Only 33% of these fish product imports originated in EU countries. The UK's largest fish import partners were Iceland (10%), the Faroe Islands (7%) and Germany (7%).

In 2016, the UK exported approximately € 2 billion in fish products. 71% of these exports were destined for EU countries. France was the largest export destination, accounting for 28%. It was followed by the United States (12%) and Spain (10%).

There were 6,304 registered commercial fishing vessels in the UK in 2016, of which 74% were active. These were owned by 5,496 enterprises. 568 fishing companies – 10% of all enterprises – operated more than one vessel.

The fishing segment employed 8,135 fte in 2015. The fish processing segment employed a larger workforce, approximately 13,271 fte.

Table 85: UK seafood sector key figures

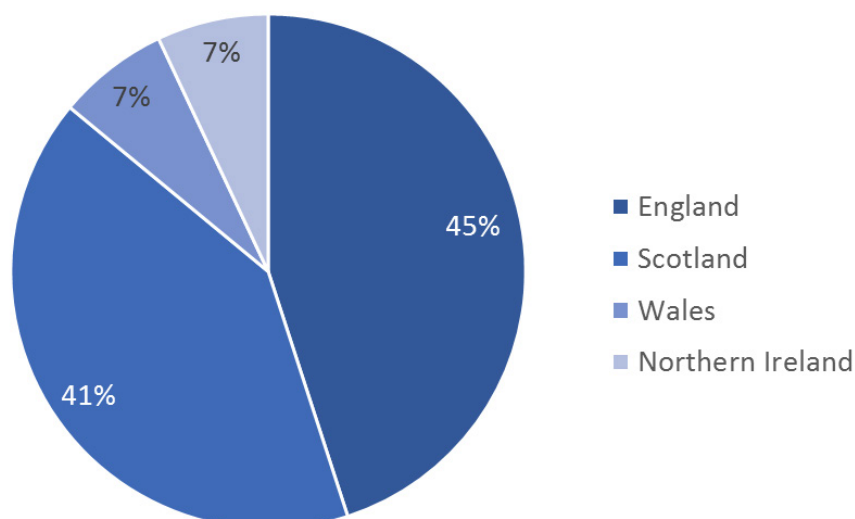
Segment	Measure	Value	Proportion
Fish catching	Number of vessels (2016)	6,304	
	Active vessels (2016)	4,637	74%
	Average vessel tonnage per vessel (2015, GT)	31	
	Average vessel tonnage per enterprise (2015, GT)	36	
<i>Enterprises</i>	Number of fishing enterprises (2015)	5,496	
	Enterprises with more than one vessel (2015, number, % enterprises)	568	10.3%
<i>Production</i>	Income from landings (2015, € mln, % GDP)	1,068	0.04%
	Average landing income per fte employed (2015, €)	131,281	
	Average landing income per vessel (2015, €)	166,350	
	Average landing income per enterprise (2015, €)	194,318	
<i>Employment</i>	Employment fisheries (2015, fte, % workforce)	8,135	0.03%
	Average employment per vessel (2015, fte)	1.3	
	Average employment per enterprise (2015, fte)	1.5	

Segment	Measure	Value	Proportion	
Processing	Processing production (2016, € mln, % GDP)	3,282	0.14%	
	Employment in the fish processing sector (2014, fte, % workforce)	13,271	0.04%	
	Average processing production per fte employed (2015, €)	247,329		
Trade	Trade balance (2016, € mln, % GDP)	-1,746	0.07%	
	<i>Exports</i>	Exports of fish and fish products (2016, € mln, % GDP)	1,992	0.08%
		1. France (2016, € mln, % export)	551	28%
		2. United States (2016, € mln, % export)	247	12%
	3. Spain (2016, € mln, % export)	206	10%	
<i>Imports</i>	Imports of fish and fish products (2016, € mln, % GDP)	3,738	0.16%	
	1. Iceland (2016, € mln, % import)	364	10%	
	2. Faroe Islands (2016, € mln, % import)	272	7%	
	3. Germany (2016, € mln, % import)	259	7%	

Source: Eurostat (2018, January), *GDP and main components (output, expenditure and income) [nama_10_gdp] 2015*, viewed in January 2018; Eurostat (2018, January), *Total employment (resident population concept - LFS) - annual data [lfsi_emp_a] 2016*, viewed in January 2018; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; STECF (2017, December), *STECF 17-12 EU Fleet Economic and Transversal data_national level 2015*; Eurostat (2017, December), *Turnover or gross premiums written (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; Eurostat (2017, December), *Employees in full time equivalent units (NACE Rev 2, C10.20) [sbs_na_ind_r2] 2015*, viewed in January 2018; STECF (2014, December), *STECF 14-21 EU Fishing Processing Industry data tables 2012*; Eurostat (2018, January), *EU trade since 1988 by HS2-HS4 [DS-016894] 2016*, viewed in January 2018.

Figure 120 shows that 45% of the fishermen are located in England and 40% in Scotland (Scientific, Technical and Economic Committee for Fisheries, 2015).

Figure 120: Geographic spread of UK fishermen (2014)

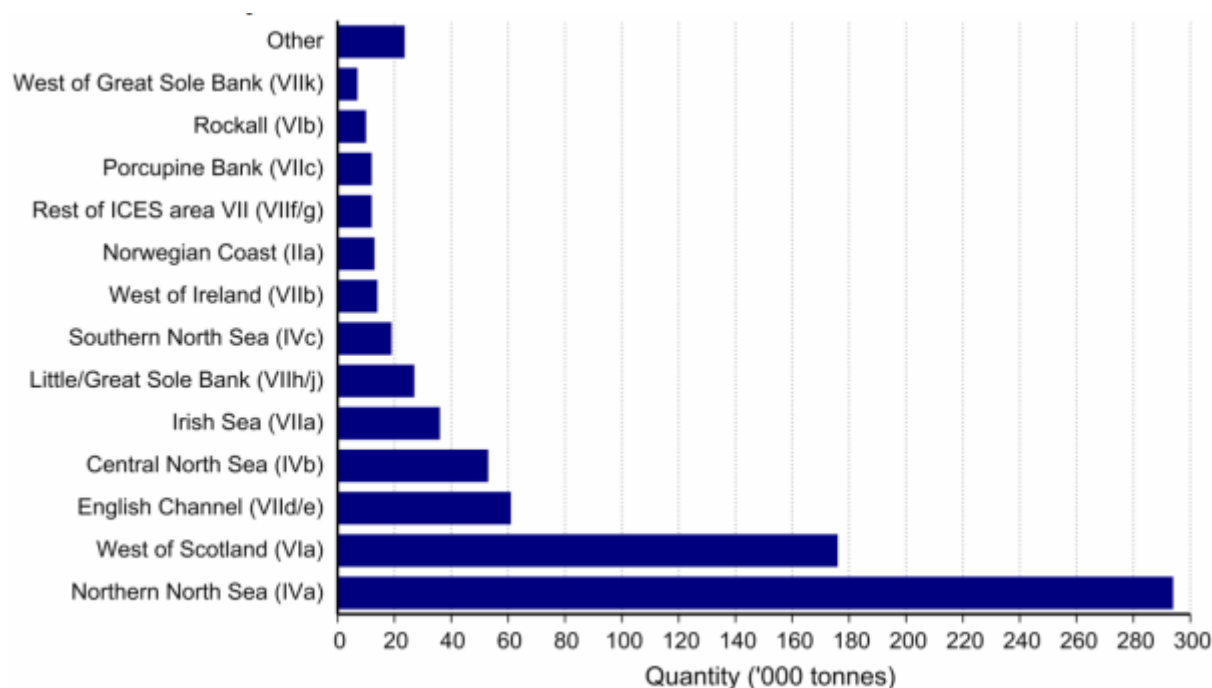


Source: Dixon, S. (2015), *UK Sea Fisheries Statistics 2014*, London: Marine Management Organisation, p. 1.

There is a fairly even distribution of catches in the UK: 35% of the value of landings are demersal fish, 32% are pelagic and 34% are shellfish (Dixon, 2015, p. 3-4). Pelagic fish made up the bulk of the landings in Scotland in 2014, while demersal fish formed a slight majority in England (ibid.). The main pelagic species were mackerel and herring, while the main demersal species were cod, haddock, and plaice (ibid.).

As Figure 121 shows, more than 60% of all landings by UK vessels were harvested in the Northern North Sea or West of Scotland.

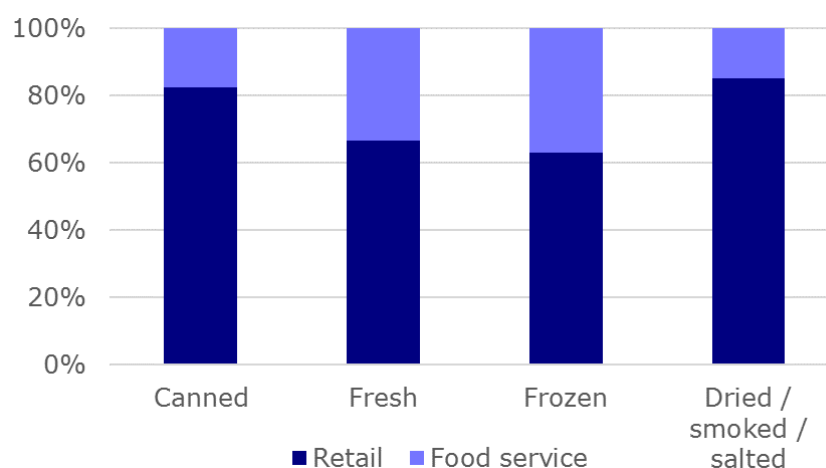
Figure 121: UK catches by sea area (2014)



Source: Dixon, S. (2015), *UK Sea Fisheries Statistics 2014*, London: Marine Management Organisation, p. 1.

Half of the fish and fish products that enter the UK market are sold as fresh. Frozen fish accounts for slightly over 20% of all fish and fish products sold in the UK market. Canned and dried/smoked/salted account for 11% and 16% respectively. Just under three quarters of all fish and fish products are sold through retailers, the remainder is sold through the food service industry. More canned and dried/smoked/salted fish and fish products are sold through retailers, more than 80%. 67% of fresh and 63% of frozen fish are sold through retailers (Figure 122).

Figure 122: United Kingdom: Fish product end industry



Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

Half the fresh fish sold in the UK is sold unbranded (see Table 86). 37% is sold with the retailers' own labels, and 13% is sold branded. Three quarters of canned fish and fish products is sold branded, the remainder is sold with retailers' own labels. Slightly more than two thirds of frozen fish and fish products are sold branded, with the remaining third sold with retailers' own labels. A quarter of the dried/smoked/salted products are sold unbranded, 35% branded and the remaining 40% with retailers' own labels.

Table 86: United Kingdom: Fish product retail composition

	Fresh	Canned	Frozen	Dried/ smoked/ salted
Branded	13%	75%	69%	35%
Unbranded	50%			25%
Own label	37%	25%	31%	40%

Source: Food for Thought (2018, January), *Food & Drink Markets 2018 Edition*, Datapack ALL Fresh and Processed Fish - Prepared for Profundo.

In the UK, Seachill (part of Hilton Group) is an important player in the fresh fish segment with a market share of approximately 28% (FFT, 2018 and Icelandic Group, 2017). Marine Harvest (Norway) accounts for about 15% (FFT, 2018). In the frozen fish product sector, Nomad's Iglo brand holds the leading position with a share of approximately 33%, while Young's Seafood (owned by private equity owners Lion Capital, Bain Capital and HPS Investment Partners and currently up for sale) accounts for around 22% (FFT, 2018 and Undercurrent News, 2018b). In the canned fish product segment, John West (Thai Union (Thailand)) is by far the biggest player with a market share of approximately 40%, while Princes (part of Mitsubishi (Japan)) holds about 21% of the market (FFT, 2018). Young's Seafood is also an important player in the dried/smoked/salted segment with a market share of approximately 22%, Marine Harvest is accounting for about 19% (ibid.).

25.2. Producer organisations

There are 24 producer organisations in the United Kingdom. The largest, the Scottish Fish Producers Organisation, represents 190 vessels or 14% of the total fleet. The smallest, the North Atlantic Fish Producers Organisation, represents three vessels.

Table 87 provides an overview of the producer organisations in the United Kingdom.

Table 87: United Kingdom: Recognized producer organisations

Producer organisation	No. of vessels	% of total fleet
Scottish FPO	190	14%
Northern Ireland FPO	111	8%
Cornish FPO	107	8%
South Western FPO	77	6%
Anglo Northern Irish FPO	42	3%
Eastern England FPO	41	3%
Shetland FPO	37	3%
Anglo Scottish FPO	35	3%
Northern Producers Organisation	33	2%
North East of Scotland FPO	30	2%
West of Scotland FPO	30	2%
Fleetwood FPO	25	2%
Isle of Man Non-Sector	20	1%

Producer organisation	No. of vessels	% of total fleet
Fife FPO	19	1%
North Sea FPO	17	1%
The FPO	17	1%
Aberdeen FPO	15	1%
Orkney FPO	10	1%
Interfish	9	1%
Lowestoft FPO	8	1%
Wales and West Coast FPO	7	1%
Lunar Group	5	0%
Klondyke	3	0%
North Atlantic FPO(c)	3	0%
Non-sector vessels (d)	483	35%
Total	1,374	100%

Source: Dixon, S. (2015), *UK Sea Fisheries Statistics 2014*, London: Marine Management Organisation, p. 21.

Among the POs listed above, three are in fact corporations: Interfish, Lunar Group and Klondyke.

The fish quota system in the UK works as follows. There are 44 UK Fisheries Administrations (FAs). They cover the management of UK fish quotas for the International Council for the Exploration of the Sea (ICES) areas I, II, IV, VI, VII and associated areas, and Vb (Faroese waters), for which the UK receives a quota in EU legislation (Department for Environment, Food and Rural Affairs, 2015, p. 1). These areas are spread out between the north of Finland and south west of Ireland, and cover Faroese Grounds.

According to the FQA Register, there are over 8 million FQAs in circulation (Fixed Quota Allocation Register, n.d.).

25.3. Company analysis

This section provides an analysis of the company structures of nine UK companies with the highest fixed quota allocation (FQA) units held. Table 88 provides an overview of the parent companies that own more than 2% of the total UK FQA. Due to the large number of FQA licences (1,094) it was beyond the scope of this research to identify parent companies for all FQA licences. The parent companies were identified for the top 100 FQA licences in terms of FQA units held. Furthermore, fishing companies also have access to FQAs through partnership agreements and minority shareholdings. The information below should thus be considered indicative rather than definitive.

Table 88 shows that 13 companies hold 60% of total UK FQA. The three companies with the highest levels of FQA are Interfish, Lunar Fishing and Andrew Marr International. The remainder of this section will describe the company structures of the nine UK companies with the highest levels of FQA.

Table 88: UK largest FQA owners (2016)

Parent company	FQA units	% of total UK FQA
Andrew Marr International	910,109	11%*
Interfish	810,319	10%
Lunar Fishing	739,153	9%
Klondyke Fishing	506,953	6%
Cornelis Vrolijk	473,454	6%
Voyager Fishing	405,537	5%
L.H.D.	319,160	4%
Don Fishing	195,350	2%
Mewstead	194,770	2%
Parlevliet & Van der Plas Group	191,255	2%
Antares Fishing	143,834	2%
Zephyr Fishing	139,434	2%
<i>Other</i>	<i>3,341,608</i>	<i>40%</i>
Total	8,264,090	100%

Gov.UK (2016), "Fixed Quota Allocation Register", online: <https://www.fqaregister.service.gov.uk/browse#tabs=1>, viewed in April 2016.

Note: * Andrew Marr acquired Caley Maritime in 2018.

25.3.1. Andrew Marr International

As shown in Table 88, Andrew Marr International holds approximately 910,109 FQA units, equal to roughly 11% of total UK FQA units.

The director of Andrew Marr International is Alexander George Marr. He is also one of the shareholders. The other shareholders are C. L. Marr, S. A. Marr, N. L. Rathbone, A. J. Panton and A. L. Marr.

Andrew Marr International has 22 subsidiaries that are active in the fisheries sector. Many of these subsidiaries are dormant. Ten of the subsidiaries have their own subsidiaries, of which three in turn also have their own subsidiaries, of which two have yet more subsidiaries. Among the subsidiaries are Humber Fishing and Viking Fishing, the two largest FQA owners in the UK (Table 89).

Humber Fishing owns the most FQA units of all fishing companies in the UK. The ultimate parent is Andrew Marr International. Humber Fishing has four subsidiaries in which it has a 50% stake. The remaining 50% stake is held by Viking Fishing and director of both Humber Fishing and Viking Fishing, M. J. Dougal.

Andrew Marr International generated a total revenue of € 644 million in 2015, up from € 634 million in 2014 (Andrew Marr International, 2016, p. 7-8). The company generated profits of € 18.5 million in 2015, up slightly from € 18.1 million in 2014 (ibid.). Andrew Marr International had total assets of approximately € 185 million in 2015, up from € 164 million in 2014 (ibid.).

Table 89 provides an overview of the Andrew Marr International company structure. The company has investments in fish catching, processing, storage, and trade.

Table 89: Andrew Marr International company structure

	1st subsidiary	2nd subsidiary	3rd subsidiary	4th subsidiary
1	Almarr Seafoods Limited (dormant) – 100%			
2	Andrew Johnson Knudtzon Limited (cold storage) – 100%			
3	Attain Fishing Limited (Fish catching) – 100%			
4	Castlewood Fishing Limited (Fish catching) (dissolved) – 100%			
5	Fair Isle Fishing Limited (Fish catching) – 100%	Coolships 2 Limited (Fish catching) – 100%		
		Darpa Holdings (British Virgin Islands) – 100% -		
6	Falcon Fishing Limited (Fish catching) – 100%			
7	Good Hope Fishing Limited (Fish catching) – 100%			
8	Humber Fishing Limited (Fish catching) – 100%	Ocean Dawn Fishing LLP – 50%		
		Courageous Fishing LLP – 50%		
		GS Fishing LLP – 50%		
		Livingstone Fishing LLP – 50%		
9	J. Marr (Aberdeen) Limited (dormant) – 100%	Bon-Accord Fish Selling Company Limited (dormant) – 99.99%		
		Forward Motor Trawlers Limited (dormant) – 99.99%		
		Johnstone Motor Trawlers Limited (dormant) – 99.99%		
		Rangor Fishing Company Limited (dormant) – 99.99%		
		Peter & J. Johnstone Limited (Fish catching) – 99.98%	Buchan Trawlers Limited (dormant) – 100%	

	1st subsidiary	2nd subsidiary	3rd subsidiary	4th subsidiary
			Grampian Sea Fishing Limited (Fish catching) – 100%	MV Acorn (Scotland) – 75%
				MV Arcturus (Scotland) – 62.5%
				MV Fear Not (Scotland) – 75%
				MV Ardent (Scotland) – 25%
			M.F.E. Fishing Company LTD. (dormant) – 100%	
10		Minerva Fishing Limited (Fish catching) – 100%		
11		North East Fisheries Limited (Fish catching) – 100%	P/F Jókin (fish exporte, Faroe Islands) - >5%	
12		Tyne Fishing Limited (Fish catching) – 100%	Sophie Louise Fishing LLP (England and Wales) – 50%	
13		Viking Fishing Limited (Fish catching) – 100%	Ocean Dawn Fishing LLP – 50%	
			Courageous Fishing LLP – 50%	
			GS Fishing LLP – 50%	
			Livingstone Fishing LLP – 50%	
14		J. Marr Seafoods (Holdings) Limited (dormant) – 99.99%	J. Marr (Sea Products) Limited (dormant) – 99.95%	
15		Prime Fish Company (Newcastle) Limited (THE) (Fish catching) (dormant) 99.98%		
16		Rusmar Limited (dormant) – 99.97%	Atlantic Seafoods International Limited (dormant)– 99.99%	
17		A.M.I Cold Stores Limited – 99.92%		
18		J.E. Sowden Limited (Fish catching) (dormant) – 99.90% check		

	1st subsidiary	2nd subsidiary	3rd subsidiary	4th subsidiary
19		J. Marr (Grimsby) Limited (dormant) – 99.80%		
20		Fastnet Holdings Limited (Fish catching) – 99.10%	Wright & Eddie Limited (Fish catching) – 100%	
			Fastnet Fish Limited (Fish catching) - >50%	F A S 2000 Limited (Fish catching) – 90%
				Westcountry Seafoods Limited – 52%
			Fastnet Highlands Limited (Fish catching) – 15%	
21	J. Marr (Seafoods) Limited (Fish catching, trade) – 96.58%	J. Marr (Commodities) Limited (Fish catching) – 100%		
		Clenham Limited (dormant) – 99.99%	Jaymarr (Seafoods) Limited (dormant) – 93%	
		James Wight (Hull) Limited (dormant) – 99.96%		
		J. Marr Seafoods (Ship Services) Limited (dormant) – 99.93%		
		Geo T Baker (Mansfield) Limited (dormant) – 99.90%		
		J Marr (Management) Services Limited (dormant) – 100%		
		British Mackerel Exports Limited (dormant) – 50%		
22	Marrfish Limited (Fish catching) – 70%			

Source: Orbis, "Andrew Marr International" viewed in May 2016; Humber Fishing Limited (2015, April), Abbreviated Financial Statements for the year ending 31 March 2015, p. 3-4; Fair Isle Fishing Limited (2015, March), Abbreviated Financial Statements for the year ending on 31 March 2015, p. 4; Viking Fishing Limited (2015, March), Abbreviated Financial Statements for the year ending on 31 March 2015, p. 4.

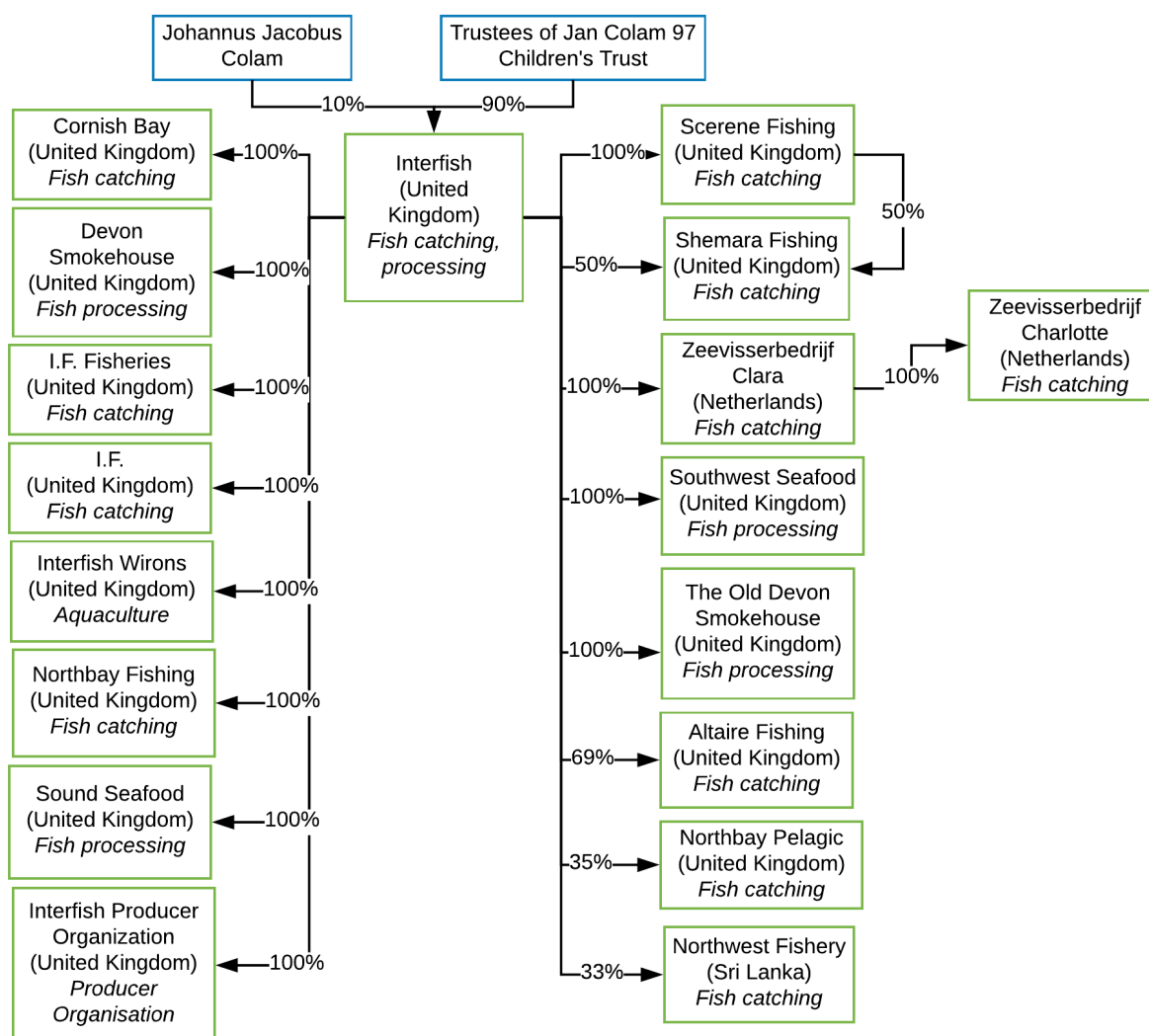
Andrew Marr International shows evidence of vertical integration, from fish catching to cold storage, logistics and trade. The company also shows a large degree of horizontal integration at the fish catching level. This is most likely due to a desire to gain access to quota and to expand production capacity. Investments in other fish catching companies is limited to the UK (McClenaghan and Boros, 2016).

25.3.2. Interfish

As shown in Table 88, Interfish holds approximately 810,000 FQA units, almost 10% of the UK total. In 2014, the company had a total operating revenue of € 109 million, up from approximately € 70 million the previous year (Orbis, 2016b). The company made a total profit of approximately € 28 million in 2014, up from € 19 million in 2013 (ibid.). Interfish had total assets of approximately € 198 million in 2014, in 2013 total assets were € 170 million (ibid.).

Figure 123 provides an overview of the Interfish company structure. Johannus Colam is the company's majority shareholder. Figure 123 shows that Interfish has a number of fish catching and processing subsidiaries. The company also has fish catching subsidiaries in the Netherlands. Finally, Interfish also has its own producers organisation. This can likely facilitate quota allocation.

Figure 123: Interfish company structure



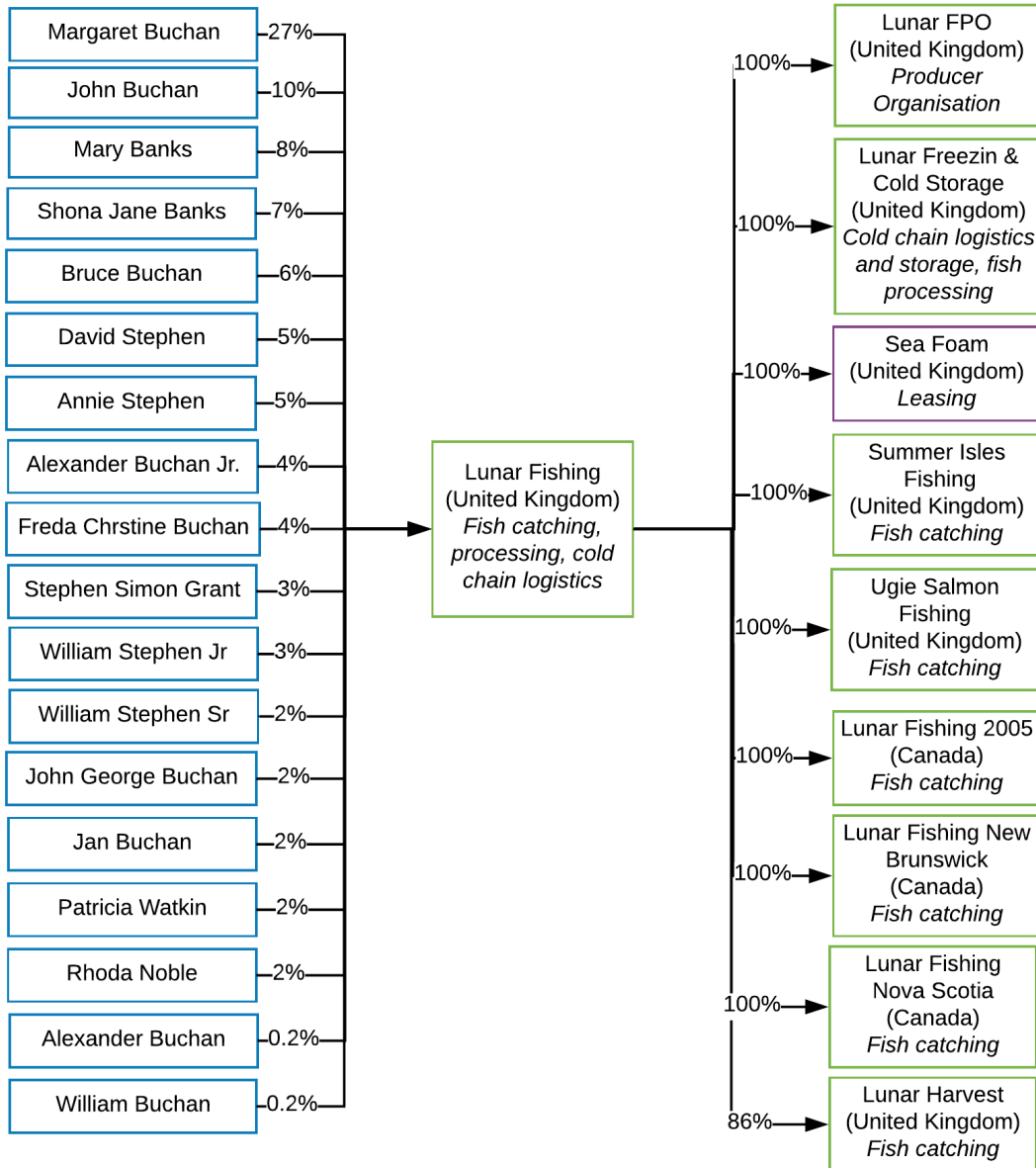
Source: Orbis (2016, June), "Controlling shareholders: Interfish"; Orbis (2016, June), "Current subsidiaries: Interfish"; Interfish (2016), Strategic Report, Report of the Director and Consolidated Financial Statements for the year ending 31 January 2015, p. 18-19; Interfish Limited (2016, January), Annual Return 2015, p. 4.

The Interfish company structure shows significant levels of both vertical and horizontal integration. Vertical integration is limited to fish catching and fish processing, with no identified investments in distribution or retail. Interfish shows horizontal integration at both the national and international levels, with investments in fish catching companies in the UK and abroad.

25.3.3. Lunar Fishing

As shown in Table 88, Lunar Fishing holds approximately 739,000 FQA units, equal to roughly 9% of the total UK FQA. In 2014, the company had a total operating revenue of € 120 million, up from € 110 million in 2013 (Orbis, 2016e). Lunar Fishing generated a profit of € 20 million in 2014, and approximately € 13 million in 2013 (ibid.). The company had total assets worth approximately € 161 million in 2014, up from € 151 million in 2013 (ibid.).

Figure 124: Lunar Fishing company structure



Source: Orbis (2016, June), "Controlling shareholders: Interfish"; Orbis (2016, June), "Current subsidiaries: Interfish"; Lunar Fishing (n.d.), "About", online: <http://www.lunarfreezing.co.uk/about.html>, viewed in June 2016; Lunar Fishing (2016), Group Strategic Report, Report of the Directors and Consolidated Financial Statements for the year ending 31 December 2014, p. 20-21.

Figure 124 provides an overview of the Lunar Fishing company structure. The company is owned by a number of individuals. The largest shareholder, with 27% of total shares, is Margaret Buchan. Lunar Fishing has subsidiaries engaged in both fish catching and fish processing. The company has investments both in Scotland and in Canada. Similar to Interfish, Lunar Fishing also has its own producers organisation.

Lunar Fishing shows evidence of both vertical and horizontal integration. Vertical integration is evident through investments in fish catching, fish processing and cold chain logistics. The company does not, however, have investments in retail.

Horizontal integration is evident through investments in fish catching companies domestically as well as in Canada.

25.3.4. Klondyke Fishing

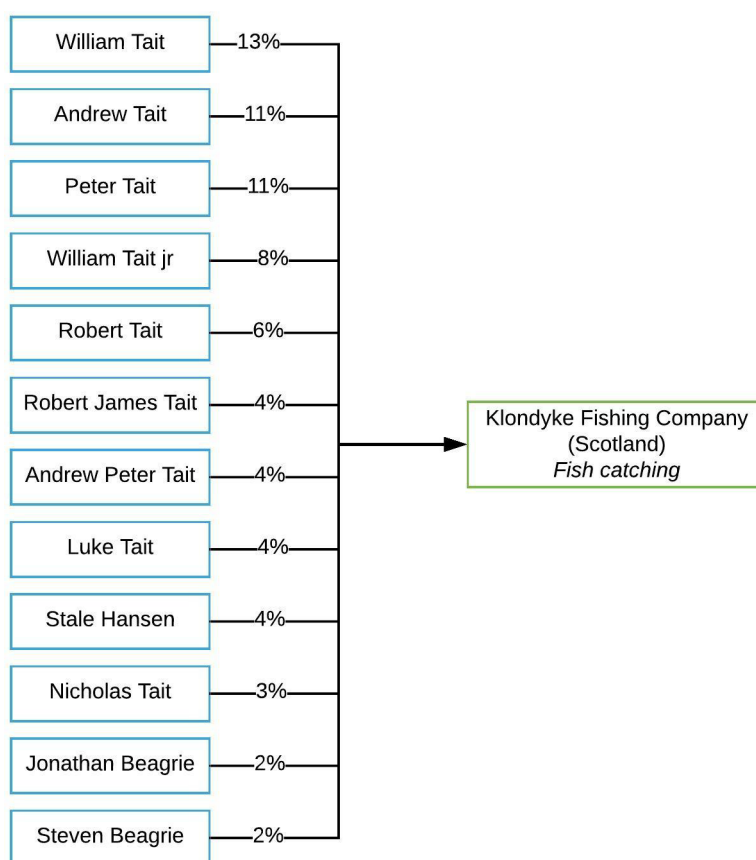
As shown in Table 88, Klondyke Fishing holds approximately 507,000 FQA units, roughly 6% of all UK FQA units.

Klondyke generated a turnover of € 35.5 million in the financial year ending on 30 June 2015, down from € 36 million the previous year (Orbis, 2016c). The net profit was € 15.2 million in 2015, and € 17.2 million in 2014 (ibid.). Klondykes' total assets were € 44.6 million in 2015, up from € 44 million the previous year (ibid.).

Figure 125 shows that Klondyke Fishing has 12 shareholders and no subsidiaries. All its FQA is distributed over three vessels (Gov.UK, 2016).

Klondyke Fishing shows a degree of horizontal integration.

Figure 125: Klondyke Fishing company structure



Source: ORBIS (2016, June), "Shareholders: Klondyke Fishing Company".

25.3.5. Cornelis Vrolijk

As shown in Table 88, Dutch Cornelis Vrolijk (see section 18.3.2) holds approximately 473,000 FQA units, roughly 6% of the total UK FQA.

Cornelis Vrolijk generated a turnover of € 288 million in 2013 (the most recent year for which data were available) (Cornelis Vrolijk Holding, 2016). In 2012 it generated € 321 million (ibid.). In 2013 the company made a profit of € 18 million, down from € 46 million the previous year (ibid.). Cornelis Vrolijk had total assets of approximately € 301 million in 2013, and € 318 million in 2012 (ibid.).

Most of Cornelis Vrolijk's subsidiaries are based in the Netherlands. Only North Atlantic Holdings Limited and its four subsidiaries are based in the United Kingdom (for the company structure of Cornelis Vrolijk see section 18.3.2.)

North Atlantic Fishing Company Limited is one of North Atlantic Holdings' subsidiaries. North Atlantic Fishing Company had a revenue of €24.2 million in 2014 (Orbis, 2016f). That was about € 800,000 more than the year before (ibid.). The company made a net profit of € 3.8 million, € 1.4 million less than in 2013 (ibid.). North Atlantic Holdings had total assets worth about € 21.2 million in 2014, and one million less in the previous year (ibid.).

Cornelis Vrolijk shows evidence of both vertical and horizontal integration. Vertical integration is limited to fish catching and primary processing. However, horizontal integration has taken place both domestically in the Netherlands, as well as through investments in the UK, France and Spain.

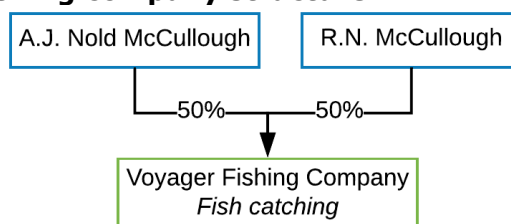
25.3.6. Voyager Fishing

As shown in Table 88, Voyager Fishing holds approximately 406,000 FQA units. This is equal to about 5% of the total UK FQA units.

Voyager's turnover was €21 million in 2014, roughly the same as the previous year (Orbis, 2016g). The company's net profit was approximately € 1.8 million in 2014, down from € 8 million in 2013 (ibid.). Voyager Fishing's total assets were approximately €77 million in 2014, down slightly from € 78 million in 2013 (ibid.).

Figure 126 shows that Voyager Fishing Company has two shareholders, who each own 50% of the company. There is no information about subsidiaries. In fact, all of Voyager Fishing Company's quota is concentrated on one vessel (Gov.UK, 2016).

Figure 126: Voyager Fishing company structure



Source: Orbis, "Share ownership: Voyager Fishing Company, Limited", viewed in June 2016

There is no evidence of either vertical or horizontal integration in the company structure of Voyager Fishing Company.

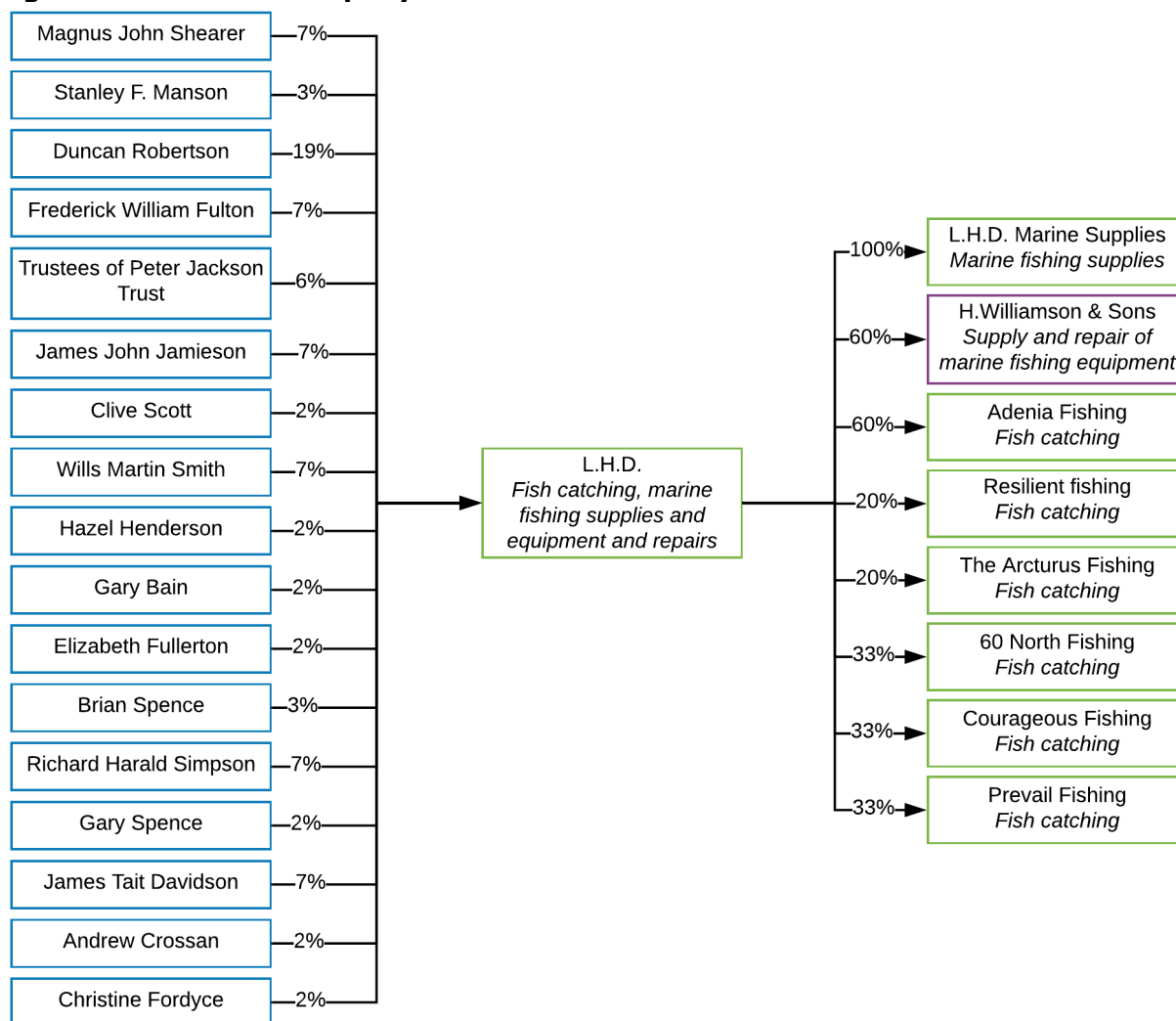
25.3.7. L.H.D.

As shown in Table 88, L.H.D. holds about 320,000 FQA units, approximately 4% of all UK FQA units.

L.H.D. generated a turnover of € 28 million in 2015, down from € 33 million in 2014 (L.H.D. Limited, 2016, p. 6-8). The company achieved a profit of approximately € 3.3 million in 2015, up from € 2.3 million the previous year. L.H.D. had total assets worth approximately € 36 million in 2015, down from € 41 million in 2014 (ibid.). Figure 127 provides an overview of the L.H.D. company structure.

Between 1969 and 1994, the company took over several other companies. In 1969, L.H.D. acquired the local net manufacturing and repair company D & A Duthie (L.H.D. Limited, n.d.). A new subsidiary company, L.H.D Net Mending Limited, was set up in 1969 (ibid.). In this way L.H.D could continue the net manufacture and repair business and expand the range of supplies and services offered to its customers (ibid.). L.H.D Net Mending Ltd changed its name to L.H.D Marine Supplies in 1996 (ibid.).

Figure 127: L.H.D. company structure



Source: L.H.D. Limited (2016, May), Annual Return 2015, p. 8-9; L.H.D. Limited (2016, May), Financial Statements for the year ending 30 September 2015, p. 20; L.H.D. Limited (n.d.), "History", online: <http://www.lhdlimited.co.uk/about/history>, viewed in April 2016.

In 1983, L.H.D. took over the local electronics company H. Williamson & Sons of Scalloway (L.H.D. Limited, n.d.). Then a new company, H. Williamson & Sons (Scalloway) Limited, which specialises in the supply and servicing of electronics for the marine, aquaculture and fish processing industries, was formed (ibid.).

In 1985, L.H.D took over J&M Shearer Ltd and formed a new company J&M Shearer (Ice Supplies) Ltd. New ice plants were built in Lerwick and Scalloway (L.H.D. Limited, n.d.). The company became part of L.H.D Marine Supplies Limited in 2004 (ibid.).

In 1994, L.H.D. took over the local company Oceansafe Ltd, which specialised in the production of nets for the salmon and fishing industries (L.H.D. Limited, n.d.). A new company, Oceansafe (Shetland) Ltd, was formed on 5 September 1994 (ibid.). The company ceased trading in February 2004 (ibid.).

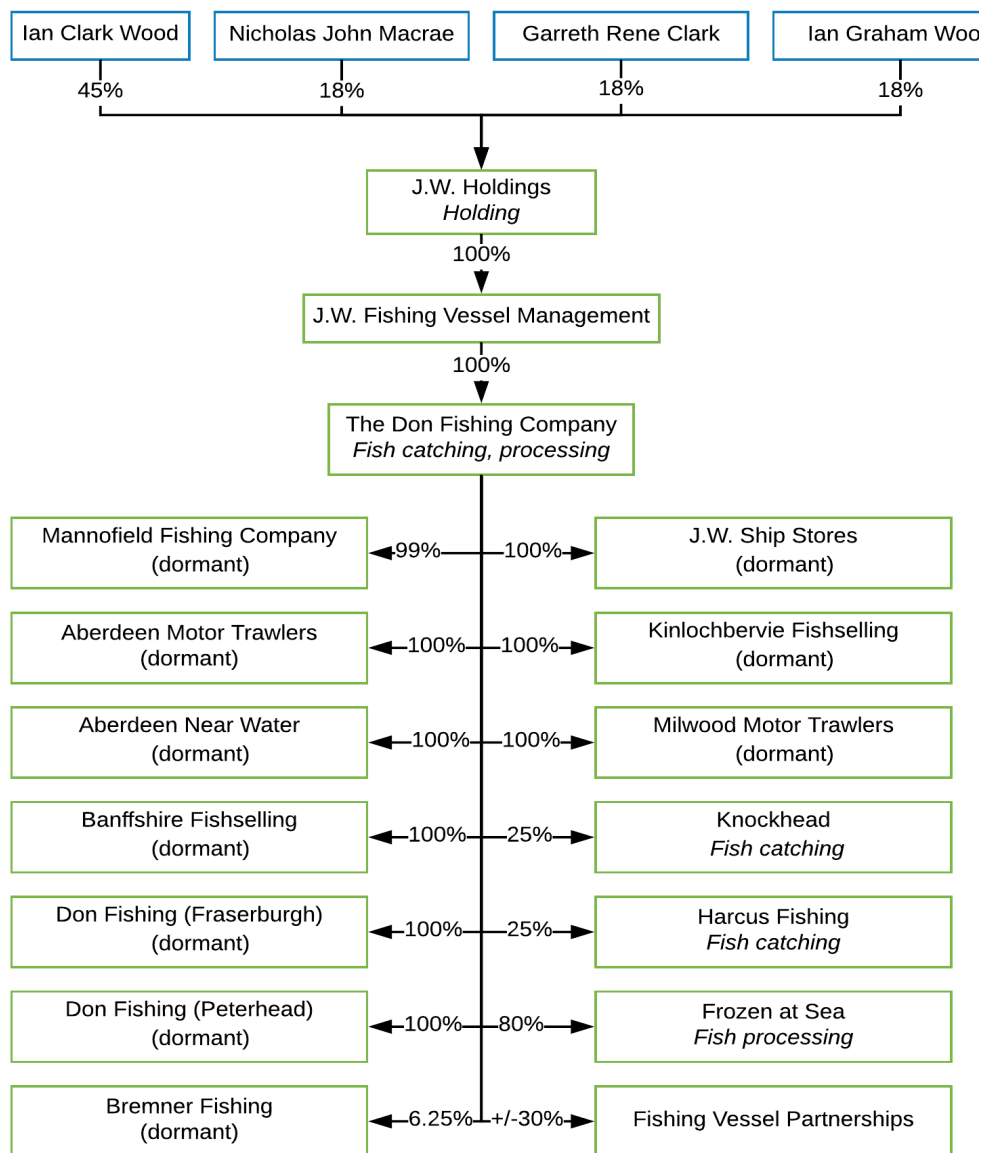
Today nets are designed, manufactured and repaired by L.H.D Marine Supplies Limited (L.H.D. Limited, n.d.). The company also specialises in the supply of ship chandlery, wire rope and chain, fishing gear, lifting gear and the supply of fuel oil (L.H.D. Limited, n.d.).

From the company structure and the description of L.H.D.'s history, it is evident that the company has engaged in a diversification strategy within the fish catching segment. Rather than investing in processing, the company has invested in supplies and equipment, sales and repairs. The company structure also shows evidence of horizontal integration through its investments in a number of fish catching companies. L.H.D.'s access to quota is higher than reported in Table 88 through its minority investments of less than 50% in five fish catching companies.

25.3.8. Don Fishing

As shown in Table 88, Don Fishing holds approximately 195,000 FQA units, roughly 2% of the UK total. The total FQA which Don Fishing has access to is likely to be higher given its minority investments in other fishing companies.

Figure 128: Don Fishing company structure



Source: Orbis, "The Don Fishing Company, Limited", viewed in May 2016; McKenzie, B. (2016, May 21), Interview with Ward Warmerdam of Profundo; J.W. Holdings (2016, May), Annual Return 2015, p. 6; J.W. Holdings (2015, September), 2014 Annual Report and Financial Statements, p. 21-23.

Figure 128 shows the company structure of Don Fishing. Don Fishing's direct parent is J.W. Fishing Vessel Management and the ultimate parent is J.W. Holdings. Ian Wood and his family own J.W. Holdings. Of the 14 Don Fishing subsidiaries, only two are still active, Frozen at Sea (a processing company) and Fishing Vessel Partnerships.

Don Fishing Company generated a gross profit of € 2.6 million in 2014, whereas the profit was almost € 1.3 million in 2013 (J.W. Holdings, 2015, p. 6-8). The group had total assets worth € 28 million in 2014.

Ultimate parent company J.W. Holdings had a turnover of approximately € 21 million in 2014, down from € 20 million the previous year (J.W. Holdings, 2015, p. 6-8). Profit amounted to € 2 million in 2014, up from €0.8 million in 2013. J.W (ibid.). Holdings had total assets worth approximately € 31 million in 2014, € 28 million the previous year (ibid.).

In an interview, the managing director of Don Fishing (Bill McKenzie) provided further details regarding the company. Don Fishing does not own its fleet outright (McKenzie, 2016). It owns on average 30% of each vessel in its fleet; some more, some less (ibid.). It calls this kind of relationship with the vessel a partnership. Don Fishing used to have 31 partnerships, in 2016 it still had 16 (ibid.). However, it has now amassed sufficient quota to be profitable (ibid.). Don Fishing is catching less fish with 16 boats, but not much less as the boats now have more quota (ibid.). There is also a better business strategy (ibid.). *"The guys that remain are the best at what they do. They are not just fishermen, they are thinkers and business men"* (ibid.). As a result, fishing strategies are far and away better than before (ibid.).

Don Fishing does not have formal off-take arrangements but what it calls "understandings" (McKenzie, 2016). Some of these are long standing. The understandings imply that some vessels will always supply specific companies (ibid.). For example, Don Fishing has such an "understanding" with Lunar Freezing and Seafood Ecosse (ibid.).

Don Fishing also engages in quota leasing (i.e. for cash), quota swapping (i.e. for quota of different species), and borrowing quota from the PO (McKenzie, 2016).

From the company structure of Don Fishing it is apparent that Don Fishing has engaged in both vertical and horizontal integration. Vertical integration is evident through its investments in both fish catching and fish processing companies. It does not, however, have investments further downstream in distribution and retail. The company also shows evidence of horizontal integration through its investments in a number of fish catching companies and through its Fishing Vessel Partnerships. However, horizontal integration is limited to the UK.

25.4. Integration

As the company analysis in section 25.3 shows, there is a high degree of structural vertical and, particularly, structural horizontal integration in the UK fisheries. Several of the analysed companies have investments both in the downstream and midstream segments, from fish catching to fish processing, and in a number of instances also cold chain logistics. This research did not identify any UK companies with complete vertical value chain integration. A significant characteristic of the UK fisheries is that three companies also own their own PO. This is similar to findings in Estonia (see Chapter 8). David Anderson of the Aberdeen PO states that structural vertical integration is more common in the pelagic segment, although there is some vertical integration in the whitefish segment as well (Anderson, 2016). For example, Lunar Group has both a whitefish and pelagic fleet, and has processing facilities for both whitefish and pelagic fish species (ibid.). The general trend, in cases of structural vertical integration, has been fish catching companies investing in downstream segments (ibid.).

During the decommissioning schemes in 2003-2004 and 2011, many smaller companies sold out, and bigger companies, such as Don Fishing and Andrew Marr International, bought up

the quotas (Coghill, 2016). Alan Coghill of the Orkney PO reports that a number of large companies, such as those mentioned above, have “interests” in fishing vessels in different POs (ibid.). They help fishermen obtain boats and quotas, as well as owning and leasing out their own quotas (ibid.). Given that banks have lost confidence in government policies and deliberations regarding quotas, they are no longer eager to accept FQAs as collateral for bank loans (ibid.). Now the big companies help attract bank finance for small fishing companies and fishermen through partnership agreements, as for example Don Fishing does (ibid.).

There is also a high level of structural horizontal integration. This is evident in the fact that 13 companies hold approximately 60% of total UK FQA (see Table 88). These companies are likely to have access to even higher levels of FQA through their minority investments in a number of fish catching companies. The high level of quota concentration is likely to be the result of the UK not imposing quota limits (McKenzie, 2016 and Coghill, 2016). There is government oversight through the UK quota trade register (McKenzie, 2016).

Coghill argues that there is no flagging protection, i.e. there is no protection against high levels of beneficial owners being foreign. As a result, there are a large number of ultimately foreign owned vessels in, for example, Scotland (Coghill, 2016). However, Coghill notes that these are not necessarily in direct competition with Scottish fishermen as the foreign vessels target different species (ibid.). Anderson adds that vessels in the Scottish fisheries tend to be family-owned, or a combination of family-owned with a fishing vessel partnership such as with Don Fishing (Anderson, 2016).

The level of horizontal integration is also dependent on the targeted segment. Kevin McDonnell of the West of Scotland PO states that there is hardly any horizontal integration in the netrops segment (McDonnell, 2016).

Anderson argues that both structural vertical and structural horizontal integration is motivated not only by the needs of the business but also to cut costs (Anderson, 2016). There are three big cost factors in the fisheries industry. These are quota, fuel and labour. The main drivers for change are quota and fuel (ibid.).

The UK fisheries also have forms of non-structural integration. Coghill states that there are forms of non-structural vertical integration in the UK fisheries. In the Orkney region there are no processing facilities, therefore, fishing companies located in Orkney tend to land their catch on the mainland of Scotland, the Shetlands or Denmark (Coghill, 2016). Fish catching companies often have off-take arrangements with processing companies, although these are not necessarily formalised (McKenzie, 2016 and McDonnell, 2016).

Anderson states that the FQA system has been in place since 1999, and quota/FQA trading started from day one (Anderson, 2016). Coghill reports that quota leasing is common in the Orkney PO. Quota leasing is done through agents and between POs (Coghill, 2016). Companies also engage in quota swapping within the PO, both domestically and internationally (McKenzie, 2016).

26. CONCLUSION

The degrees, mechanisms and drivers of both structural and non-structural integration vary significantly among the EU Member States with a coastline (see Table 90 for an overview). These processes are affected by a broad range of different factors, many of which are inter-linked in diverse ways. This chapter will describe the observed trends and present an analysis of the influencing factors identified within the scope of the research at hand.

The observed trends generally fall into three broad, inter-linked categories: regulatory environment, natural resources, and firm performance. The remainder of this chapter is organized as follows: section 26.1 describes how regulatory environment factors influence the processes of integration; section 26.2 outlines the natural resource factors that influence processes of integration; section 26.3 details the influences of firm performance on integration, and; finally, section 26.4 provides a conclusion based on these observations.

Table 90: Overview of integration in EU Member States with a coastline

Country	Structural integration		Non-structural integration	
	Vertical	Horizontal	Vertical	Horizontal
Belgium	No. Main target is demersal species not subject to processing.	Yes, some horizontal integration. 34% of fleet foreign-owned.	Fish is sold at auction.	No. Due quota management system restrictions.
Bulgaria	Yes. Many key fishing companies have developed processing plants.	Very limited horizontal integration due to lack of resources and regulatory instability.		
Croatia	Limited vertical integration through cooperatives.	No horizontal integration identified.		
Cyprus	No. Very limited processing due to lack of raw materials.	Two integrated groups.	Tuna and pelagic species exported directly to Spain and Malta. Demersal species sold in harbours.	
Denmark	Very limited.	Domestically, both in demersal and pelagic segments. Very little foreign investment in demersal segment. Significant foreign investment in pelagic segment.	Particularly in the pelagic segment. Although majority of pelagic and demersal harvests sold at auction or markets.	Trade in quotas now stable. Renting in and out of quota, particularly in the demersal segment.

Country	Structural integration		Non-structural integration	
	Vertical	Horizontal	Vertical	Horizontal
Estonia	High levels of integration in Baltic Sea and Gulf of Riga segment, particularly fish catching and fish processing. Integration less common in Baltic Coastal segment.	Both in the same PO, and Estonian fishing companies investing abroad, particularly in Finland.	Due to high level of structural integration, less non-structural integration.	Trade in quotas now stable. Quota swapping and renting is common. A formal system will be introduced to facilitate this.
Finland	Limited vertical integration due to unstable resources.	High level of foreign investment in pelagic segment, especially from Estonian companies. Limited horizontal integration in demersal segment as it is not lucrative.		Recent introduction of individual quotas. Quota swapping and leasing may still develop.
France	Limited, with a few exceptions.	Limited, though there is some integration domestically. A growing trend is Spanish fish catching companies investing in France.	Limited due to varied catch composition. Majority of harvest sold in market.	No quota trade. Quota leasing is illegal. There is quota swapping.
Germany	Yes. Pelagic trawler fleet controlled by vertically integrated foreign companies.	Yes. Particularly in pelagic segment.	In small-scale fisheries in form of product marketing.	
Greece	No. Fish processing companies have not invested in fish catching companies or vice versa.	No. Fisheries dominated by small-scale fishermen.	Yes. Fish are bought at auction, and processing and export companies have informal arrangements with local fishermen.	

Country	Structural integration		Non-structural integration	
	Vertical	Horizontal	Vertical	Horizontal
Ireland	Yes, mainly in the pelagic segment.	Some integration in pelagic and demersal segments, including foreign investment. However, as quota is not linked to vessels directly domestic horizontal integration limited.	Shellfish segment processors buy directly from vessels. Whitefish is marketed by cooperatives.	Limited due to quota management restrictions
Italy	Limited to bluefin tuna segment.	Large geographical and segment differences. Most evidence of horizontal integration in bluefin tuna segment.	Offtake arrangements quite common.	Joining of quotas in consortia as low levels of raw materials impact financial performance. No quota transfers.
Latvia	Yes. Particularly in canned and smoked sprat segment.	Yes, primarily in pelagic segment.	POs play significant role in marketing product.	Quota swaps common. Quota leasing less common.
Lithuania	Yes. A number of companies part of large fully-integrated groups, including international groups.	Yes. More than 40% of enterprises own more than one vessel.		Quota swaps and borrowing.
Malta	Very limited vertical integration.	Limited horizontal integration, sector dominated by small-scale fishermen.		Quota trade among fishermen.
Netherlands	Yes. All pelagic companies vertically integrated. Vertical integration also present in demersal segment.	Extensive horizontal integration both in the pelagic and demersal segments, as well as cross-segment integration.	Not in pelagic segment as all companies are structurally vertically integrated. Offtake arrangements in demersal segment.	Not in pelagic segment as all companies are large and can optimize their fishing plans. Quota swaps, renting, leasing, as well as 'quota parking', all common in demersal segment.

Country	Structural integration		Non-structural integration	
	Vertical	Horizontal	Vertical	Horizontal
Poland	Yes. Large fully-integrated groups active in Poland. Processing segment	Yes, some evidence of horizontal integration. Also some foreign investment.		
Portugal	Yes	Limited. Some investments of Portuguese companies in Spanish fishing companies and vice versa.		
Romania	Limited vertical integration due to cost and unstable legislation.	Yes, some horizontal integration.		
Slovenia	No. Processing industry relies on imports.	No. Although ¼ of all enterprises own more than one vessel.		
Spain	High levels of integration. Initially upstream to downstream, recently also downstream to upstream, driven by access to markets and access to raw materials respectively.	Limited domestic integration due to overcapacity. Significant investment by Spanish fish catching companies in France, the UK and Ireland.	Yes, more common than structural vertical integration.	No quota trade due to overcapacity. Quota swapping in PO, both domestically and internationally.
Sweden	Limited structural vertical integration	Yes, primarily in pelagic sector, and internationally. Swedish companies invest in Denmark, Germany, the Baltic States and Finland.	Pelagic segment offtake arrangements made at the beginning of the year. Demersal segment all fish goes to auction.	Yes, quota swaps, renting, leasing and borrowing are common
United Kingdom	A number of companies with high levels of vertical integration, though not including retail. Notably some companies have own PO.	High levels of horizontal integration. 13 companies hold at least 60% of quota and have access to more through vessel partnerships and minority investments.	Yes, however, off-take arrangements are not generally formalised.	Yes, quota trade, quota leasing, and quota swapping. Quota swapping within PO, both domestically and internationally.

26.1. Regulatory environment

Within the broad category of factors under regulatory environment, this research identified a number of key factors driving or hindering various forms of integration. These are: ease of access; regulatory clarity and stability; and; the fisheries management system.

26.1.1. Ease of access

Ease of access has two aspects. Firstly, the ease with which fish processing companies can invest in fish catching companies, and vice versa. Secondly, the ease with which fish catching companies can enter the market or increase the size of their domestic fleet.

In a few countries, such as Denmark, it was reported that it was difficult for processing companies to invest in fish catching companies due to strict regulatory requirements. Danish legislation requires that investors in fish catching companies are themselves also fishermen. Conversely, fish catching companies find it difficult to invest in processing companies due to unfamiliarity with the business.

However, in countries such as Spain and Bulgaria, legislation and regulatory processes do not obstruct structural vertical integration. In Bulgaria, it was mainly fish catching companies developing processing facilities. However, this strategy was also motivated by a desire to benefit from value-adding and to access broader markets for their products. In Spain, processes of both up- and downstream investment were observed. These were motivated by a desire to add value to products and access new markets, and a desire to guarantee stable supplies of raw materials at stable prices respectively.

In countries where vertical integration was hindered by strict regulations, non-structural processes of vertical integration were more common. Examples are Denmark and Italy.

Ease of access can also help or hinder both domestic and international processes of structural horizontal integration. In Sweden, for example, there is a legislative requirement that fishermen owning Swedish fishing companies must be Swedish citizens. As a result, there may be some domestic horizontal integration, however, foreign investors do not play an active role in Sweden. In a number of other countries, such as Latvia, Lithuania, Belgium, Finland, Germany and the United Kingdom, higher levels of foreign investment were found. Companies from the aforementioned countries were generally not found to engage in foreign investment themselves. This may be due to firm performance, ease of access to capital, or other factors as listed here.

In addition to administrative forms of ease of access, another influencing factor is the market condition. Estonia and Spain have fewer bureaucratic obstacles, however, the market conditions in these countries reduced the levels of foreign investment. Estonia has a strong group of fishing companies that are financially stable and strong enough to invest in other countries. Therefore, foreign investors find it difficult to enter the market. In Spain and Portugal, the level of competition for very low levels of quota due to overcapacity in the sector are unattractive to foreign investors.

26.1.2. Regulatory clarity / stability

In three countries in particular, lack of regulatory clarity and stability have affected processes of integration, namely Bulgaria, Italy and Romania. These regulatory issues can be domestic and EU level. On a domestic level, a lack of comprehensive vision for the fisheries sector affects the structuring of a regulatory framework. A clear comprehensive vision for the fisheries segment can facilitate the development of regulations that consider the strengths, weaknesses, opportunities and threats of the relevant fishery segment. It was beyond the

scope of this research to identify instances where regulatory environments were conducive to the development of the fisheries segment in the countries under analysis. However, it can reasonably be concluded that in countries with a strong fishery segment, a conducive regulatory environment is sure to have played a role in its development. Where the regulatory environment is hindering the development of the sector, respondents mentioned this during the interviews.

For Italy, sector stakeholders indicated a lack of a national vision for the fisheries segment. As a result, the domestic regulatory framework was fragmented and restrictive. Therefore, fish catching companies tend not to engage in structural vertical or horizontal integration. However, processes of non-structural integration were observed that deal with issues of regulatory uncertainty or restrictiveness. Companies pooled their resources as a form of informal horizontal integration or engaged in offtake arrangements in order to guarantee the sale of their products.

In Romania, unstable legislation was seen to hinder downstream investment in processing facilities. However, horizontal integration was commonly observed. The opposite was found in Bulgaria, where vertical integration was more common as fish catching companies sought ways to increase their income. These companies found it more difficult to increase their fleet sizes.

26.1.3. Fisheries management system

In the previous study from 2016 that covered a smaller selection of EU Member States, it was observed that the fisheries management system was not a driver or hindrance to processes of both structural vertical and horizontal integration (Warmerdam et al, 2016). This broader study of all Member States with a coastline confirms that the different fisheries management systems themselves do not alone drive or hinder integration. Whether the system is individual quota, individual transferable quota, gear licenses, or other management system, companies engage in horizontal integration to access more resources, and vertical integration to add value to their products and guarantee the sale of their harvest. Countries such as Belgium, France, Ireland, Bulgaria and the United Kingdom have not implemented the ITQ system. Other countries, such as the Netherlands, Finland, Latvia, Lithuania, Estonia, Spain and Portugal have implemented the ITQ. However, there are strong variations in the levels of integration between both sets of countries and among the countries in the respective sets. This indicates that other factors are more relevant to explain the processes of integration.

Nevertheless, the fisheries management system did play a role in foreign horizontal integration into the Finnish pelagic segment and hindered the development of vertical integration. Until 2017, Finland maintained a 'Olympic' fisheries management system. As this system meant that the companies which fished the most and the quickest harvest the most, it was difficult for companies to maintain a stable supply of raw materials. Therefore, even though they were active in the pelagic segment where vertical integration is more common (see 26.2.1), domestic pelagic fishing companies did not engage in vertical integration as they lacked a stable supply of raw materials. This is likely to change though since Finland introduced the individual quota system for herring and salmon in 2017. It is still too early to observe related trends.

When Finland still applied the 'Olympic' fisheries management system, it was attractive for Swedish, and in particular Estonian fishing companies. Both Sweden and Estonia apply the ITQ system. Therefore, these foreign investors would first harvest in Finland until the fisheries were closed, and then spend the rest of the year fulfilling their respective Swedish and Estonian quotas.

26.2. Natural resources

A number of factors related to natural resources were found to influence the processes of integration. These were: fishing segment; access to sufficient fish stocks; and; historical factors.

26.2.1. Fishing segment

As a general trend in most of the analysed countries, particularly those with fishing activities in the North Sea, Atlantic and Baltic Sea, many fishing companies active in the pelagic segment have engaged in structural vertical integration.

This is due to a number of factors. Pelagic fisheries are considered a relatively 'clean' segment. There is not a lot of by-catch and specific species can be targeted precisely. As such, the supply of raw materials is more predictable and stable. Moreover, the catch volumes in the pelagic segment are far higher than in the demersal segment. Therefore, firms operating in the pelagic segment can have higher incomes. These higher incomes and more predictable/stable supply of natural resources give them sufficient financial resources to engage in downstream vertical integration. The motivation to do so is to generate additional income through value-adding processes, and to put the firm closer to the end market, thus potentially strengthening its negotiating position.

In a number of countries, such as Denmark and Sweden, there was not a high degree of structural vertical integration in the pelagic segment. Companies in these countries were noted to sell their catch to processing companies in the region, such as in Germany or Norway, or at auction. In Denmark it was reported that investment in the processing industry was expensive, and that fishing companies therefore preferred informal offtake arrangements to guarantee the sale of their products.

In the demersal segment, much of the landings are sold directly in the harbours or at auction. This trend was observed in nearly all of the assessed countries. The demersal segment, with its bottom trawling practice, generates a lot of by-catch. This affects the predictability of the supply. Additionally, the catch volumes in the demersal segment are smaller than the pelagic segment. Both these factors significantly affect the financial income of fishing companies active in the demersal segment, often hindering downstream investment in processing. In France, one case of vertical integration in the demersal segment was observed. However, this was a process of upstream investment by a retailer with sufficient financial resources. Moreover, many demersal species are in fact not suited for industrial processing. Consumers prefer fresh or frozen demersal species, over canned or dried/smoked/salted products.

Both structural and non-structural vertical integration was rarely observed in countries targeting predominantly demersal species, such as Belgium and France. In countries with large pelagic sectors, such as the Netherlands, the Baltic states, and the United Kingdom, structural vertical integration was observed more frequently.

26.2.2. Access to sufficient fish stocks

In a number of countries, particularly in the Mediterranean, and in Portugal, a lack of access to sufficient fish stocks was hindering both vertical and horizontal integration. Low levels of fish stocks and/or fishing grounds meant that these fisheries remained small-scale. This may also relate to the targeted species, mainly demersal, bluefin tuna and small pelagic. Countries such as Cyprus, Malta, Italy and Greece have started to develop strong aquaculture sectors in response to insufficient fish stocks.

26.2.3. Historical factors

Historical factors in fact relate to fish stocks, as quota is allocated on the basis of historical track record. In the Netherlands, this was found to be an important driver of horizontal integration, and later vertical integration. With the closure of the North Sea herring fishery in the late 1970s, Dutch fishing companies started fishing in the seas around the United Kingdom. As a result, when the negotiations regarding the CFP were taking place, these companies could lay claim to quota both in the North Sea and in the seas around the United Kingdom. This historical coincidence put fishing companies, particularly those engaged in the pelagic segment, in a strong position and at an advantage over their peers.

In both Spain and Portugal, however, the opposite was found. These countries have an overcapacity in their fleet in relation to their TACs (which are based on historical catch records). At the time of the CFP negotiations, the Spanish and Portuguese economies were not as far developed as their northern peers, likely impacting their fish catching activities, particularly in the pelagic segment. However, as Spanish companies lacked EU quotas, they invested further afield with fishing activities in Latin America and Africa.

26.3. Firm performance

Two factors related to firm performance affected the processes of vertical and horizontal integration. Firstly, income and profitability. In countries where vertical integration was observed this generally pertained to fish catching companies investing in processing facilities, such as in Bulgaria, the Netherlands, Estonia, and Germany. To a certain extent this relates to the fishing segment that companies are active in (see section 26.2.1). The pelagic segment generates more income than the demersal segment. Companies with more financial resources not only invested in downstream processing, but also expanded their fleets both domestically and internationally. The three Dutch pelagic fishing companies, due to both historical circumstances and good business strategies, have developed into fully-integrated fishing groups with activities in both the demersal and pelagic segments, both domestically as well as elsewhere in the EU, and have invested downstream into processing, distribution and brand marketing.

Where firm performance is not strong enough to engage in downstream investment, POs have played a role in downstream activities, including processing, cold storage and logistics, and marketing. In a number of countries, such as the United Kingdom, Estonia and Poland, fishing companies also own producer organizations.

26.4. Conclusion

The empirical analysis attempted to quantify the impact of horizontal integration on employment factors, income and productivity (see Chapter 2). It found that the number of employees is not affected by any measure of horizontal integration. However, wages and salaries of total crew decrease 5.5% on average when the average number of vessels by enterprise increase by one vessel. In terms of income, all three measures – income from landings, live weight of landings and value of landings – decrease with integration. Additionally, vessel productivity decreases with integration. On the other hand, sector productivity – as measured by days at sea, fishing days, or number of fishing trips – is not affected by integration.

An explanation for the decrease in estimated salaries, income and vessel productivity may relate to the fact that vessels which are acquired may become 'inactive', as was observed in a number of Member States. The quota is then harvested by another vessel within the company group. Therefore, the average figures decrease. However, sector productivity does

not decrease as the active vessels may be utilized more intensively to maximize their efficiency and fulfil their capacity.

Regarding processes of both structural and non-structural, vertical and horizontal integration, a number of trends are observed. Non-structural integration is more common where structural integration may be hindered. For example, where the development of structural vertical integration is hindered by costs, ease of access to or unstable supply of raw materials, offtake arrangements are more common. Fishing companies are driven by the need to guarantee the sale of their products. Offtake arrangements allow them to satisfy this business need.

Similarly, non-structural horizontal integration through quota swaps, trading, leasing and renting, takes place where legislation permits these activities. Fishing companies seeking to optimize their fishing plans, and fulfil their obligations under the discard, engage in this non-structural form of horizontal integration. In situations where there are insufficient fish stocks or quotas, fishing companies have pooled their quotas in order to share the income and costs.

Various factors drive or hinder structural integration. The research at hand has found that the form of fisheries management system is not key in explaining the differences. Regulatory environment, natural resources and related firm performance are key. Where there is a stable and sufficient supply of natural resources – and consequently sufficient financial resources – companies have engaged in both vertical and horizontal integration. Fishing companies have engaged in horizontal integration, both domestically and internationally, to increase their supply of raw materials. Having a broader fleet portfolio allows these companies to maximize the use of their assets with less need for informal processes such as quota swapping or renting. The regulatory environment plays a key role in facilitating companies to integrate both vertically and horizontally.

27. RECOMMENDATIONS

This research has found that a variety of factors influence the processes of integration. These factors generally fall into **three categories: regulatory environment, natural resources, and firm performance**. Moreover, the research has also found that integration has an impact on salaries, income, and vessel productivity, but not on sector productivity. Given that recommendations to improve the regulatory environment and access to natural resources could have impacts on legislation, and the fact that the empirical findings are based on general national level data, **one key recommendation** is that further **econometric analysis** is needed. This econometric analysis should be carried out on a company level dataset. This company level dataset would consist of information on a more comprehensive list of companies that have and have not integrated both vertically and horizontally, including detailed information on their financial performance, productivity, employment, total number of vessels, number of active vessels, among other indicators. The econometric model would compare the economic indicators of interest (employment, income and productivity) under cases of integration vs no-integration to isolate their effect; and by using fixed effects at the company level, the model would allow control for individual characteristics of each company. Such a comprehensive and detailed EU-wide seafood industry company-level dataset does not yet exist. However, this study has already laid the groundwork and developed the resources needed for such a dataset.

The suggested econometric analysis could feed into policy recommendations that mitigate the negative impacts of processes of integration and maximize their benefits. The present study has found that companies and countries where structural integration has taken place were more able to develop financially sustainable fish plans, respond to changes in legislation, and strengthen the negotiating position towards buyers of their products. Respondents in this study stated that where integration has taken place, in some cases there was a negative impact on employment, however, in general the conditions in the sector improved.

A **further recommendation** from this study is for relevant organisations at the national level to develop comprehensive visions, coherent and reliable **legislative frameworks** for the fisheries sector. The present study has found that in several countries fishing companies still state that there is room for improvement.

Another recommendation relates to the **access to natural resources**. In countries with sufficient natural resources, both structural vertical and horizontal integration were more common. However, availability depends on several factors, not all of which are under the control of national authorities. For example, maximum sustainable yields are regularly adjusted to maintain sustainable fisheries, impacting fishing companies' access to the natural resources. In several countries where access to natural resources was limited, particularly in the Mediterranean, aquaculture was developed. This is an attractive segment for fishing companies to invest in, as well as for fish processing companies to secure supply. **Policy frameworks incentivizing** aquaculture development in resource-scarce jurisdictions could generate both employment and income for local seafood companies.

A final recommendation is to foster the **development of markets** for non-TAC and by-catch species. In light of the discard ban and of stock restrictions in some fisheries, this could prove an effective channel for fishing companies and processing companies to maximize their financial performance while minimizing waste and overfishing.

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ANNEX

Table 91: F Full-time equivalent (harmonised), Number

	Explanatory Variable	Coefficient Estimations					
β	ANV	-20.186 [55.847]	-8.755 [51.771]				
β	AVC			0.322 [2.720]	0.661 [2.519]		
β	pEmore1ves					251.112 [963.447]	-123.366 [895.432]
θ_1	Vexit		1.558* [0.329]		1.563* [0.329]		1.564* [0.330]
θ_2	Vsale		-0.89 [0.776]		-0.893 [0.776]		-0.894 [0.776]
γ_1	Educational attainment (25-64 with Upper secondary)	-39.965 [39.058]	-33.406 [36.218]	-41.661 [38.758]	-33.832 [35.932]	-42.912 [38.937]	-33.66 [36.128]
γ_2	% pop at risk of poverty or social exclusion	-81.718* [32.960]	-79.481* [30.896]	-82.756* [32.835]	-79.660* [30.767]	-82.951* [32.802]	-79.992* [30.745]
α	Constant	5088.721+ [2642.877]	4428.732+ [2454.983]	5141.724+ [2700.943]	4323.095+ [2508.871]	5283.018* [2629.580]	4451.943+ [2444.293]
	N	165	164	165	164	165	164

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 92: Total employed, Number

	Explanatory Variable	Coefficient Estimations					
β	ANV	-21.559 [64.059]	-11.835 [61.732]				
β	AVC			0.758 [3.119]	1.072 [3.003]		
β	pEmore1ves					356.435 [1104.898]	46.067 [1067.818]
θ_1	No of Vessels - Exit		1.392* [0.392]		1.399* [0.392]		1.394* [0.393]
θ_2	No of Vessels - Sale		-0.523 [0.925]		-0.527 [0.925]		-0.521 [0.926]
γ_1	Educational attainment (25-64 with Upper secondary)	-47.799 [44.801]	-42.39 [43.187]	-49.379 [44.447]	-42.865 [42.837]	-51.322 [44.654]	-43.672 [43.083]

	Explanatory Variable	Coefficient Estimations					
γ_2	% pop at risk of poverty or social exclusion	-88.076*	-83.436*	-88.983*	-83.587*	-89.406*	-84.140*
		[37.807]	[36.841]	[37.654]	[36.679]	[37.618]	[36.664]
α	Constant	5924.655+	5308.800+	5880.729+	5122.544+	6154.316*	5395.998+
		[3031.514]	[2927.322]	[3097.386]	[2990.994]	[3015.651]	[2914.861]
	N	165	164	165	164	165	164

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 93: In(Wages and salaries of crew)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.056*	-0.057*				
		[0.015]	[0.015]				
β	AVC			0	0		
				[0.001]	[0.001]		
β	pEmore1ves					-0.22	-0.189
						[0.271]	[0.271]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0.000*		0.000*		0.000*
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.020+	-0.020+	-0.025*	-0.025*	-0.024*	-0.024*
		[0.010]	[0.010]	[0.011]	[0.011]	[0.011]	[0.011]
γ_2	% pop at risk of poverty or social exclusion	-0.017+	-0.015+	-0.020*	-0.019*	-0.020*	-0.019*
		[0.009]	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]
α	Constant	18.795*	18.761*	19.111*	19.079*	19.105*	19.072*
		[0.710]	[0.705]	[0.763]	[0.761]	[0.741]	[0.740]
	N	165	164	165	164	165	164

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 94: In(Wages and salaries per FT employee)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.050*	-0.051*				
		[0.016]	[0.016]				
β	AVC			0	0		
				[0.001]	[0.001]		
β	pEmore1ves					-0.520+	-0.466
						[0.287]	[0.284]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0.001*		0.001*		0.001*
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.028*	-0.029*	-0.033*	-0.033*	-0.031*	-0.031*
		[0.011]	[0.011]	[0.012]	[0.012]	[0.012]	[0.011]
γ_2	% pop at risk of poverty or social exclusion	-0.009	-0.007	-0.012	-0.01	-0.012	-0.01
		[0.010]	[0.010]	[0.010]	[0.010]	[0.010]	[0.010]
α	Constant	13.307*	13.306*	13.602*	13.612*	13.501*	13.508*
		[0.771]	[0.756]	[0.815]	[0.803]	[0.784]	[0.774]
	N	165	164	165	164	165	164

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 95: In(Income from landings)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.091*	-0.091*				
		[0.019]	[0.019]				
β	AVC			0	0		
				[0.001]	[0.001]		
β	pEmore1ves					-0.701*	-0.687*
						[0.345]	[0.344]
θ_1	No of Vessels – Exit		-0.000+		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0		0		0
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.02	-0.02	-0.028+	-0.028+	-0.024+	-0.025+
		[0.013]	[0.013]	[0.014]	[0.014]	[0.014]	[0.014]
γ_2	% pop at risk of poverty or social exclusion	-0.039*	-0.037*	-0.045*	-0.044*	-0.044*	-0.043*
		[0.011]	[0.011]	[0.012]	[0.012]	[0.011]	[0.012]
α	Constant	20.368*	20.381*	20.989*	21.022*	20.742*	20.764*
		[0.912]	[0.906]	[1.005]	[1.003]	[0.965]	[0.963]
	N	173	172	173	172	173	172

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 96: In(Live weight of landings)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.183*	-0.183*				
		[0.023]	[0.023]				
β	AVC			-0.003*	-0.004*		
				[0.001]	[0.001]		
β	pEmore1ves					-1.568*	-1.563*
						[0.431]	[0.434]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0.001		0.001		0
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.011	-0.011	-0.029	-0.029	-0.018	-0.018
		[0.016]	[0.016]	[0.019]	[0.019]	[0.018]	[0.018]
γ_2	% pop at risk of poverty or social exclusion	-0.019	-0.019	-0.034*	-0.033*	-0.029*	-0.029+
		[0.013]	[0.013]	[0.015]	[0.015]	[0.015]	[0.015]
α	Constant	18.330*	18.314*	20.340*	20.329*	18.889*	18.880*
		[1.103]	[1.104]	[1.316]	[1.321]	[1.259]	[1.265]
	N	178	177	178	177	178	177

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 97: In(Value of landings)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.101*	-0.102*				
		[0.017]	[0.017]				
β	AVC			-0.003*	-0.003*		
				[0.001]	[0.001]		
β	pEmore1ves					-1.122*	-1.104*
						[0.298]	[0.295]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0.001*		0.001*		0.001*
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.016	-0.016	-0.027*	-0.027*	-0.019	-0.019
		[0.012]	[0.012]	[0.013]	[0.013]	[0.013]	[0.013]
γ_2	% pop at risk of poverty or social exclusion	-0.025*	-0.023*	-0.033*	-0.032*	-0.030*	-0.028*
		[0.010]	[0.009]	[0.010]	[0.010]	[0.010]	[0.010]
α	Constant	19.870*	19.843*	21.196*	21.178*	20.082*	20.069*
		[0.819]	[0.807]	[0.903]	[0.894]	[0.869]	[0.861]
	N	178	177	178	177	178	177

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 98: In(Income from landings per vessel)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.179*	-0.179*				
		[0.024]	[0.023]				
β	AVC			0	0		
				[0.001]	[0.001]		
β	pEmore1ves					-0.929+	-0.952*
						[0.475]	[0.470]
θ_1	No of Vessels – Exit		-0.000*		-0.000*		-0.000*
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0		0		0
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.026	-0.026	-0.042*	-0.042*	-0.037+	-0.038+
		[0.017]	[0.016]	[0.020]	[0.019]	[0.019]	[0.019]
γ_2	% pop at risk of poverty or social exclusion	-0.052*	-0.053*	-0.064*	-0.066*	-0.063*	-0.065*
		[0.014]	[0.013]	[0.016]	[0.016]	[0.016]	[0.016]
α	Constant	16.549*	16.623*	17.693*	17.799*	17.423*	17.491*
		[1.140]	[1.120]	[1.381]	[1.370]	[1.327]	[1.315]
	N	173	172	173	172	173	172

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 99: In(Live weight of landings per vessel)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.272*	-0.273*				
		[0.029]	[0.028]				
β	AVC			-0.003+	-0.003+		
				[0.002]	[0.002]		
β	pEmore1ves					-1.749*	-1.787*
						[0.570]	[0.571]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0		0		0
			[0.000]		[0.001]		[0.001]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.013	-0.013	-0.039	-0.039	-0.028	-0.027
		[0.020]	[0.019]	[0.025]	[0.025]	[0.024]	[0.024]
γ_2	% pop at risk of poverty or social exclusion	-0.036*	-0.037*	-0.056*	-0.058*	-0.051*	-0.053*
		[0.016]	[0.016]	[0.020]	[0.020]	[0.019]	[0.019]
α	Constant	14.345*	14.390*	16.870*	16.926*	15.405*	15.437*
		[1.346]	[1.339]	[1.738]	[1.740]	[1.665]	[1.665]
	N	178	177	178	177	178	177

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 100: In(Value of landings per vessel)

	Explanatory Variable	Coefficient Estimations					
β	ANV	-0.191*	-0.192*				
		[0.022]	[0.022]				
β	AVC			-0.003+	-0.003*		
				[0.001]	[0.001]		
β	pEmore1ves					-1.304*	-1.327*
						[0.424]	[0.421]
θ_1	No of Vessels – Exit		-0.000*		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0		0		0
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	-0.019	-0.019	-0.037*	-0.037*	-0.028	-0.028
		[0.015]	[0.015]	[0.018]	[0.018]	[0.018]	[0.018]
γ_2	% pop at risk of poverty or social exclusion	-0.041*	-0.042*	-0.055*	-0.056*	-0.052*	-0.053*
		[0.012]	[0.012]	[0.015]	[0.015]	[0.014]	[0.014]
α	Constant	15.885*	15.919*	17.725*	17.776*	16.597*	16.626*
		[1.035]	[1.019]	[1.290]	[1.282]	[1.237]	[1.229]
	N	178	177	178	177	178	177

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 101: Days at sea, Days

β	Explanatory Variable	Coefficient Estimations					
β	ANV	19.378	-3.023				
		[2730.259]	[2759.765]				
β	AVC			29.614	29.731		
				[133.182]	[134.607]		
β	pEmore1ves					-936.522	-1918.56
						[44033.812]	[44601.337]
θ_1	No of Vessels – Exit		-2.717		-2.651		-2.734
			[12.866]		[12.861]		[12.866]
θ_2	No of Vessels – Sale		-16.14		-16.233		-16.233
			[42.681]		[42.675]		[42.736]
γ_1	Educational attainment (25-64 with Upper secondary)	-4683.106*	-4707.975*	-4663.842*	-4690.469*	-4675.999*	-4697.193*
		[1881.027]	[1901.947]	[1867.238]	[1888.453]	[1883.193]	[1904.439]
γ_2	% pop at risk of poverty or social exclusion	-2643.855+	-2674.838+	-2629.227+	-2661.145+	-2640.750+	-2671.987+
		[1492.775]	[1518.887]	[1481.568]	[1507.491]	[1482.920]	[1508.114]
α	Constant	410102.122*	413033.374*	402729.962*	405748.200*	409611.434*	412315.061*
		[129146.359]	[130689.096]	[132062.396]	[133690.436]	[129164.374]	[130686.377]
	N	175	174	175	174	175	174

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 102: Fishing days, Days

β	Explanatory Variable	Coefficient Estimations					
β	ANV	105.764	54.885				
		[2031.150]	[2045.190]				
β	AVC			19.79	18.965		
				[99.084]	[99.758]		
β	pEmore1ves					-15482.247	-17685.191
						[32732.939]	[33018.903]
θ_1	No of Vessels – Exit		-7.323		-7.288		-7.493
			[9.535]		[9.531]		[9.525]
θ_2	No of Vessels – Sale		-26.962		-27.024		-27.828
			[31.630]		[31.627]		[31.638]
γ_1	Educational attainment (25-64 with Upper secondary)	-3574.301*	-3626.261*	-3553.331*	-3610.207*	-3475.518*	-3519.754*
		[1399.372]	[1409.484]	[1389.174]	[1399.551]	[1399.889]	[1409.879]
γ_2	% pop at risk of poverty or social exclusion	-1424.157	-1494.217	-1407.919	-1481.487	-1387.772	-1462.121
		[1110.536]	[1125.608]	[1102.246]	[1117.217]	[1102.342]	[1116.475]
α	Constant	300967.696*	307250.822*	295456.388*	302250.543*	294207.407*	300115.242*
		[96077.202]	[96850.310]	[98250.813]	[99079.319]	[96015.524]	[96748.688]
	N	175	174	175	174	175	174

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 103: In(kilowatt (KW) days of effort or kW fishing days)

	Explanatory Variable	Coefficient Estimations					
β	ANV	0.018	0.018				
		[0.016]	[0.016]				
β	AVC			0.001+	0.001+		
				[0.001]	[0.001]		
β	pEmore1ves					-0.112	-0.124
						[0.256]	[0.259]
θ_1	No of Vessels – Exit		0		0		0
			[0.000]		[0.000]		[0.000]
θ_2	No of Vessels - Sale		0		0		0
			[0.000]		[0.000]		[0.000]
γ_1	Educational attainment (25-64 with Upper secondary)	0.006	0.006	0.008	0.008	0.008	0.008
		[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]
γ_2	% pop at risk of poverty or social exclusion	-0.035*	-0.035*	-0.033*	-0.033*	-0.033*	-0.034*
		[0.009]	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]
α	Constant	16.562*	16.597*	16.100*	16.139*	16.405*	16.439*
		[0.747]	[0.755]	[0.759]	[0.767]	[0.750]	[0.758]
	N	176	175	176	175	176	175

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

Table 104: Number of fishing trips, Number

	Explanatory Variable	Coefficient Estimations					
β	ANV	112.787	-20.85				
		[2589.188]	[2587.048]				
β	AVC			34.029	28.425		
				[126.352]	[126.245]		
β	pEmore1ves					-9624.55	-10248.186
						[41754.420]	[41806.989]
θ_1	No of Vessels – Exit		-20.044+		-19.979+		-20.142+
			[12.016]		[12.012]		[12.015]
θ_2	No of Vessels - Sale		27.994		27.908		27.502
			[39.986]		[39.981]		[40.028]
γ_1	Educational attainment (25-64 with Upper secondary)	-2930.014	-2996.239+	-2899.934	-2981.240+	-2865.253	-2940.027
		[1776.423]	[1775.168]	[1762.790]	[1761.999]	[1777.298]	[1776.204]
γ_2	% pop at risk of poverty or social exclusion	-2594.217+	-2545.176+	-2571.129+	-2533.266+	-2568.111+	-2529.971+
		[1414.647]	[1422.709]	[1404.089]	[1412.233]	[1405.283]	[1412.573]
α	Constant	259879.247*	265197.246*	250834.944*	258355.209*	255426.524*	261449.667*
		[122101.648]	[122116.367]	[124844.242]	[124905.979]	[122044.087]	[122031.647]
	N	176	175	176	175	176	175

Robust standard errors (s.e.) in brackets. * significant at 5%, + significant at 10%. Source: Profundo Calculations.

This study researched the drivers and mechanisms of both structural and non-structural horizontal and vertical integration in the seafood industry in all 22 Member States with a coastline. The objective of the study was to identify trends among the Member States.

The observed trends generally fall into three broad, inter-linked categories: regulatory environment, natural resources and firm performance.

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