The Economic Impact of the Seafood Sector: Clogherhead

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To discuss the report further please contact:

Neil McCullough: **nmccullough@oxfordeconomics.com**
Oxford Economics, Lagan House, Sackville Street, Lisburn, BT27 4AB, UK
Tel: **+44 28 9263 5400**

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Foreword

The Economic Impact of the Seafood Sector: Clogherhead

In 2019, BIM completed the project to evaluate Ireland's top ten seafood ports and assess the importance of the seafood sector directly and downstream in these ports, their hinterlands and at the regional and national levels. The seafood sector is a primary driver of rural economies around the coastline of Ireland and acts as an anchor in these locations around which other supporting service sectors develop. This report reveals the results of this project for the port of Clogherhead and its hinterland. Clogherhead is an important seafood port with its fleet active locally and around the island. Significant volumes of seafood are landed here annually, particularly Dublin Bay Prawns.

Clogherhead is located in the northeast, in county Louth, between the towns of Drogheda and Dundalk. The area is popular with tourists given it's scenic location with numerous sandy beaches located north and south of the village. The hinterland of Clogherhead which extends towards the town of Drogheda is characterised as flat to undulating lowlands with agricultural land that is classified as good. Clogherhead is well connected to local towns (Drogheda 12km, Dundalk 30km) and major urban areas (Dublin 60km, Belfast 119km). These factors lead the economy of the Clogherhead hinterland to closely resemble the national economy, with the village acting as a commuter village to larger urban areas, yet with an above average contribution of the seafood sector to the local economy and employment.

In this report, the seafood sector in Clogherhead is shown to have significant downstream effects in terms of gross value added, employment and wages downstream. In total, 8% of the Clogherhead economy can be attributed to the seafood sector encompassing direct, indirect and induced effects. Direct employment of the seafood sector in the hinterland is 260 while a further 150 full-time employees are supported downstream through the indirect and induced effects of the seafood sector at the regional level. The sector generates over €14 million annually in wages directly with a further €5.7 million in wages generated downstream at the regional level. Further downstream effects occur outside the region at the national level.

Participation in this survey by seafood producers in Clogherhead was significant with a response rate of 40% of the target audience. Special thanks are due to Paul Boyd (Clogherhead Fishermen's Co-operative) and Paul Downes (BIM) for their assistance in this analysis. Richard Curtin, Economic and Strategic Services Unit, BIM, would also like to recognise the excellent work carried out by Oxford Economics and Perceptive Insight in the course of this project.

Executive summary

The seafood sector at the port

The seafood sector makes an important contribution to the Clogherhead economy. In 2018, the direct seafood sector at the port generated €49.3 million in turnover, supporting 260 direct jobs. Fish processing is the largest seafood sub-sector at the port, generating €28.9 million in turnover, while the remaining €20.4 million is attributed to the local commercial fishing sub-sector. When translated into GVA, the overall seafood sector makes a €25.7 million direct contribution to the local port economy.

Our survey explores the characteristics of firms operating in this sector. In general, firms are typically well-established, having operated for more than 10 years, and turnover tends to be relatively stable year-on-year. The short-term outlook for the seafood sector is relatively positive, with a fifth of firms expecting turnovers to increase. More than half of firms have recently invested in capital over the previous year, and those that did, tend to invest relatively more compared to other seafood sectors across Ireland's ports. The workforce tends to originate from the local area, while the end-market for seafood sales tends to be internationally focussed, with exports forming almost half of the total.

Analysing the survey results allows us to quantify the ports' seafood sector value within the regional economy. Once the indirect and induced effects are calculated, we estimate that the total economic contribution of the seafood sector at Clogherhead equated to €39 million of GVA across the mid-East economy in 2018. The seafood sector at this port alone also supported 415 jobs across the region, in addition to €5.9 million in tax revenues.

€25.7m

Direct GVA in 2018

The seafood sector makes a significant contribution within the local port economy.

€39m

Total GVA contribution to the Mid-East in 2018

The seafood sector makes a significant contribution to the wider regional economy.

Fig. 1. The estimated benefits of the port seafood sector, Mid-East, 2018

Port seafood sector	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Direct	25.7	260	14.4
Indirect	7.3	80	2.8
Induced	6.1	70	2.9
Total	**39.0**	**415**	**20.1**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

The role of the individual seafood sub-sectors

Our analysis of the seafood sector at the port produces the following headline findings throughout the region (which again will include the combined direct, indirect and induced impacts).[1]

- Activity in the commercial fishing sub-sector has been estimated to sustain 245 jobs, €7.0 million of wages and €17.6 million of GVA;
- The fish processing sub-sector has been estimated to sustain 190 jobs, €14.1 million of wages and €23.7 million of GVA; and
- There is no aquaculture sub-sectoral activity at the port.

Socio-economic characteristics

Sectors which are closely aligned with the seafood sector are important within the Clogherhead economy. Together, Agriculture, forestry & fishing and Manufacturing, mining & utilities (the parent sector of fish processing) account for over a quarter of workplace jobs in the local port economy. The structure of the economy also presents challenges, given the relatively small professional services sector (which is typically the fastest growing in employment terms). Likewise, the local economy has strong concentrations of employment in industries where growth is in part reliant on continued population growth.

While Clogherhead has a growing working age population, high economic participation and relatively low unemployment rates, local employment opportunities may be more limited outside of these industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. As a result, the seafood sector is likely to continue to play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumers spending it supports. Looking forward, a vibrant and growing local seafood sector will be important for the economic and demographic health of the area.

1 Summing the benefits of all three elements within our definition of the seafood sector (fishing, aquaculture and processing) will overestimate the indirect and induced impacts, and as a result, overall impacts. This is because the supply chain of the processing sub-sector will likely contain a proportion of the port's fishing sub-sector and it's supply chain. To get the direct totals (for employment, GVA and wages), we add all the three sub-sectors. However, for the indirect and induced totals, we sum those of the processing sub-sector with a proportionate share of the fishing and aquaculture (according to the proportion of sales not destined for local processors and informed by the interview process). The remainder of the fishing and aquaculture indirect and induced impacts will already be accounted for within that of the processors.

1. Introduction

1.1 About the study

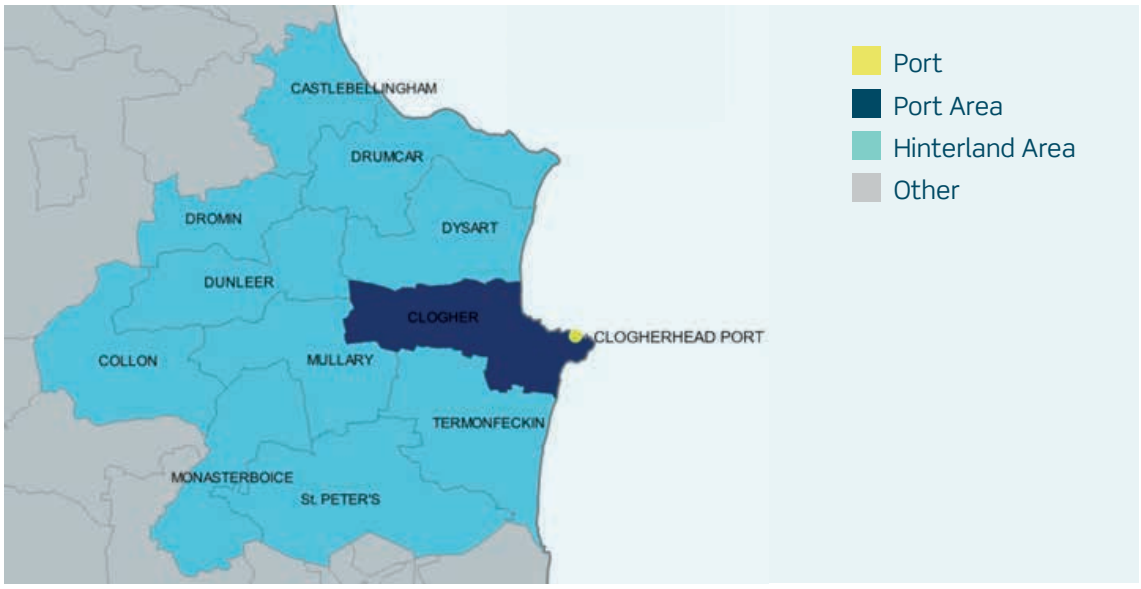
The Irish seafood sector is an important component of the Irish economy. It is, however, more important to coastal communities around the country given its concentration at Ireland's ports and the relatively lower level of alternative economic activity in these economies. In addition, as economic and employment growth is increasingly driven by office-based activity which favours urban areas, the seafood sector's role in providing labour market opportunities, wages and local demand in these local areas is arguably rising.

Against this backdrop, Bord Iascaigh Mhara (BIM) commissioned Oxford Economics and Perceptive Insights to estimate the economic contribution of the seafood sector in ten of Ireland's ports.

1.2 The port area

Clogherhead port is located on the Louth coast in the mid-East region. In this report we define the local port economy as the District Electoral Divisions (DED) of Clogher and those surrounding it, which constitute its hinterland – informed by BIM and shown in the below figure.

Fig. 2. Map of port area within the study



To inform the analysis, a comprehensive seafood-related survey exercise was carried out across Ireland's main ports. We worked closely with BIM in order to, firstly, understand the seafood population at each of the 10 ports. Following this, the market research firm Perceptive Insight collected information concerning the characteristics of the local seafood sector through both telephone and electronic surveys.

In total, there were close to 470 individual responses from seafood-related businesses across Ireland. Of this total, close to 330 unique responses were recorded from seafood operators based in the 10 port areas – a response rate of close to 40%, relative to the known seafood population.

1.3 The key elements of the local seafood sector

In this paper we present our estimates of the size of the local seafood sector and how it impacts the regional economy. Our analysis, therefore, estimates the direct activity associated with the commercial fishing and fish processing sub-sectors at the port by drawing on the survey findings and information held by BIM. We then estimate their wider impacts within the local NUTS3 region. These wider impacts include those associated with the seafood sector's supply chain and the consumer spending of those employed as a result of the direct and indirect activity – **see Box 1** for more detail of our methodology.

Our analysis is also careful to identify where the different seafood sub-sectors appear in the supply chains of the other sub-sectors. The most obvious example is commercial fishing appearing within the supply chain of fish processing. Our analysis has isolated the benefits to avoid instances of double counting (**see Appendix 2** for further information concerning the model approach).

BOX 1: INTRODUCING ECONOMIC IMPACT ANALYSIS

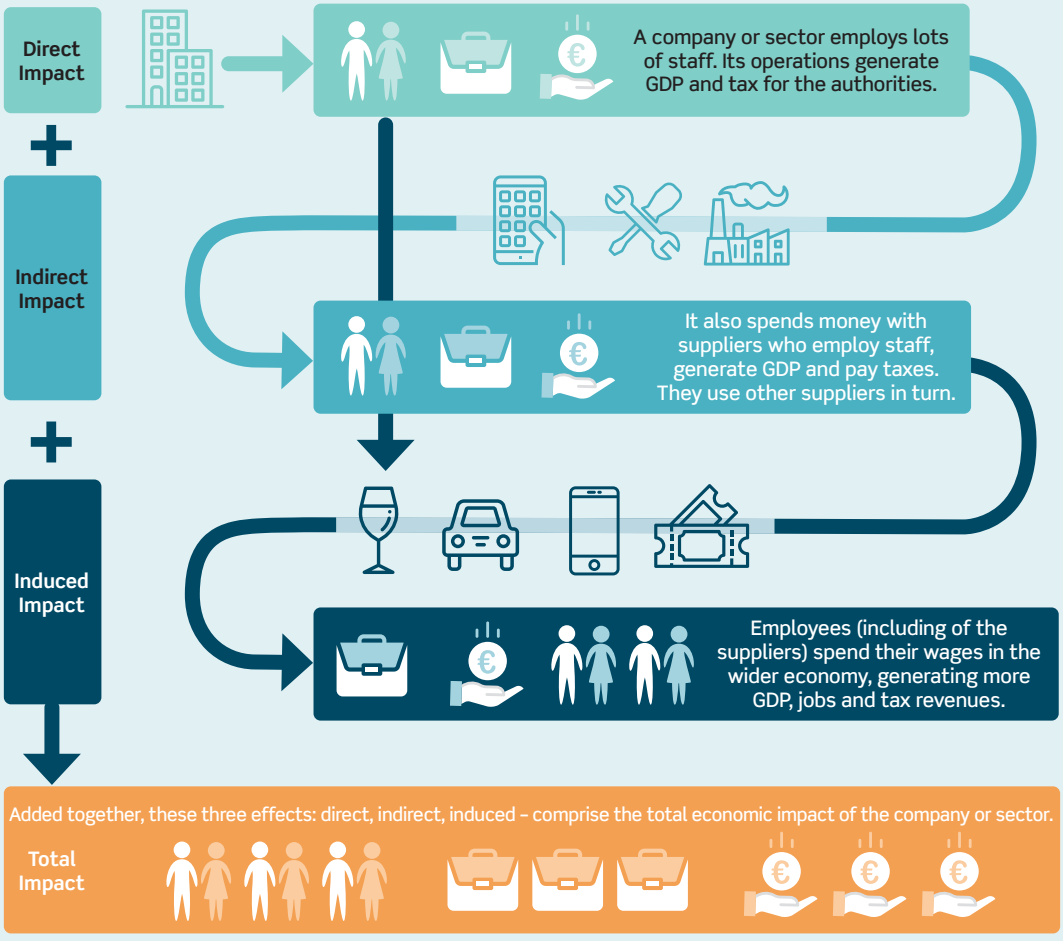
The economic impact of a sector is measured using a standard means of analysis called an economic impact assessment. The report quantifies the three 'core' channels of impact that comprise an organisation/sector's 'economic footprint':

- **Direct impact,** which is the economic activity the seafood sector generates because of its operations;
- **Indirect impact,** or supply chain impact, that occurs because the sector buys inputs of goods and services from Irish businesses; and the
- **Induced impact,** which relates to the wider economic benefits that arise when employees of the local seafood sector and its supply chain spend their wages in the consumer economy, for example, in local retail establishments.

We analyse these channels of impact using three core metrics:

- **Employment,** measured on a Full-Time Equivalent (FTE) headcount basis. This is comprised of both full-time employment and a proportion of part-time working component – where two part-time roles equate to a full-time position;
- **Gross value added** contribution to GDP; and
- **Tax receipts** generated by the Irish activity and employment supported by the seafood sector.

Fig. 3: Economic impact assessment



1.4 Report structure

This report breaks down the characteristics of the collective seafood sector within the port area. It then goes on to show the economic impact this activity creates across the mid-East economy.

The report takes the following structure:

- An analysis of the seafood sector within the local port economy;
- A breakdown of the economic benefits associated with the port's seafood sector across the regional economy;
- A summary of the overall benefit associated with the port's seafood sector at the regional level; and
- Finally, we present the report's conclusions.

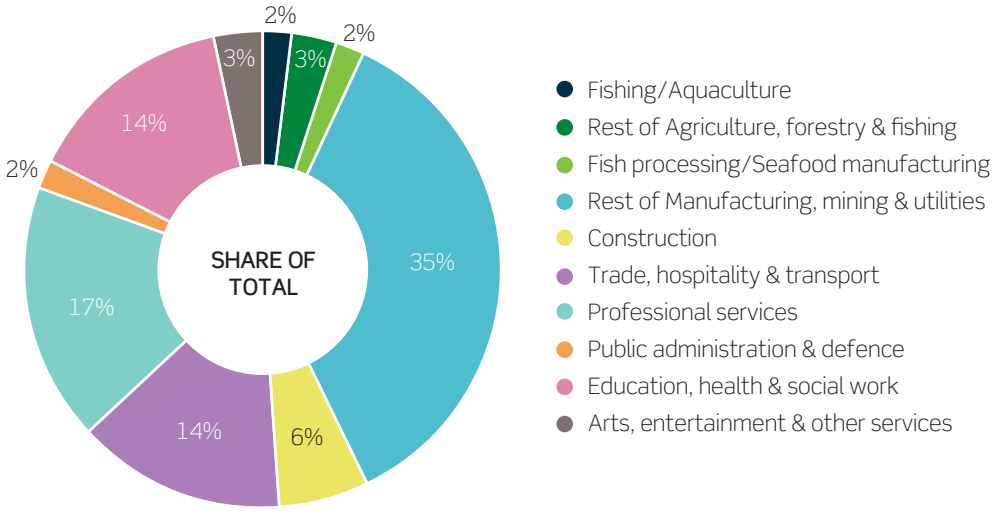
2. The seafood sector at Clogherhead

2.1 The importance of the local seafood sector

Before we present the total benefits associated with the port's seafood sector it is important to first understand the size and characteristics of the sector at the port level – the direct activity.

Unsurprisingly, the seafood sector forms a significant component of Clogherhead's economy. The latest Census (2016) provided workplace employment data at a sectoral level for small area District Electoral Divisions (DEDs) across Ireland. By combining this employment data with our regional productivity estimates we can quantify the economic footprint of the port economy. We therefore estimate that Clogherhead's economy made a GVA contribution to GDP of €502 million in 2018.[2] We estimate that the seafood sector within the port represented €25.7 million of this GVA total. Seafood, therefore, represented 5% of the port economy. The most dominant sector locally was the 'Manufacturing, mining & utilities' sector which represented 38% of the local economy.

Fig. 4. GVA by sector, Clogherhead, 2018

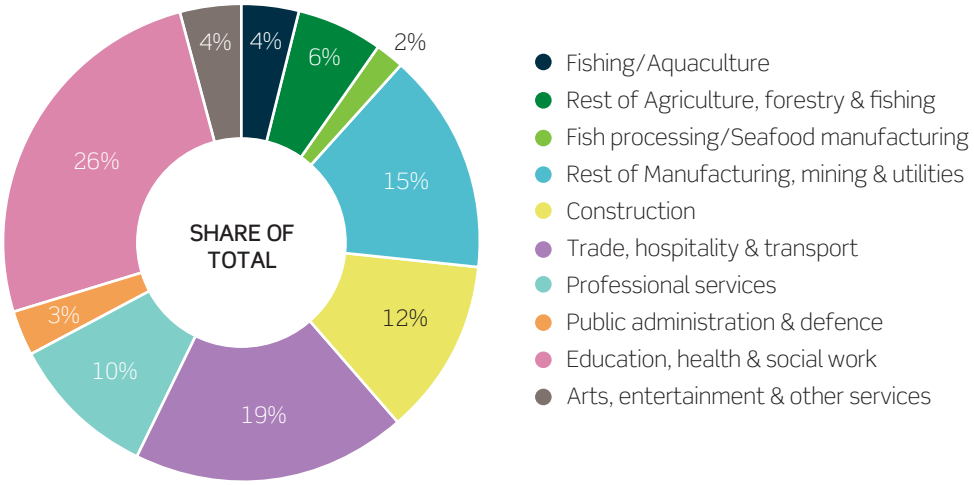


Source: *Oxford Economics, Perceptive Insight, CSO*

In employment terms, seafood is even more important within the port economy. Combined commercial fishing, aquaculture and fish processing is estimated to represent 6% of workplace employment across the port area in 2018. Furthermore, fishing and aquaculture represented 40% of local Agriculture, forestry and fishing related employment and fish processing accounted for a tenth of local Manufacturing, mining and utilities jobs.

2 When estimating the size of the port economies we use the most recent workplace sectoral employment data from the 2016 Census. This employment data relates to workplace zones, which are slightly smaller than DEDs. The workplace zones are therefore mapped across to closely represent the DEDs which cover to the port areas. We then supplement this data with the current snapshot of the local seafood sector as estimated through the survey exercise. Finally, we subtract the commercial fishing and aquaculture activity from the broader 'Agriculture, forestry & fishing' sector to get an indication of it's prominence locally. A similar approach is adopted with fish processing in relation to the 'Manufacturing, mining & utilities' sector.

Fig. 5. Employment by sector, Clogherhead, 2018



Source: *Oxford Economics, Perceptive Insight, CSO*

2.2 Characteristics of the seafood sector

Fish processing forms the largest direct contribution to the seafood sector at Clogherhead. In 2018, it accounted for a €28.9 million of turnover, or 59% of the local seafood sector total, ahead of commercial fishing (€20.4 million). Commercial fishing, however, provided the highest direct employment of the two sub-sectors, with its 180 jobs accounting for 69% of the total. There were no aquaculture activities present at the port.

Fish processing firms were larger on average than their commercial fishing counterparts. The seven operators in this sub-sector generated an average turnover of just over €4 million each, meaning that each fish processing firm was on average six times larger than commercial fishing operators, who averaged €638,000 of turnover per firm. This highlights the ability of fish processors operating in Clogherhead to better exploit the economies of scale associated with industrialised processes.

Fig. 6. Headline direct economic contribution of the seafood sector, Clogherhead, 2018

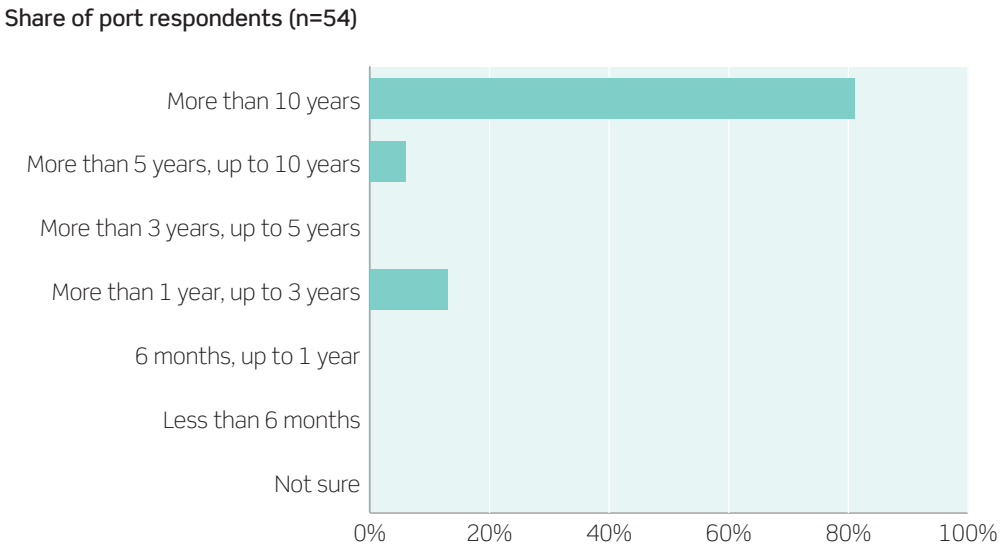
	Turnover (€m)	Jobs	Wages (€m)	Seafood operators
Commercial fishing	20.4	180	4.5	32
Aquaculture	0.0	0	0.0	0
Fish processing	28.9	80	9.9	7
Total	**49.3**	**260**	**14.4**	**39**

Source: *Oxford Economics, Perceptive Insight, BIM*
Note: *May not sum due to rounding*

Our survey also provides insight into the profile of businesses operating at the port. We surveyed 16 operators in Clogherhead, 42% of the population of local seafood businesses. While the sample size for Clogherhead alone is somewhat smaller than for the ten ports as a whole – the results for which are detailed within the main report – we may nevertheless explore the findings of respondents from the port.

The survey results show that seafood businesses within the port tend to be relatively mature and well established. While a significant majority (81%) of respondents identified as having operated for more than 10 years in the port area, this rate is below the aggregate figure for the ten ports (89%), and joint second-lowest across all ports. A further 6% of respondents were at least five years old.

Fig. 7. Seafood sector maturity, Clogherhead, 2018

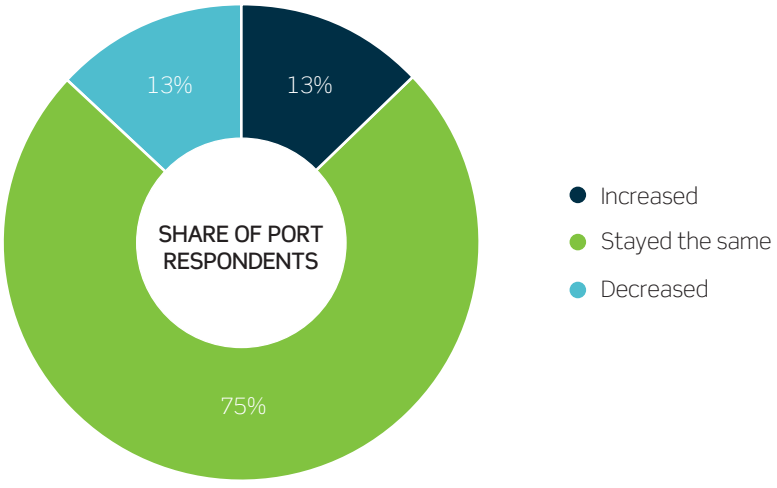


Source: *Oxford Economics, Perceptive Insight*

The survey also explored the recent performance of firms operating in the seafood sector. Overall, turnover has been relatively stable over the past 12 months; three-quarters of respondents indicated that it had neither increased nor decreased over this period, a share slightly above the aggregate rate for all ten ports (72%). The same proportion of firms have seen turnover increase as decrease over this period (both 13%).

While the sample size of respondents is not sufficient to provide an accurate breakdown of turnover performance by all activities, our survey indicates that turnover growth has been more positive for fish processing than commercial fishing operators at the port.

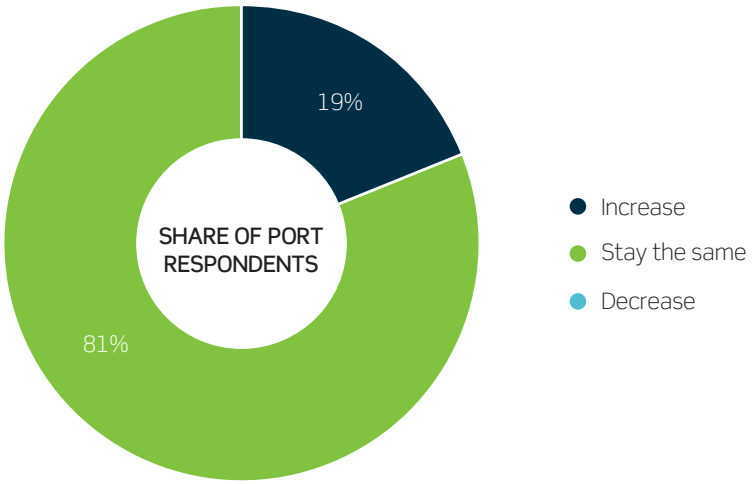
Fig. 8. Changes to turnover in the past 12 months, Clogherhead, 2018



Source: *Oxford Economics, Perceptive Insight*

The outlook for turnover over the next 12 months is more optimistic. Almost one-in-five respondents (19%) expected turnover to increase over this period, the joint-highest share among the ten ports surveyed, and seven percentage points above the port average (12%). Similarly, none of the respondents expected turnover to decrease over the next year, again the lowest share across all ports, although this may in part reflect the relatively low sample size for this port.

Fig. 9. Anticipated changes to seafood turnover, Clogherhead, 2018

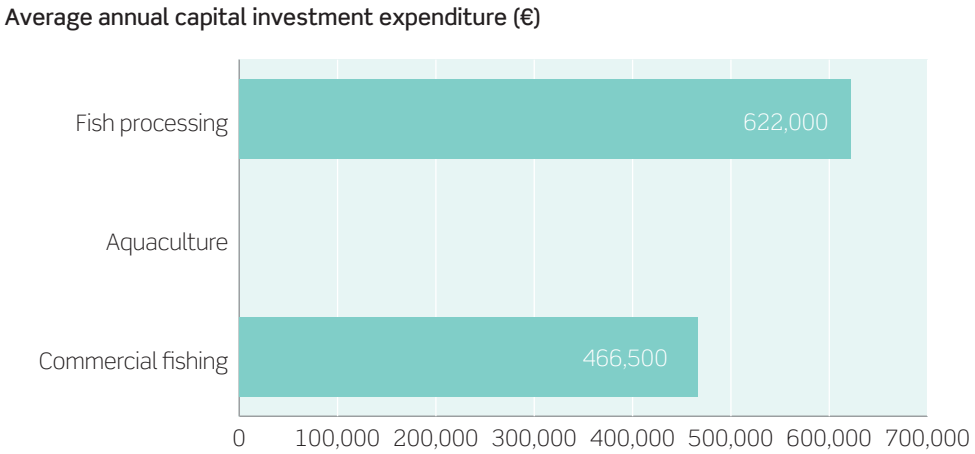


Source: *Oxford Economics, Perceptive Insight*

Improving turnover is often linked to investment: improving the quality and/or quantity of capital available to the workforce can enable improved productivity and turnover. Our survey indicates that almost two-thirds (63%) of firms at Clogherhead have spent money on capital investment in the last year, a rate almost twice the all ports average (33%). Clogherhead is also the only port where a majority of firms have invested over the previous year.

While more firms engaged in capital investment, their average spend also tended to be relatively high. Respondents at Clogherhead spent on average €498,000 each on capital investment in 2018, compared to €389,000 across the ten ports as a whole. Average investment by both fish processing (€622,000) and commercial fishing (€467,000) operators at the port also outstripped the equivalent figures across the ten port average (€283,000 and €478,000 respectively).

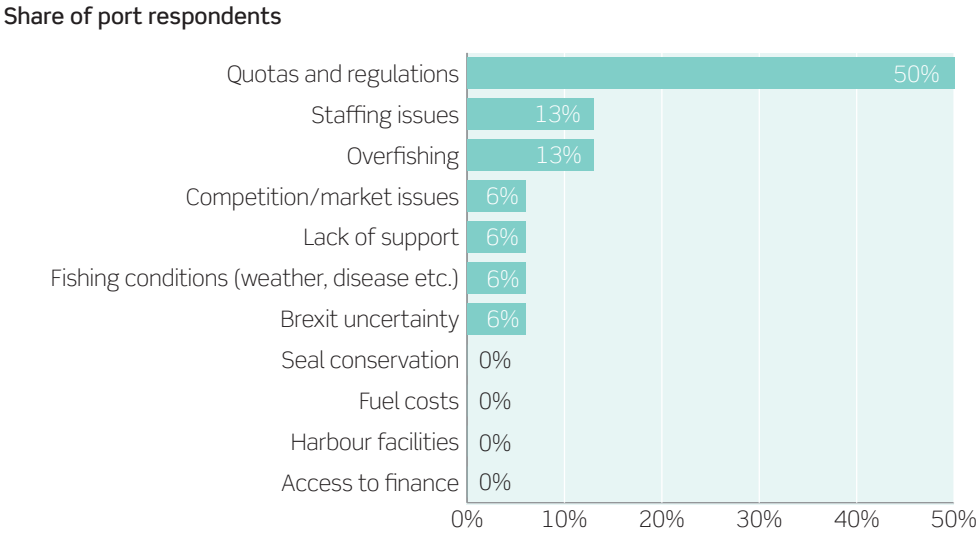
Fig. 10. Average capital investment by firm, Clogherhead, 2018



Source: *Oxford Economics, Perceptive Insight*

Given that a majority of firms were not expanding or investing in capital over the past year, our survey also explored the constraints on growth within the seafood sector. Exactly half of respondents identified quotas and regulations as the main issue, above the ten ports average (43%), while only one other port included in our survey found a higher share of respondents citing this issue. Overfishing and staffing issues (both 13%) were the next largest responses.

Fig. 11. Main constraint on growth, Clogherhead, 2018



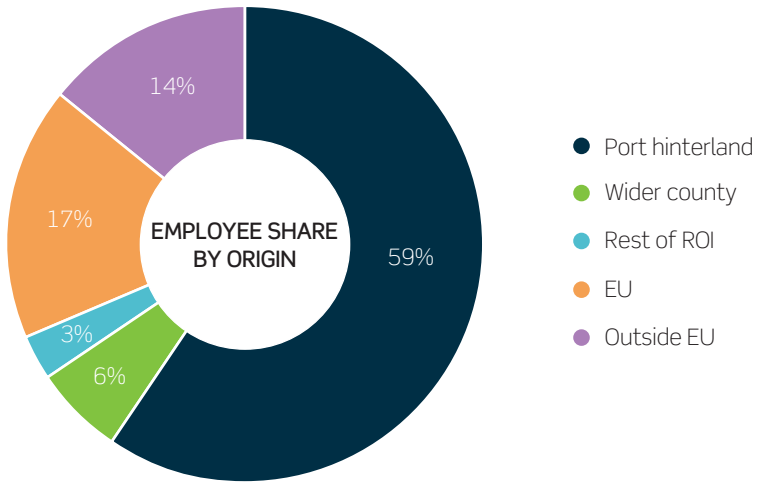
Source: *Oxford Economics, Perceptive Insight*

Alongside demonstrating the importance of the seafood sector in providing local job opportunities, our survey also sought to further understand the characteristics of this workforce – namely where the seafood sector's employees originate from. The survey results highlight that a majority (59%) of workers in the seafood sector originate from the port hinterland, further highlighting the value of the seafood sector at Clogherhead to the local population. A further 6% of workers also originate from elsewhere in the county. Almost a third (31%) were foreign nationals, mostly originating from the EU (17%).

The profile of the workforce is broadly similar across each of the three seafood sub-sectors, with a similar share of workers originating from the port hinterland across both commercial fishing (61%) and aquaculture (54%). While fish processing (35%) and commercial fishing (30%) both employ a broadly similar proportion of foreign nationals, the composition is somewhat different; 14% of commercial fishing employees originate from the EU, and 17% from elsewhere, compared to 32% of workers in fish processing.

Given that a majority of the workforce originate from the port hinterland, it is somewhat unsurprising that the survey also finds that the workforce tends to also live locally. A significant majority of the workforce reside within the port hinterland (82%), while a further 10% live elsewhere in Co. Louth.

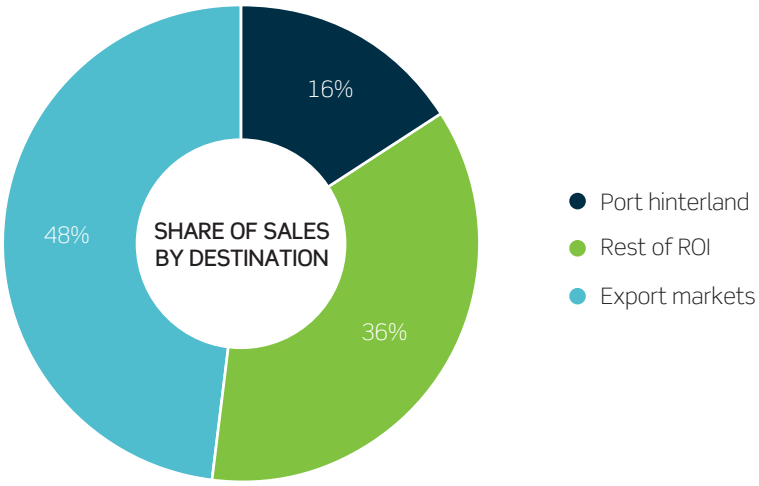
Fig. 12. Origins of the workforce, Clogherhead, 2018



Source: *Oxford Economics, Perceptive Insight*

Our survey also explored the destinations of sales made by seafood sector firms. Exports accounted for 48% of the total in Clogherhead, a share slightly above the ten ports combined (45%). Only 16% of sales are made within the port hinterland, the lowest share across the ten ports, and 17 percentage points below the ten ports average, while the remaining 36% of sales are made elsewhere in Ireland. Commercial fishing operators are both more likely to export foods abroad (59%) than fish processors (40%), and to sell within the port hinterland (34%) than this group (4%).

Fig. 13. Seafood sales by destination, Clogherhead, 2018



Source: *Oxford Economics, Perceptive Insight*

2.3 Conclusion

Our survey explores the characteristics of firms operating in this sector. In general, firms are typically well-established, having operated for more than 10 years, and turnover tends to be relatively stable year-on-year. The short-term outlook for the seafood sector is relatively positive, with a fifth of firms expecting turnover to increase. More than half of firms have recently invested in capital over the previous year, and those that did, tend to invest relatively more compared to other seafood industries across Ireland's ports. The workforce tends to originate from the local area, while the end-market for seafood sales tends to be internationally focussed, with exports forming almost half of the total.

3. The impact of seafood's sub-sectors

3.1 Commercial fishing

Commercial fishing at Clogherhead generated €17.6 million of GVA across the mid-East economy in 2018. Over a third of this GVA total (€6.2 million) was not directly generated by commercial fishing activities at the port itself, but resulted from the sub-sector's procurement activities (€3.9 million) and the wider consumer spending it supports in the regional economy (€2.3 million).

The 245 jobs supported by commercial fishing activity, however, largely originated from commercial fishing activity itself, and supports €7 million in wages. The indirect and induced effects tend to occur in relatively higher value-added sectors, generating more GVA per worker on average – and higher average wages – when compared against the direct commercial fishing activity at the port.

Fig. 14. Benefits of the commercial fishing sub-sector, Mid-East, 2018

Port Commercial Fishing	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Direct	11.4	180	4.5
Indirect	3.9	35	1.4
Induced	2.3	25	1.1
Total	**17.6**	**245**	**7.0**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

The Agriculture, forestry & fishing sector accounted for two thirds of the GVA total generated by the port's commercial fishing activities, equivalent to €11.7 million in 2018. This sector's overall GVA contribution (including the indirect and induced) is only slightly above the direct contribution (€11.4 million), implying that the sector receives relatively few of the indirect or induced benefits that result from the fishing activity. It however remains the main beneficiary in employment terms, supporting 185 jobs in 2018, or 76% of the regional total.

Of the impact commercial fishing has on other sectors, wholesale and retail received the largest GVA benefit (€2.2 million) – linked largely to the sector's procurement spending throughout the mid-East economy – while manufacturing (€1 million) receives the next largest contribution, as a result of both local spending and its role in the commercial fishing supply chain.

Fig. 15. Total benefits of commercial fishing by sector, Mid-East, 2018

Port commercial fishing	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	11.7	185	4.6
Mining & quarrying	0.0	0	0.0
Manufacturing	1.0	5	0.2
Electricity, gas, steam	0.0	0	0.0
Water supply	0.0	0	0.0
Construction	0.0	<5	0.0
Wholesale & retail	2.2	25	1.0
Transportation & storage	0.2	5	0.1
Accommodation & food	0.2	5	0.2
Information & communications	0.0	0	0.0
Financial & insurance	0.3	<5	0.1
Real estate	0.8	5	0.3
Professional, scientific & technical	0.5	5	0.1
Administration & support	0.1	0	0.0
Public administration	0.0	0	0.0
Education	0.1	<5	0.1
Human health	0.2	5	0.1
Arts, entertainment & recreation	0.1	<5	0.0
Other service activities	0.0	<5	0.0
Total	**17.6**	**245**	**7.0**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

3.2 Fish processing

Fish processing is the largest seafood sub-sector within the port economy, supporting 195 jobs, €23.7 million of GVA and €14.1 million in wages across the mid-East in 2018. Around 115 of these jobs take place within the fish processor's supply chain or within sectors which benefit from the resulting consumer spend the direct activity supports (60 are supported along the supply chain, while a further 55 are as a result of spending supported by this employment). Fish processing employment multiplier therefore stood at 2.4 – meaning that every direct fish processing job within the port, supports an additional 1.4 jobs elsewhere within the regional economy. This multiplier effect was significantly stronger than that of the commercial fishing element of the local seafood sector (1.3).

Fig. 16. Benefits of the fish processing sub-sector, Mid-East, 2018

Port fish processing	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Direct	14.2	80	9.9
Indirect	4.8	60	2.0
Induced	4.6	55	2.2
Total	**23.7**	**195**	**14.1**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

The mid-East's manufacturing sector experiences the strongest benefit resulting from fish processing activity at Clogherhead. In 2018, it generated €15 million of GVA, equivalent to 63% of the total, and supported 85 jobs. Manufacturing equivalent share of wages at €10 million is also relatively high at 70%. Meanwhile, the agriculture sector received around 8% of the wages benefit (€1.1 million). This is despite supporting just under half of the equivalent number of jobs (35).

The average salary of an agriculture worker (€29,700) was therefore somewhat lower than in manufacturing (€120,000), with average productivity (€60,600 per job) being well below the equivalent level for manufacturing (€180,000). The wholesale and retail sector is the next largest benefactor of Clogherhead's fish processing sub-sector, generating €1.9 million of GVA and supporting approximately 25 jobs.

Fig. 17. Total benefits of fish processing by sector, Mid-East, 2018

Ports fish processing	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	2.3	35	1.1
Mining & quarrying	0.0	0	0.0
Manufacturing	15.0	85	10.0
Electricity, gas, steam	0.1	0	0.0
Water supply	0.0	0	0.0
Construction	0.1	<5	0.0
Wholesale & retail	1.9	25	0.9
Transportation & storage	0.5	5	0.2
Accommodation & food	0.4	10	0.3
Information & communications	0.1	0	0.0
Financial & insurance	0.3	<5	0.1
Real estate	1.4	10	0.6
Professional, scientific & technical	0.5	5	0.2
Administration & support	0.1	0	0.0
Public administration	0.1	<5	0.0
Education	0.3	5	0.2
Human health	0.3	5	0.2
Arts, entertainment & recreation	0.1	<5	0.0
Other service activities	0.1	<5	0.1
Total	**23.7**	**195**	**14.1**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

3.3 Conclusion

In conclusion, Clogherhead's fish processing sector has the largest economic footprint of the two-seafood related sub-sectors present. We estimate that it supported 195 jobs, €14.1 million in wages and over €23.7 million in GVA throughout the mid-East economy in 2018. Although the port's commercial fishing sub-sector supported less GVA and wages, its employment impact was larger, supporting 245 jobs across the region.

4. Total impact of the seafood sector at Clogherhead

4.1 Seafood sector activity at the port

This section takes the estimates presented in the preceding sections of the report and calculates the total economic impact resulting from the activities of the seafood sector within the port area.

However, simply summing the respective benefits of both sub-sectors (commercial fishing and fish processing) will inevitably overestimate the indirect, induced and as a result, total impacts. This is because the supply chains of the fish processing element contain a proportion of the commercial fishing sub-sector and its supply chains. Therefore, adding everything together would result in double counting some of the impacts. **See Appendix 2** for further detail on our approach.

We have therefore laid out the following approach to calculate total impacts for GVA, employment, wages and tax:

Direct impacts

- Calculated by summing the direct impacts from the three elements of the seafood sector for GVA, employment, wages and tax.

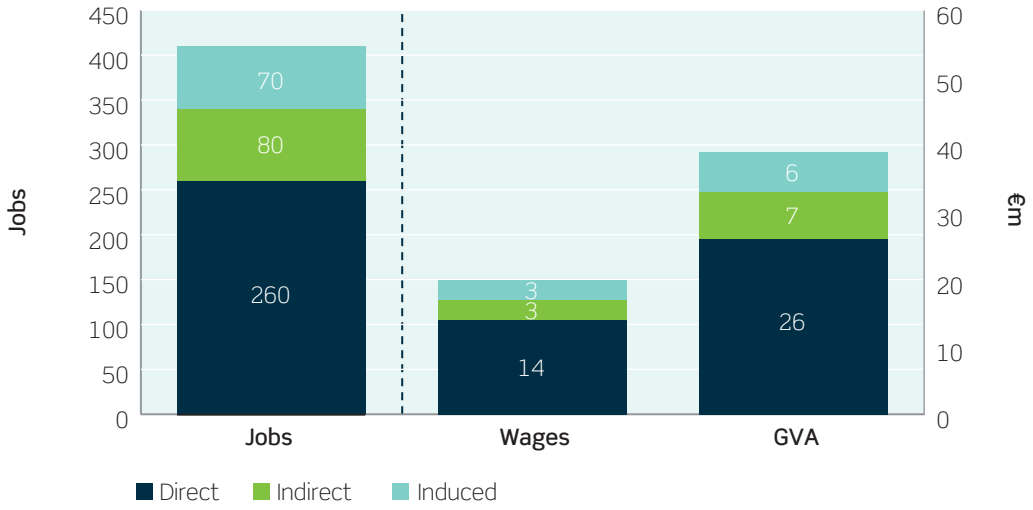
Indirect and induced impacts

- For GVA, employment, wages and taxes, the total indirect and induced impacts are calculated by summing the indirect and induced impacts of fish processing and a 63% share of the indirect and induced impacts associated with the commercial fishing sub-sector (as information from the survey interviewees suggests that exports and domestic sales outside the port area's own processors account for 63% of commercial fishing's production). The remainder of the commercial fishing sub-sector's indirect and induced impacts will already be accounted for in the indirect and induced impacts from the fish processing sub-sector.

4.2 Regional estimates

We estimate that the seafood sector at Clogherhead contributed €39 million of GVA to the mid-East economy in 2018. The port's seafood sector supported 415 jobs across the region, supporting €20.1 million in wages for those in employment.

Fig. 18. Benefits of the seafood sector, Mid-East, 2018



Source: *Oxford Economics, Perceptive Insight, CSO*

Almost a third of the total GVA figure (approximately €13 million) is generated either via indirect activities supporting the seafood sector (€7.3 million) or through additional induced spending that results from the employment supported by this sector and its supply chain (€6.1 million).

Fig. 19. Total seafood sector benefits, Mid-East, 2018

Port seafood sector	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Direct	25.7	260	14.4
Indirect	7.3	80	2.8
Induced	6.1	70	2.9
Total	**39.0**	**415**	**20.1**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

Given commercial fishing's significant presence at the port, the Agriculture, forestry & fishing sector benefits most from Clogherhead's seafood sector in employment terms (220 jobs). It also benefits due to its presence within the fish processing supply chain. However, the manufacturing sector enjoys more of the GVA impacts, accounting for €15.6 million of the seafood sector's value-added contribution to the mid-East economy in 2018, equivalent to 40% of the regional total. This manufacturing sector represents a less dominant share of employment impacts; with 85 jobs forming a fifth of the total supported throughout the region. However, manufacturing accounts for a relatively high share of the wage benefits – accounting for half of the total wage benefit in the region. Once again, this is the result of both stronger productivity and higher average wages in the sector relative to Agriculture, forestry & fishing.

Wholesale and retail is the next largest beneficiary in GVA terms (€3.3 million), supporting an estimated 40 jobs, followed by real estate (€1.9 million).

Fig. 20. Total benefits by sector, Mid-East, 2018

Port seafood sector	Mid-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	13.9	220	5.7
Mining & quarrying	0.0	0	0.0
Manufacturing	15.6	85	10.1
Electricity, gas, steam	0.1	0	0.0
Water supply	0.0	0	0.0
Construction	0.1	<5	0.1
Wholesale & retail	3.3	40	1.6
Transportation & storage	0.7	10	0.3
Accommodation & food	0.6	15	0.4
Information & communications	0.1	<5	0.0
Financial & insurance	0.5	<5	0.1
Real estate	1.9	15	0.8
Professional, scientific & technical	0.8	5	0.2
Administration & support	0.2	<5	0.0
Public administration	0.1	<5	0.1
Education	0.3	5	0.3
Human health	0.4	5	0.3
Arts, entertainment & recreation	0.2	<5	0.1
Other service activities	0.1	5	0.1
Total	**39.0**	**415**	**20.1**

Source: *Oxford Economics, Perceptive Insight, CSO*
Note: *May not sum due to rounding*

4.3 Taxation estimates

Seafood activity at the port provides further benefits through the generation of tax revenues to the Revenue Commissioners. These fiscal impacts can again be split into their direct, indirect and induced components depending on what channel of activity they originate from. We estimate that port seafood sector's direct tax contribution equated to €2.2 million in 2018, consisting of both the labour-based tax paid by the sector's employees (income tax, PRSI etc) and corporation tax receipts.

The indirect fiscal benefits represent the same taxation components as above but are generated within the sector's wider supply chain, in addition to net taxes on input purchases and sectoral taxation on production less subsidies. Combined these represent a net fiscal deficit of €0.1 million, mainly because of agriculture's prominence within the fish processing supply chain. However, the indirect deficit is more than compensated for by the consumption related tax the sector supports across the economy. As those employed in the sector and within its supply chain spend their wages, this supports further jobs and activity within the Irish economy. We estimate this induced activity supported a further €3.7 million in tax revenue.

Therefore, in total, Clogherhead's seafood sector is estimated to have supported €5.9 million in fiscal benefits in 2018. This total was made up of €3.4 million in employment/labour related tax, €1.1 million in corporation tax, €2.3 million in taxation associated with the spending of wages, and a net tax deficit of €0.8 million through taxation on inputs and production.[3]

3 Net tax position refers to taxes less subsidies.

Fig. 21. Fiscal impact by taxation type, Ireland, 2018

Ports seafood sector	Total tax estimates (€m)				
	Labour tax	Corporation tax	Production tax	Input purchases tax	Tax on consumption
Agriculture, forestry & fishing	1.2	0.2	-1.9	0.2	0.0
Mining & quarrying	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.9	0.3	0.0	0.0	1.8
Electricity, gas, steam	0.0	0.0	0.0	0.0	0.1
Water supply	0.0	0.0	0.0	0.0	0.0
Construction	0.0	0.0	0.0	0.0	0.0
Wholesale & retail	0.3	0.2	0.0	0.0	0.0
Transportation & storage	0.1	0.1	0.1	0.2	0.0
Accommodation & food	0.1	0.0	0.0	0.0	0.2
Information & communications	0.0	0.0	0.0	0.0	0.1
Financial & insurance	0.1	0.1	0.0	0.1	0.0
Real estate	0.2	0.0	0.1	0.1	0.0
Professional, scientific & technical	0.1	0.0	0.0	0.0	0.0
Administration & support	0.0	0.0	0.0	0.0	0.0
Public administration	0.0	0.0	0.0	0.0	0.0
Education	0.1	0.0	0.0	0.0	-0.1
Human health	0.1	0.0	0.0	0.0	-0.1
Arts, entertainment & recreation	0.0	0.0	0.0	0.0	0.0
Other service activities	0.0	0.0	0.0	0.0	0.0
Total	**3.4**	**1.1**	**-1.6**	**0.8**	**2.3**

Source: *Oxford Economics, Perceptive Insight, CSO*

4.4 Conclusion

In calculating the overall impact of the local seafood sector, we consider the degree to which output from commercial fishing can appear in the supply chain of local fish processors.

Therefore, our analysis shows that Clogherhead's overall seafood sector supports 415 jobs and €39 million in GVA throughout the regional economy. Furthermore, the sector generates €5.9 million in tax revenues towards the public purse.

5. Conclusions

5.1 The seafood sector in Clogherhead

The seafood sector makes an important contribution to the Clogherhead economy. In 2018, the direct seafood sector at the port generated €49.3 million in turnover, supporting 260 direct jobs. Fish processing is the largest seafood sub-sector at the port, generating €28.9 million in turnover, while the remaining €20.4 million belonged to the commercial fishing component. When translated into GVA, the overall seafood sector makes a €25.7 million direct contribution to the local port economy.

Our survey explores the characteristics of firms operating in this sector. In general, firms are typically well-established, having operated for more than 10 years, and turnover tends to be relatively stable year-on-year. The short-term outlook for the seafood sector is relatively positive, with a fifth of firms expecting turnover to increase. More than half of firms have recently invested in capital over the previous year, and those that did, tend to invest relatively more compared to other seafood sectors across Ireland's ports. The workforce tends to originate from the local area, while the end-market for seafood sales tends to be internationally focussed, with exports forming almost half of the total.

5.2 The fish processing sub-sector is the main contributor

The fish processing sub-sector makes the strongest contribution to the mid-East economy in GVA terms. In 2018, it alone generated over €28 million in turnover, which translated into €14.2 million of direct GVA. This GVA total increases to €23.7 million after we consider both the indirect and induced impacts across the rest of the regional economy. The fish processing sub-sector is estimated to provide benefits of the following size:

- 80 direct jobs and €9.9 million of wages, producing €14.2 million of GVA;
- 60 indirect jobs and €2.0 million of wages, producing €4.8 million of GVA; and
- 55 induced jobs and €2.2 million of wages, producing €4.6 million of GVA.

5.3 Commercial fishing remains a significant component

Although the commercial fishing sub-sector's economic footprint is smaller than that of the local fish processing element, it remains an equally important part of the local seafood sector. Accordingly, our analysis shows the economic impact of the commercial fishing element was of the following size in 2018:

- 180 direct jobs and €4.5 million of wages, producing €11.4 million of GVA;
- 35 indirect jobs and €1.4 million of wages, producing €3.9 million of GVA; and
- 25 induced jobs and €1.1 million of wages, producing €2.3 million of GVA.

Therefore, we estimate that the port's collective seafood sector supported 415 jobs, €20.1 million in wages and €39 million in GVA within the regional economy in 2018. This activity was enough to sustain €5.9 million in tax revenues towards the public accounts.

5.4 Seafood supporting peripheral economies

Sectors which are closely aligned with the seafood sector are important within the Clogherhead economy. Together, Agriculture, forestry & fishing and Manufacturing, mining & utilities (the parent sector of fish processing) account for over a quarter of workplace jobs in the local port economy. The structure of the economy also presents challenges, given the relatively small professional services sector (which is typically the fastest growing in employment terms). Likewise, the local economy has strong concentrations of employment in industries where growth is in part reliant on continued population growth.

While Clogherhead has a growing working age population, high economic participation and relatively low unemployment rates, local employment opportunities may be more limited outside of these industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. As a result, the seafood sector is likely to continue to play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumers spending it supports. Looking forward, a vibrant and growing local seafood sector will be important for the economic and demographic health of the area.

Appendix 1: Clogherhead's economic challenges

Economic activity and structure

The latest available data indicates that Clogherhead's labour market is performing relatively strongly. The local unemployment rate within the port area and its hinterland was relatively low at 12.1% in 2016, compared to the mid-East region (12.6%) and Ireland overall (12.9%).[4] At 55%, the local employment rate was also relatively stronger than both the regional and national averages **(see Fig. 22**). Census data also reveals that the economic inactivity rate[5] among those residents aged 15 and over was just over 37%, broadly in line with the mid-East and slightly below the national rate (39%).

Fig. 22. Headline economic indicator comparisons, 2016

	Unemployment rate	Employment rate	Economic inactivity
Clogherhead	12.1%	55.3%	37.1%
Mid-East	12.6%	54.9%	37.2%
Ireland	**12.9%**	**53.3%**	**38.8%**

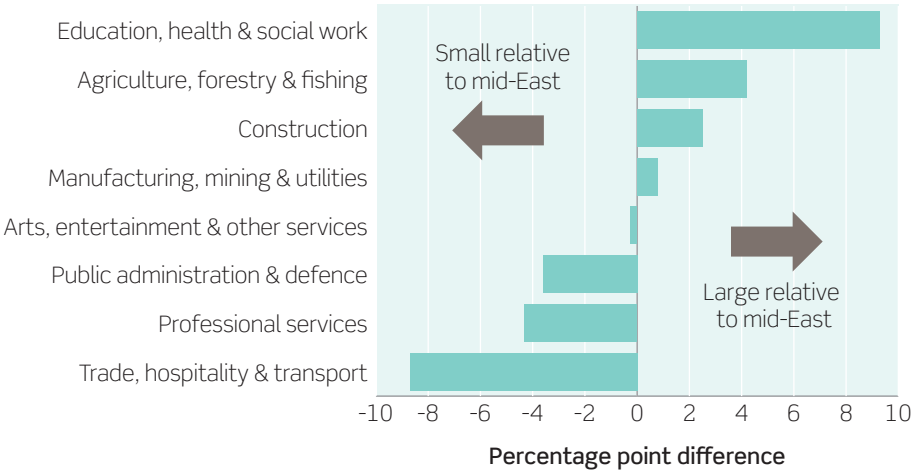
Source: *CSO*

The latest Census in 2016 showed there were over 5,000 people employed within the port area and its hinterland. Meanwhile, there were close to 11,900 residents of the area employed in jobs based either in the local economy or elsewhere. The difference represents the degree of net out-commuting of local people out of the port area to take up employment opportunities elsewhere. Residents therefore benefit to an extent from the relative closeness to Drogheda and the employment opportunities it offers.

A sectoral breakdown of workplace employment within the port area and its hinterland points to the significance of the local seafood sector and industries which depend on population trends for growth. The data shows that workplace employment within the Agriculture, forestry & fishing and Manufacturing, mining & utilities sectors collectively accounted for 26% of total (a share over 8 percentage points higher than the national average).[6] Indeed, both these sectors are relatively strongly concentrated within the local economy in employment terms. This is especially so for Agriculture, forestry & fishing – where its share of workplace employment was over four percentage points higher than the respective share across the mid-East region **(see Fig. 23)**.

4 Defined as a share of the labour force aged 15 years and over.
5 Economic inactivity represents the share of the population aged 15 and over who were neither employed nor looking for employment.
6 Commercial fishing and aquaculture fall within the 'Agriculture, forestry & fishing' sector. Fish processing related activity is classified within the industry grouping of 'Manufacturing, mining & utilities'.

Fig. 23. Employment share differences, Clogherhead vs region, 2016



Source: *Oxford Economics, CSO*

Demographics

The port area and hinterland's population has grown by 4.7% in the five years between 2011 and 2016. Recent population growth has therefore been stronger than the national average (3.8%), but slightly weaker than that experienced across the mid-East region (5.1%). The working age component of the population remains below average at 64%, despite recent strong growth in the number of residents aged 15 to 64.

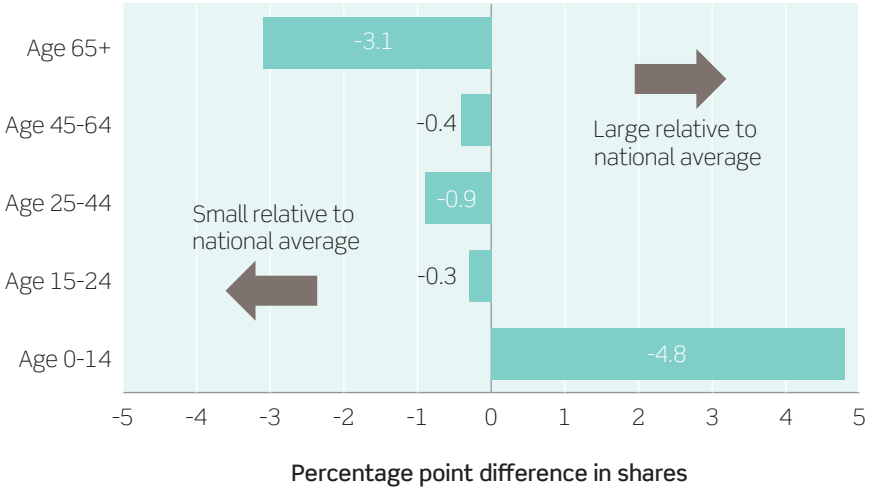
Fig. 24. Population indicators, 2016

	Growth (2011-16)		2016	
	Population	Working age	Population	Working age share
Clogherhead	4.7%	4.0%	29,100	63.9%
Mid-East	5.1%	2.2%	559,800	65.1%
Ireland	**3.8%**	**1.4%**	**4,761,900**	**65.5%**

Source: *CSO*
Note: *Working age is defined as those aged between 15 and 64*

An analysis of port area's population by age cohorts relative to the national picture shows that the distribution is skewed at both the younger and older ends. Those aged 65 and over accounted for close to 10% of all residents – three percentage points below the national average in 2016. Those aged 25-44 were also under-represented within the local population. However, the share of young people under the age of 15 (26%) is somewhat higher than the national equivalent, indicating that recent growth in the working age population is likely to continue into the future.

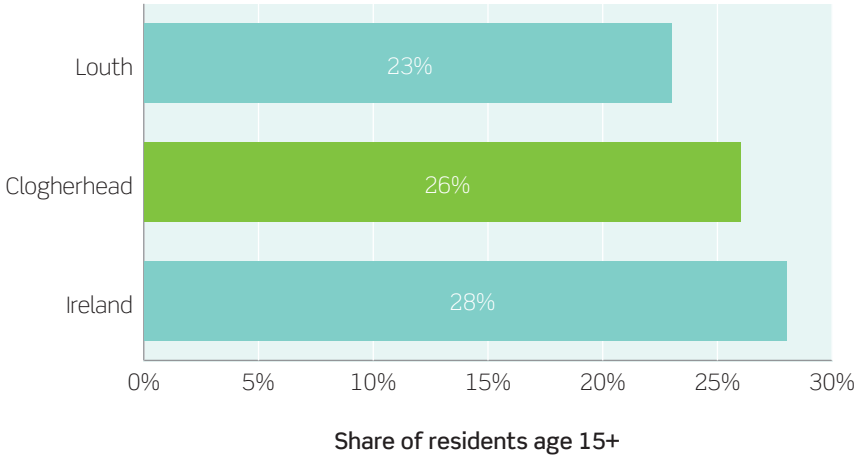
Fig. 25. Age group comparisons, Port area vs Ireland, 2016



Source: *CSO Ireland*

Qualification attainment within the port area tends to be broadly similar to the pattern observed at the national level. Those with no formal qualifications or at most primary level education represented 12% of residents aged 15 and over in 2016. Equally, higher level attainment among the port and it's hinterland's residents was only marginally weaker than the national average. Those educated to degree level or above accounted for 26% of those age 15 and over in Clogherhead, compared to 28% on average across Ireland.

Fig. 26. Degree level or above attainment, 2016



Source: *CSO*

Summary

Sectors which are closely aligned with the seafood sector are important within the Clogherhead economy. Together, Agriculture, forestry & fishing and Manufacturing, mining & utilities (the parent sector of fish processing) account for over a quarter of workplace jobs in the local port economy. The structure of the economy also presents challenges, given the relatively small professional services sector (which is typically the fastest growing in employment terms). Likewise, the local economy has strong concentrations of employment in industries where growth is in part reliant on continued population growth.

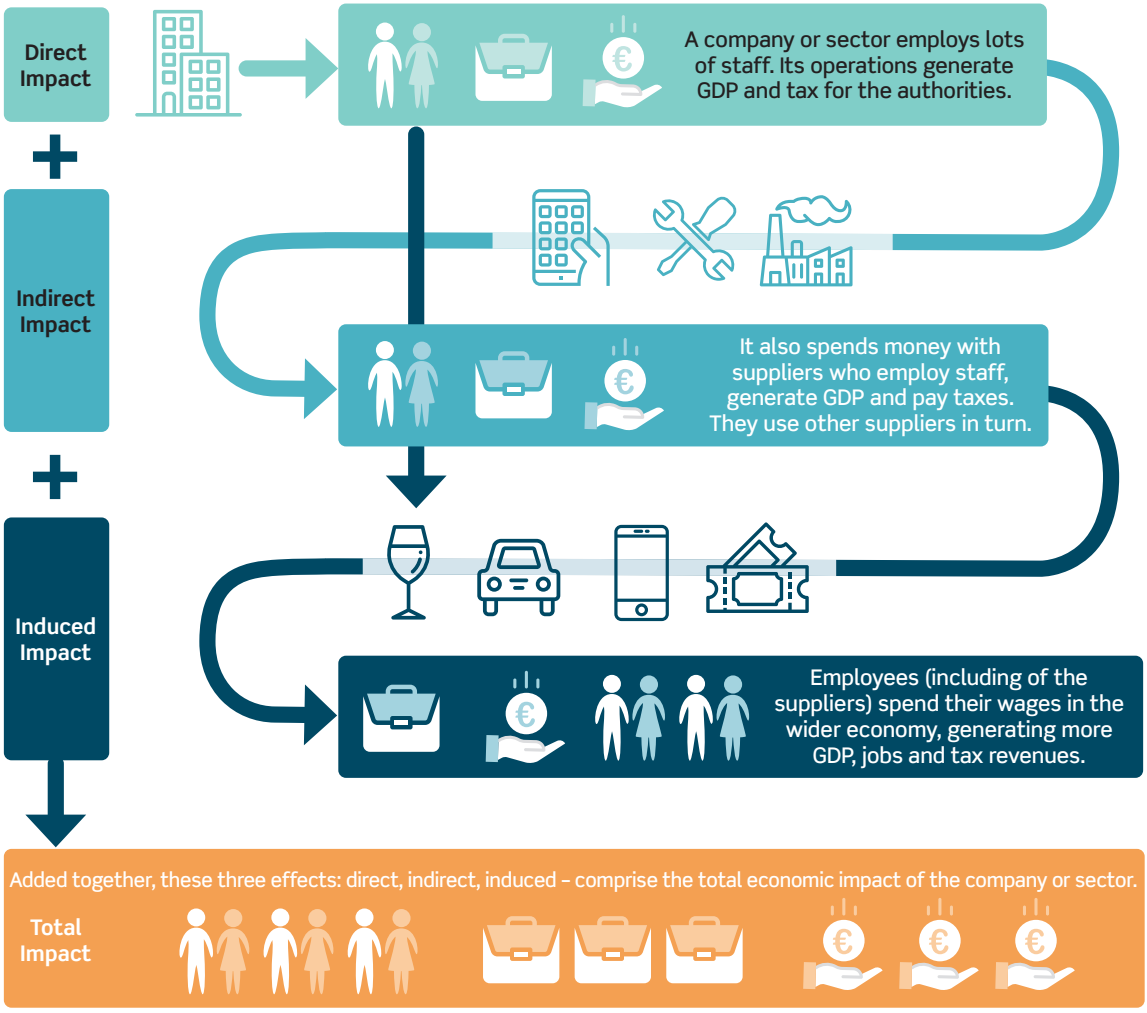
While Clogherhead has a growing working age population, high economic participation and relatively low unemployment rates, local employment opportunities may be more limited outside of these industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. As a result, the seafood sector is likely to continue to play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumers spending it supports. Looking forward, a vibrant and growing local seafood sector will be important for the economic and demographic health of the area.

Appendix 2: Model approach

Understanding economic impact assessments

An economic impact assessment quantifies the total economic benefit created by a sector through a range of different channels. For the seafood sector at the ports this arises in four main ways. The first three are the standard channels through which economic impact is usually quantified: direct operational effects, supply chain effects, and the impact of employees spending their wages in the wider consumer economy. The fourth channel, known as 'catalytic' or 'dynamic' benefits represent the wider benefits that society and/or other industries derive from the original economic activity.

Fig. 27. Overview of economic impact methodology



Our report uses three main metrics to quantify each of the channels by which the seafood sector could contribute to the regional[7] and national economy:

- **Gross value-added** contribution to Gross Domestic Product (GDP)[8]: This measured the value of goods and services produced in an area, industry or sector of an economy and is equal to output minus intermediate consumption;
- **Employment**: Employment is presented in terms of full-time equivalent jobs as defined in the report, the combination of workplace employment by full-time and part-time status; and
- **Wages** is the total value of remuneration offered to the workers associated with the local seafood sector.

All the data used was either provided by BIM (for example recent seafood operator registrations/industry data), the seafood sector survey carried out by Perceptive Insight or published government website data and industry standards from the likes of CSO Ireland and Oxford's own economic databases. Finally, in the absence of data, reasonable assumptions based on best judgement are clearly rationalised in the study. For example, in the absence of port specific data we will use published sources for comparator geographies as a proxy estimates were appropriate.

Estimating the direct economic contribution

The first step was to understand the **direct** activity associated with the local seafood sector at each of the 10 ports in 2018.

The survey

The seafood survey was designed to provide the evidence base from which to estimate the local seafood sector's contribution to the regional/national economy. Responses from the sector were analysed according to common characteristics (sub-sector, turnover band, main port area etc) and cross-referenced with the most recent full snapshot of the local seafood sector population.[9]

Sample estimates were then 'grossed' up to that of the total population. This was done by drawing on the BIM database of the seafood sector population in each port which contained fields on sector and turnover bands. Knowing indicative turnover levels for seafood businesses not captured in the survey, we were able to apply the average ratio of jobs to turnover level in that sector and apply average sectoral wages, etc. In other words, we utilised knowledge of the sectors and turnover of the missing companies and applied the ratios and averages of those covered in the survey to estimate their activity. The resulting total seafood related turnover estimate is then split into the different sectors of the economy ('Agriculture, forestry & fishing' and 'Manufacture of food products').

This turnover figure is essentially the value of output within the local seafood sector and encompasses intermediary demand, wages and profits. Using the sectoral ratios of output to GVA in the Irish input-output tables we estimated the direct sectoral GVA contributions to GDP in the local economy. Both direct employment and gross wages paid within the local port seafood sector are again informed by the survey findings and grossed to the population total based on shared characteristics.

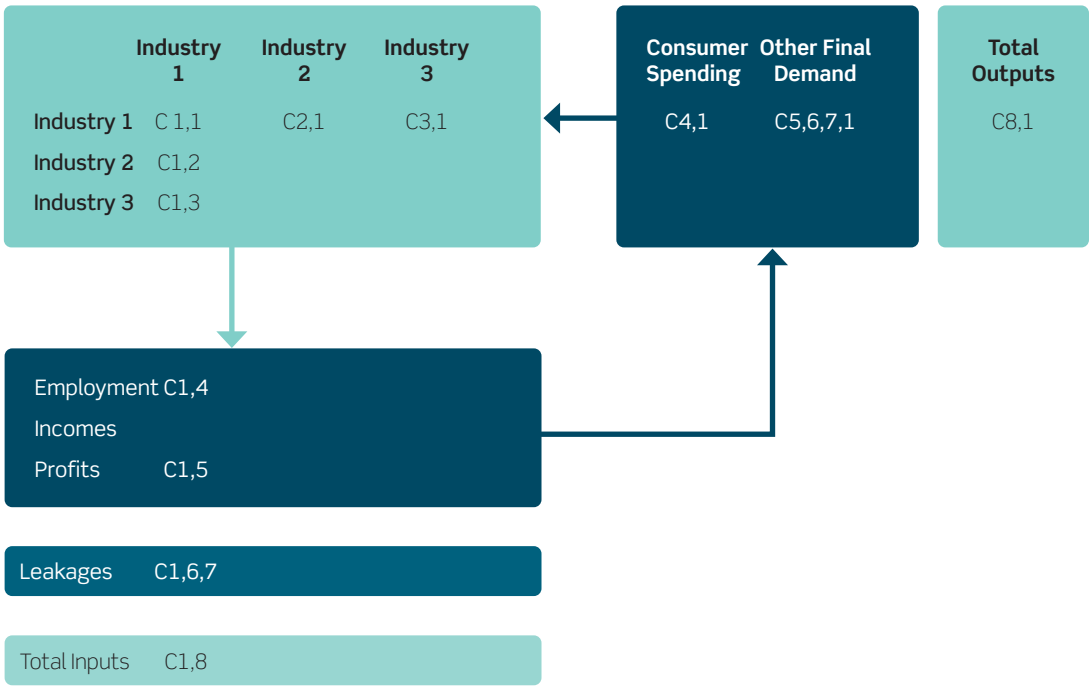
With our estimate of direct output and wages, we then applied sectoral taxation assumptions and calculated the resulting fiscal benefits that would likely be collected by the Revenue Commissioners.

7 Ideally, we would quantify the impacts of the seafood sector on the port area, however, there is not enough published sectoral employment, GDP and wage data. Sufficient data is only available at regional level to produce sub-national impacts.
8 GDP is the main summary indicator of economic activity in Ireland. GDP can be defined as GVA plus taxes on products less subsidies on products. References to economic growth (or when the economy enters recession) typically relate to the rate of change of GDP. All references in this report relate to GVA; also known as GDP at 'basic prices'; and they exclude taxes and subsidies.
9 Provided by BIM and informed by the most recent fishery registrations and activity listings in the aquaculture and processing sectors. Turnover bands were also assigned to the local seafood population based on returns when available, and when not, estimated by BIM based on shared characteristics.

Estimating indirect and induced impacts

To estimate the indirect and induced impacts we have built an input-output model. **Figure 28** presents a stylised version (showing just three sectors for presentation purposes) of our input-output model which is a model that traces how economic activity flows through an economy as one sector makes purchases from another sector.

Fig. 28. Stylised input-output model



We have used the latest Irish input-output tables for the analysis, but have adjusted these in line with academic guidelines (Flegg, A. T. and Tohmo, T. (2013) "Regional input-output tables and the FLQ formula: A case study of Finland") to account for the size and structure of the local economy.[10] The technique involves constructing sub-national input-output models by applying Location Quotients (LQs) and sub-national size adjustments to the standard Ireland input-output tables. The result is that geographies with higher concentrations of industries receiving procurement or household expenditure have larger impacts. In addition, we have used information gathered from the survey to further isolate the procurement spend locally, thereby strengthening the overall modelling assumptions.

MODELLING SUPPLY CHAIN IMPACTS

The survey provided us with information on the size of supply chain spending relative to turnover, its allocation to specific parts of the economy/goods/services and its location (local/national/international). Using this information, we were able to construct a more detailed picture of the first round of supply chain spending than the published input-output tables would otherwise provide.

10 Due to data availability, the local seafood sector's economic impact can only be localised to the regional level (NUTS 3).

We then used the impact model to estimate all the **rounds of supply chain or indirect spending** of the local seafood sector. The input-output tables provide us with an estimate of indirect output by sector. We then convert this output back into sectoral GVA and into sectoral jobs to provide a range of sectoral impact measurements. Applying average sectoral salaries allowed us to estimate the income effect.

The induced impact is economic activity and employment supported by those directly or indirectly employed spending their income on goods and services in the wider economy. This helps to support jobs in the industries that supply these purchases, and typically includes jobs in retail and leisure outlets, companies producing consumer goods and in a range of service industries. Again, our input-output model was used to estimate the induced impacts.

Overcoming double-counting

Throughout the analysis the impact estimates are presented for the core elements of the seafood sector – commercial fishing, aquaculture and fish processing. However, when estimating the total impact of the overall ports seafood sector, simply summing the respective benefits of all three sub-sectors will inevitably over-estimate the indirect and induced and as a result, total impacts. This is because the supply chains of the processing element contain a proportion of the fishing/aquaculture sub-sectors and their supply chains. Therefore, adding everything together would result in the double counting some of the impacts.

We have, therefore, the following approach to calculate total impacts for GVA, employment, wages and tax:

Direct impacts:

- Calculated by summing the direct impacts from the three elements of the seafood sector for GVA, employment and wages.

Indirect impacts:

- For GVA, employment and wages, total indirect impacts are calculated by summing the indirect impacts of processing and a share of the indirect impacts from the fishing and aquaculture sub-sectors (as indicated by survey responses showing the extent to which local processors account for their total sales). The remainder of the fishing/aquaculture sub-sectors' indirect impacts will already be accounted for in the indirect impacts from the processing sub-sector.

Induced impacts:

- For GVA, employment and wages, total induced impacts are calculated by summing the induced impacts of the local processing sector and a share of the induced impacts from the commercial fishing and aquaculture sub-sectors (as indicated by survey responses showing the extent to which local processors account for their total sales). The remainder of the fishing and aquaculture sub-sectors' induced impacts will already be accounted for within the induced impacts from the fish processing sub-sector.


FSC

OXFORD ECONOMICS

Global headquarters
Oxford Economics Ltd
Abbey House
121 St Aldates
Oxford, OX1 1H B
UK
T +44 (0)1865 268900

London
Broadwall House
21 Broadwall
London, SE1 9PL
UK
T +44 (0)203 910 8000

New York
5 Hanover Square, 8th Floor
New York, NY 10004
USA
T +1 (646) 786 1879

Singapore
6 Battery Road
#38-05
Singapore 049909
T +65 6850 0110

E mailbox@oxfordeconomics.com
www.oxfordeconomics.com

Europe, Middle East and Africa
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Tokyo

BIM Ireland's Seafood Development Agency

Irish Sea Fisheries Board
Head Office, Crofton Road,
Dun Laoghaire, Co. Dublin, A96 E5A0

T +353 1 214 4100 | **E** info@bim.ie | **www.bim.ie**