The Economic Impact of the Seafood Sector:
Dunmore East

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Foreword

The Economic Impact of the Seafood Sector: Dunmore East

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 Dunmore East and its hinterland. Dunmore East is an important seafood port in Ireland with high volumes of whitefish landed here and aquaculture produced annually.

Dunmore East is located in the south-east of Ireland a short distance south of Waterford city. The region is characterised as flat to undulating lowlands with agricultural land that is classified as good. Dunmore East is a popular tourist town that is well connected to major urban areas at a distance of 16km to Waterford city, 137km to Cork and 189km to Dublin city via national roads and motorway from Waterford city respectively. Dunmore East has a long tradition of fishing and seafood activity in Ireland and is a major landing port for Irish vessels from all around the Irish coastline. Given the rich agricultural resources of this area, good connectivity and tourism and commuter belt qualities, the seafood sector is an important driver of the local economy after manufacturing, tourism, professional services and construction sectors.

In this report, it is shown that the seafood sector has important multiplier effects in terms of gross value added, employment and wages downstream in the local economy. In total, 5% of the Dunmore East hinterland economy can be attributed to the seafood sector encompassing direct, indirect and induced effects. Direct employment of the seafood economy in the region is 180 with a further 25 full-time employees generated downstream. The sector generates €2.5 million in wages and salaries directly with a further €1 million generated indirectly and through induced effects of the seafood sector at the regional level. Further downstream effects occur outside the region at the national level.

Participation in this survey by seafood producers in Dunmore East was above average for the project with 54% of the target audience responding. Special thanks are owed to all participants in the survey and particularly to Naomi Barlow (Woodstown Bay Shellfish Ltd.) and Myles Mulligan (BIM) for their assistance in this project. 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 Dunmore East economy. In 2018, direct seafood sector activity at the port generated €11.4 million in turnover. Commercial fishing is the largest seafood sub-sector at the port, generating €7.4 million in turnover, followed by aquaculture (€2.9 million) and fish processing (€1.1 million). When translated into GVA, the overall seafood sector makes a €6.2 million direct contribution to the local port economy (4% of local GVA). The sector also supported 180 direct jobs with associated wages of €2.5 million.

In general, seafood firms are typically well-established locally, having operated for more than 10 years, and turnover tends to be relatively stable year-on-year. The survey of local seafood businesses found that their workforce tends to originate from the local area, and seafood sales are largely locally focussed, with a majority of sales made to purchasers within the port hinterland.

Once the indirect and induced effects are included, we estimate that the total economic contribution of the seafood sector at Dunmore East equated to €8.2 million of GVA across the south-east economy in 2018. Furthermore, the local seafood sector is estimated to support 205 jobs across the wider regional economy and generate €1.7 million in tax revenues towards the public accounts.

€6.2m
Direct GVA in 2018
The seafood sector makes a significant contribution within the local port economy.

€8.2m
Total GVA contribution to the South-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, South-East, 2018

Port seafood sector	South-East		
	GVA (€m)	Employment	Wages (€m)
Direct	6.2	180	2.5
Indirect	1.4	15	0.6
Induced	0.7	10	0.4
Total	**8.2**	**205**	**3.5**

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 140 jobs, €2.6 million of wages and €6.7 million of GVA;
- Activity in the aquaculture sub-sector has been estimated to sustain 60 jobs, €1.2 million of wages and €2.6 million of GVA; and
- Activity in the fish processing sub-sector has been estimated to sustain 30 jobs, €0.4 million of wages and €0.8 million of GVA.

Socio-economic characteristics

Sectors which are closely aligned with the seafood sector, especially agriculture, forestry & fishing, are important employers within the Dunmore East economy. This sector, alongside manufacturing, mining & utilities, collectively account for almost a quarter of employment in the local port economy. Working age population growth in the area has been weak by national standards, suggesting that local employment opportunities may be more limited outside of these core industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. Furthermore, the economy has relatively low exposure to faster growing sectors such as the professional services.

As a result, the seafood sector is likely to play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumer 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 its 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 areas is arguably rising.

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

1.2 The port area

Dunmore East port is located on the Co. Waterford coast in the south-east region. In this report, we define the local port economy as the District Electoral Divisions (DED) of Killea 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 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, 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 estimates the direct activity associated with the commercial fishing, aquaculture 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 three 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 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

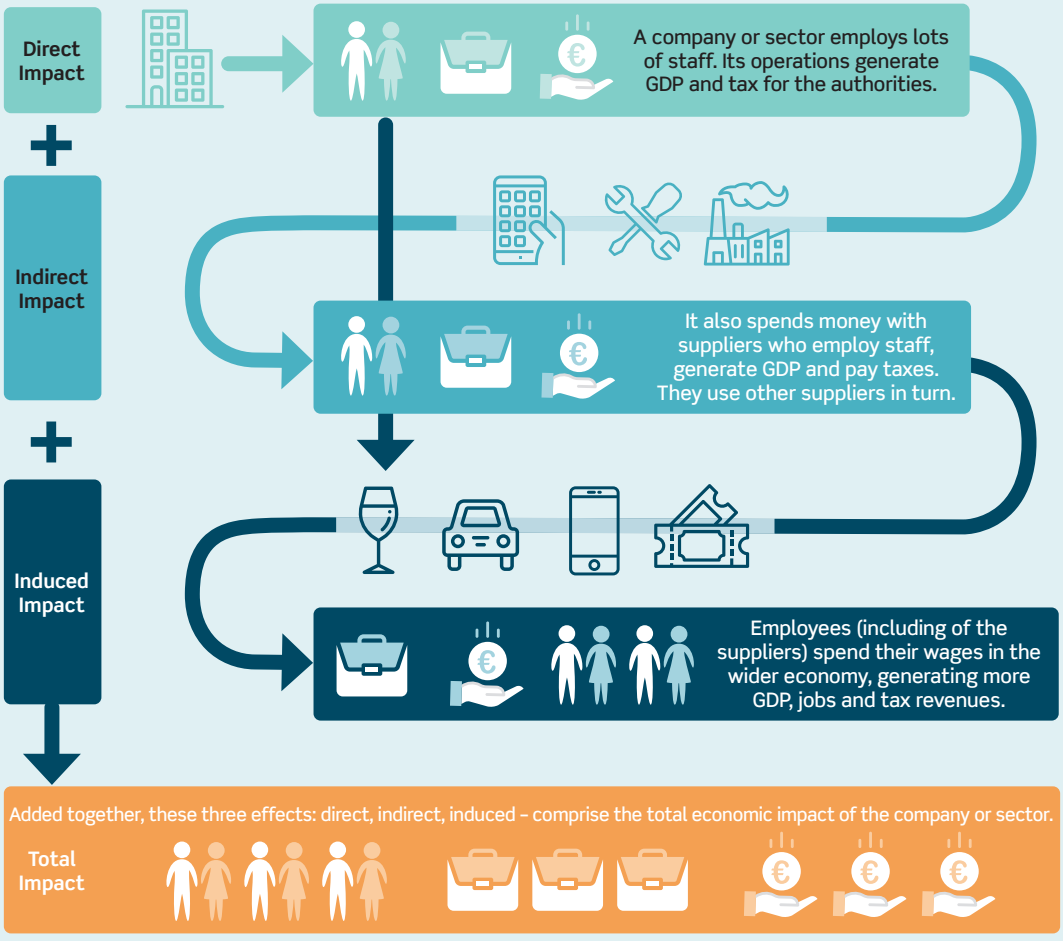
The economic impact of a sector is measured using a standard means of analysis called an economic impact assessment. The report quantifies the three 'core' channels of impact that comprise an organisation/sector's 'economic footprint':

- **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 south-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.

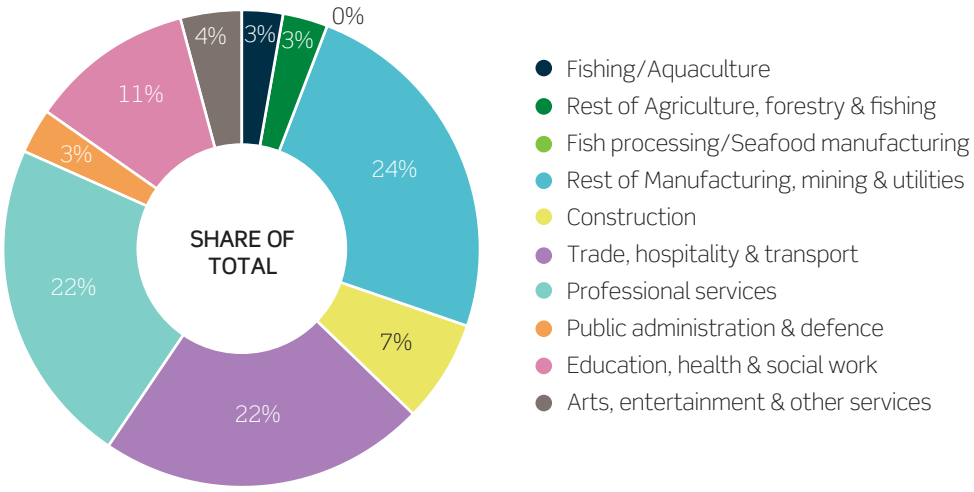
2. The seafood sector at Dunmore East

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 Dunmore East'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 Dunmore East's economy made a GVA contribution to GDP of €165 million in 2018.[2] We estimate that the seafood sector within the port represented €6.2 million of this GVA total. Seafood, therefore, represented 4% of the port economy. The largest sectors in GVA terms were the 'manufacturing, mining & utilities' and 'Professional services' sectors which represented 24% and 22% of the local economy respectively.

Fig. 4. GVA by sector, Dunmore East, 2018



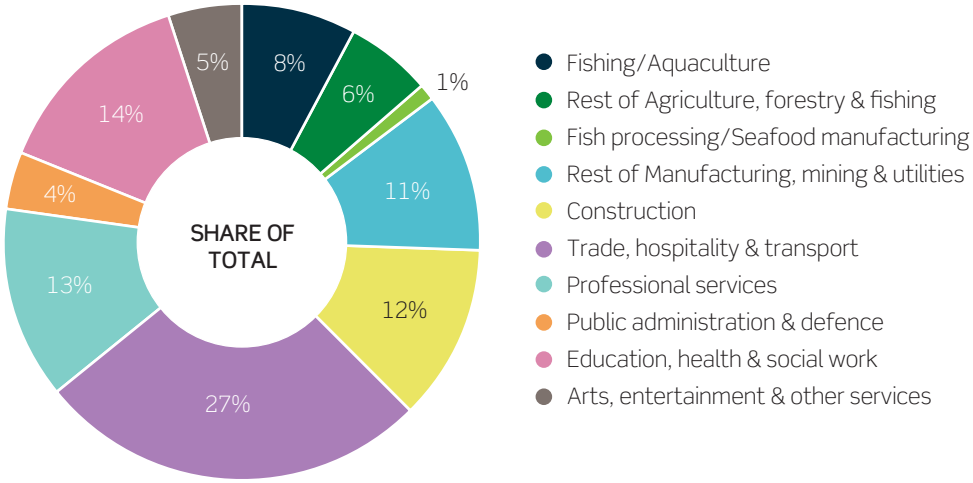
Source: *Oxford Economics, Perceptive Insight, CSO*

In employment terms, seafood is more important within the port economy. Combined commercial fishing, aquaculture and fish processing are estimated to directly sustain approximately 9% of workplace employment across the port area in 2018.[3] Commercial fishing and aquaculture represented close to 60% of local agriculture, forestry & fishing related employment and fish processing accounted for close to a tenth of local manufacturing, mining & 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 its prominence locally. A similar approach is adopted with fish processing in relation to the 'Manufacturing, mining & utilities' sector.

3 The latest available sectoral employment data for the port area economies was for 2016. Therefore, both the GVA and employment estimates shown for the port economies combine this data with the current snapshot of the seafood sector.

Fig. 5. Employment by sector, Dunmore East, 2018



Source: *Oxford Economics, Perceptive Insight, CSO*

2.2 Characteristics of the seafood sector

Commercial fishing forms the largest direct contribution to the seafood sector at Dunmore East. In 2018, it accounted for a majority of turnover in the sector (€7.4 million), ahead of aquaculture (€2.9 million) and fish processing (€1.1 million). Commercial fishing supports a similarly high proportion of jobs, directly employing 110 workers across 57 local seafood businesses.

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

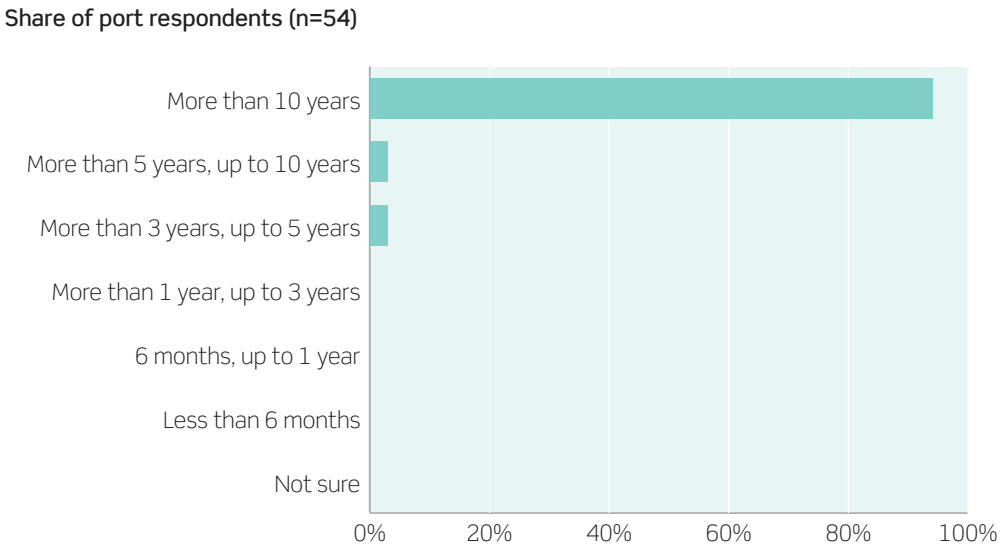
	Turnover (€m)	Jobs	Wages (€m)	Seafood operators
Commercial fishing	7.4	110	1.5	57
Aquaculture	2.9	45	0.7	7
Fish processing	1.1	25	0.2	3
Total	**11.4**	**180**	**2.5**	**67**

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 36 operators in Dunmore East, 54% of the population of local seafood businesses. While the sample size for the port 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. A significant majority (94%) of respondents identified as having operated for more than 10 years in the port area, a rate slightly above the aggregate figure for the ten ports (89%).

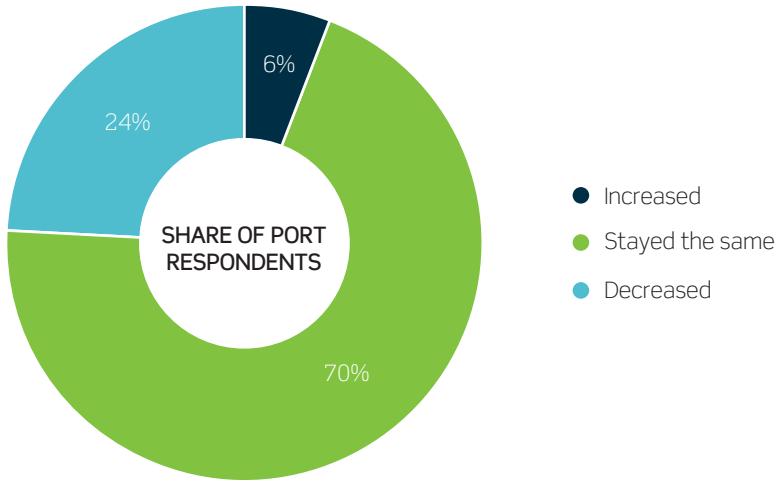
Fig. 7. Seafood sector maturity, Dunmore East, 2018



Source: *Oxford Economics, Perceptive Insight*

The survey also explored the recent performance of firms operating in the seafood sector. Overall, turnover levels have been relatively unchanged over the past 12 months; 70% of respondents indicated that it had neither increased nor decreased over this period, a share slightly below the aggregate rate for all ten ports (72%). However, firms are more likely to have seen turnover decrease than increase. Indeed, the 24% of firms that have seen turnover fall is the highest share of the ten ports included within our survey, while conversely the 6% that have seen it increase is also lowest across the ten ports.

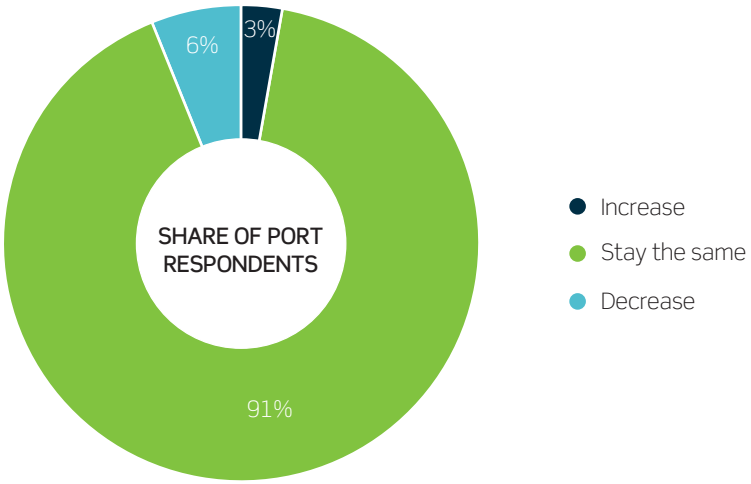
Fig. 8. Changes to turnover in the past 12 months, Dunmore East, 2018



Source: *Oxford Economics, Perceptive Insight*

The outlook for turnover over the next 12 months is somewhat more stable. A greater share of firms expect turnover to remain unchanged over the next 12 months (91%) than saw turnover unchanged within the previous 12 months (70%). Indeed, this share is the joint-highest of the ten ports included in this survey, and 13 percentage points above the overall ports average (78%). Those operators that expect turnover to change are, however, more pessimistic; a greater share (6%) expect it to decrease than increase (3%) over the next year.

Fig. 9. Anticipated changes to turnover, Dunmore East, 2018

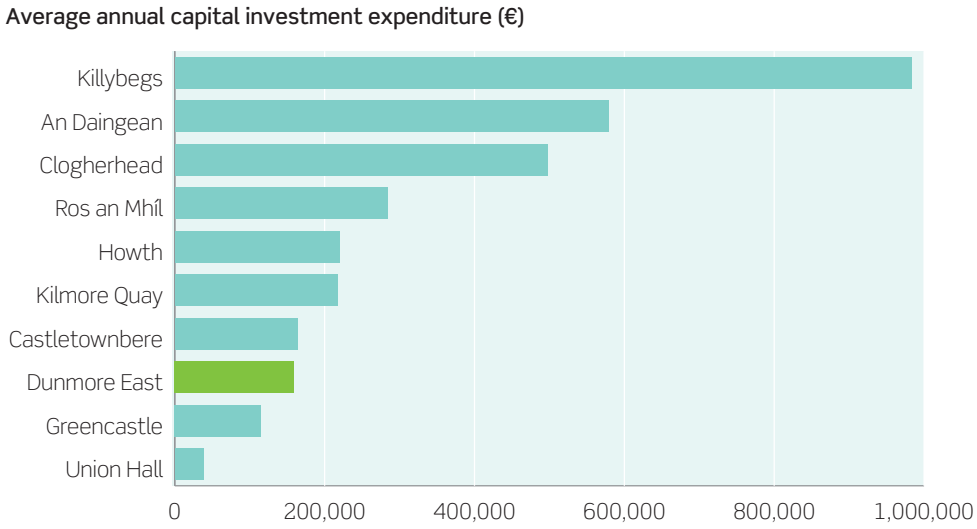


Source: *Oxford Economics, Perceptive Insight*

Improving turnover is often linked to investment: improving the quantity and/or quality of capital available to the workforce can enable improved productivity and turnover. Our survey indicates that just 21% of firms at Dunmore East have spent money on capital investment in the last year, the lowest rate of the ten ports included in our survey, and 12 percentage points below the ports average (33%).

Of those firms that did engage in capital investment, their average spend tended to be relatively low. Respondents at Dunmore East spent on average €159,000 each on capital investment in 2018, under half of the average spend across the ten ports (€389,000).

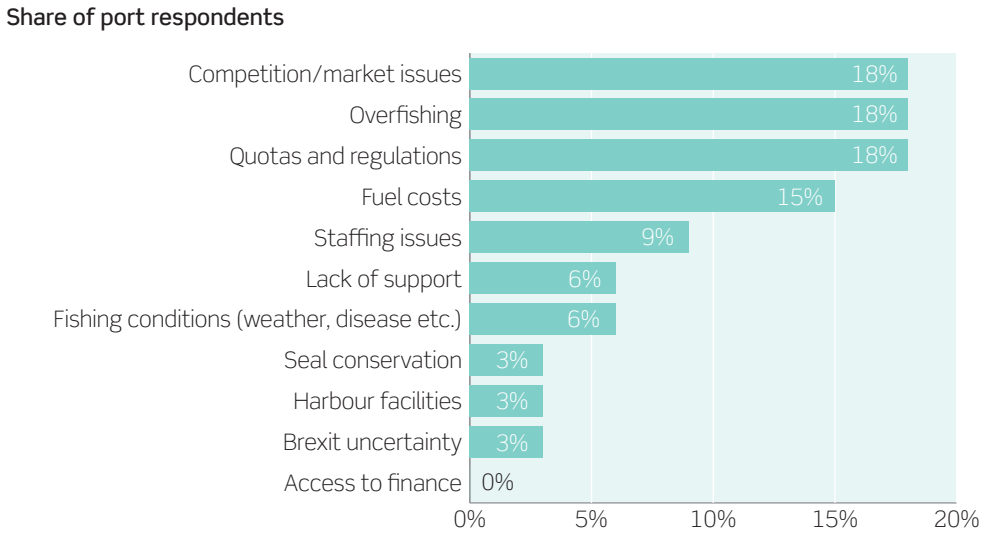
Fig. 10. Average annual capital investment, 2018



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. A broad range of issues were identified by respondents. The three main constraints identified were competition/market issues, overfishing and quotas and regulations, each receiving 18% of responses, followed by fuel costs (15%) and staffing issues (9%). Indeed, of the 11 common themes, only access to finance was not identified by any respondents as the main constraint.

Fig. 11. Main constraint on growth, Dunmore East, 2018



Source: *Oxford Economics, Perceptive Insight*

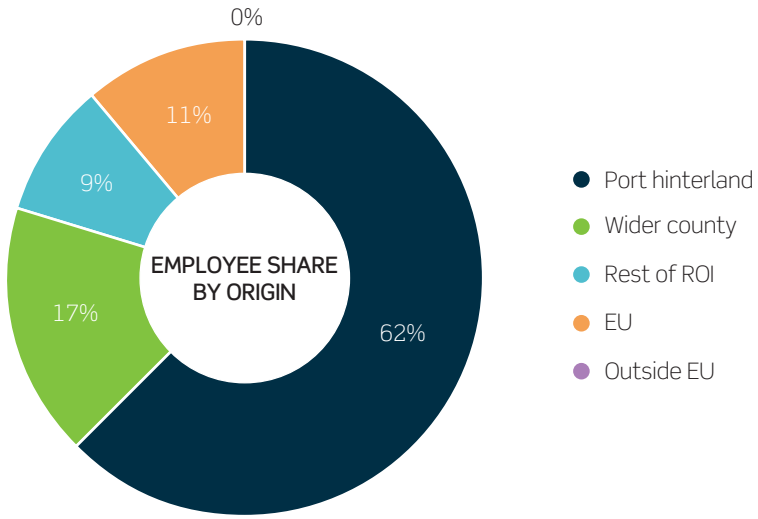
Alongside demonstrating the importance of the seafood sector in providing local job opportunities, our survey also sought to further understand the characteristics of this workforce – namely where the seafood sector's employees originate from. The survey results indicate that 62% of workers in the seafood sector originate from the port hinterland, further highlighting the value of the seafood sector at Dunmore East to the local population.

A further 17% of workers also originate from Co. Waterford, meaning that nearly four-in-five workers originate from the county. Only 11% of workers were foreign nationals, all of which originated from the EU.

The profile of the workforce differs somewhat between the seafood sub-sectors. Our survey found that all workers in commercial fishing activities originate from Co. Waterford, of which 87% were from the port hinterland itself. Conversely, only 59% of workers in aquaculture were also from the county, and 39% from the port hinterland itself.

Given that a majority of the workforce originate from the port hinterland, and its relatively peripheral location, we find that the workforce tends to also live locally. A significant majority of the workforce reside within the port hinterland (96%), while a further 3% live elsewhere in Co. Waterford.

Fig. 12. Origins of the workforce, Dunmore East, 2018

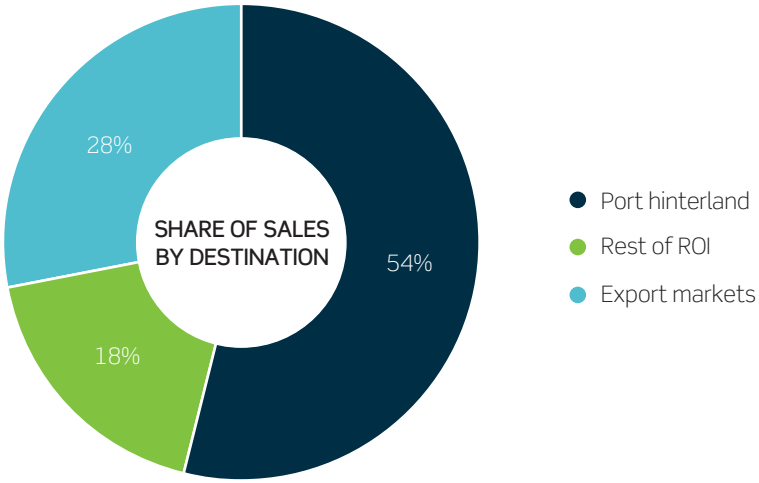


Source: *Oxford Economics, Perceptive Insight*

Our survey also explored the destinations of sales made by seafood sector firms. Activities at Dunmore East tend to be relatively locally-focussed. A majority (54%) of sales are made within the port hinterland area, the highest share of the ten ports surveyed, and 21 percentage points above the aggregate rate across the ports (33%). A further 18% of sales are made elsewhere in Ireland, meaning that just 28% of sales are exported abroad – the second lowest share of all ports included in our survey, and 17 percentage points below the seafood sector as a whole (45%).

The relative concentration of sales to local purchasers is driven by the commercial fishing sub-sector. Three-quarters of sales are made within the port hinterland, while just 8% are exported. By contrast, over half of aquaculture sales (54%) are exports, with just 27% to purchasers within the port hinterland.

Fig. 13. Sales by destination, Dunmore East, 2018



Source: *Oxford Economics, Perceptive Insight*

2.3 Conclusion

In general, seafood firms are typically well-established locally, having operated for more than 10 years, and turnover tends to be relatively stable year-on-year. The survey of local seafood businesses found that their workforce tends to originate from the local area, and seafood sales are largely locally focussed, with a majority of sales made to purchasers within the port hinterland.

3. The impact of seafood's sub-sectors

3.1 Commercial fishing

The largest of Dunmore East's seafood sub-sectors, commercial fishing, supported €6.7 million of GVA across the south-east economy in 2018. Over a third of this total (€2.5 million) was not directly generated by commercial fishing at the port itself but resulted from the activity supported throughout its regional supply chain (€1.7 million) and the consumer spending it generates throughout the regional economy (€0.8 million).

The commercial fishing sub-sector is also estimated to support 140 jobs and €2.6 million in earnings throughout the south-east. Again, a significant share of this total originates within the local commercial fishing sub-sector itself. 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 – relative to the direct activity taking place within the local port economy.

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

Port commercial fishing	South-East		
	GVA (€m)	Employment	Wages (€m)
Direct	4.2	110	1.5
Indirect	1.7	15	0.7
Induced	0.8	10	0.5
Total	**6.7**	**140**	**2.6**

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

The Agricultural sector accounted for almost two-thirds of the total GVA generated by commercial fishing activities, equivalent to €4.3 million in 2018. This sector's overall GVA benefit is only slightly above the direct contribution (€4.2 million), implying that there are relatively few indirect or induced benefits that feed back into the Agriculture, forestry & fishing sector. It however remains the main beneficiary in employment terms, supporting 115 jobs in 2018, or 81% of the total across the region.

Of the remaining sectors, the wholesale & retail sector received the largest GVA impact (€0.9 million) – linked largely to commercial fishing's supply chain spending and the induced consumer spending within the south-east economy – while manufacturing (€0.5 million) receives the next largest benefit, as a result of both local spending and its position within commercial fishing's wider supply chain.

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

Ports commercial fishing	South-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	4.3	115	1.6
Mining & quarrying	0.0	0	0.0
Manufacturing	0.5	<5	0.1
Electricity, gas, steam	0.0	0	0.0
Water supply	0.0	0	0.0
Construction	0.0	0	0.0
Wholesale & retail	0.9	15	0.5
Transportation & storage	0.1	<5	0.0
Accommodation & food	0.1	5	0.1
Information & communications	0.0	0	0.0
Financial & insurance	0.1	<5	0.0
Real estate	0.3	<5	0.1
Professional, scientific & technical	0.2	<5	0.1
Administration & support	0.0	0	0.0
Public administration	0.0	0	0.0
Education	0.0	<5	0.0
Human health	0.1	<5	0.0
Arts, entertainment & recreation	0.0	0	0.0
Other service activities	0.0	<5	0.0
Total	**6.7**	**140**	**2.6**

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

3.2 Aquaculture

Dunmore East's second largest seafood sub-sector supported €2.6 million of GVA across the south-east in 2018. This total represents not only the sub-sector's direct operations within the port (€1.5 million), but also the indirect activity it supports throughout the regional supply chain and the induced spending these combined activities create. In addition, local aquaculture is estimated to support 55 jobs throughout the region and generate €1.2 million in associated earnings. Aquaculture, therefore, has the strongest employment (1.3) and GVA (1.7) multipliers among the three seafood related sub-sectors, with every three direct jobs helping to sustain an additional job within the south-east.

Fig. 16. Benefits of the aquaculture sub-sector, South-East, 2018

Port aquaculture	South-East		
	GVA (€m)	Employment	Wages (€m)
Direct	1.5	45	0.7
Indirect	0.7	5	0.3
Induced	0.4	5	0.2
Total	**2.6**	**55**	**1.2**

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

Employment supported by aquaculture activities at the port is almost entirely concentrated in the agriculture, forestry & fishing sector. This sector alone is the recipient of 80% of overall employment benefit (45 jobs). To a lesser extent agriculture, forestry & fishing also accounts for a significant share of the wage impacts – 62%, or €0.8 million – and accounts for 60% of the total GVA impact (€1.6 million). Much of this variation can be explained by differences in sectoral productivities and average wages.

Outside of the agriculture, forestry & fishing sector, most of the remaining benefits funnelled into 'wholesale & retail'. Local aquaculture activity supported a GVA contribution of €0.3 million within the south-east's wholesale & retail sector – linked largely to the local seafood producers spending patterns within the south-east economy. After this, the remaining GVA benefits were concentrated within the manufacturing and Real estate sectors, collectively experiencing a €0.3 million GVA benefit.

Fig. 17. Total benefits of aquaculture by sector, South East, 2018

Port aquaculture	South East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	1.6	45	0.8
Mining & quarrying	0.0	0	0.0
Manufacturing	0.2	<5	0.0
Electricity, gas, steam	0.0	0	0.0
Water supply	0.0	0	0.0
Construction	0.0	0	0.0
Wholesale & retail	0.3	5	0.2
Transportation & storage	0.1	<5	0.0
Accommodation & food	0.0	<5	0.0
Information & communications	0.0	0	0.0
Financial & insurance	0.1	0	0.0
Real estate	0.2	<5	0.1
Professional, scientific & technical	0.1	<5	0.0
Administration & support	0.0	0	0.0
Public administration	0.0	0	0.0
Education	0.0	0	0.0
Human health	0.0	0	0.0
Arts, entertainment & recreation	0.0	0	0.0
Other service activities	0.0	0	0.0
Total	**2.6**	**55**	**1.2**

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

3.3 Fish processing

The fish processing sub-sector – the smallest of Dunmore East's seafood components – supported approximately 30 jobs, €0.8 million of GVA and €0.4 million in wages across the south-east in 2018.

The regional supply chain that supports Dunmore East's fish processing industry tend to be in higher-productivity activities. Indeed, each indirect job on average produced €80,300 of GVA in 2018, over three-times more than the average of those directly employed at the port (€20,800). Induced effects are influenced by consumer spending patterns and as a result are usually concentrated in retail and hospitality-based sectors. Consequently, induced GVA per job is slightly weaker than the indirect impacts.

Fig. 18. Benefits of the fish processing sub-sector, South-East, 2018

Port fish processing	South-East		
	GVA (€m)	Employment	Wages (€m)
Direct	0.5	25	0.2
Indirect	0.2	2	0.1
Induced	0.1	2	0.1
Total	**0.8**	**30**	**0.4**

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

The south-east's manufacturing sector experienced the strongest benefits from the fish processing activity based at Dunmore East. In 2018, it generated €0.5 million of GVA, equivalent to 65% of the regional total, and approximately 25 jobs. Outside of this, the wholesale & retail sector was the only other sector to experience a GVA benefit of more than €50,000.

Fig. 19. Total benefits of fish processing by sector, South-East, 2018

Port fish processing	South-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	0.0	<5	0.0
Mining & quarrying	0.0	0	0.0
Manufacturing	0.5	25	0.3
Electricity, gas, steam	0.0	0	0.0
Water supply	0.0	0	0.0
Construction	0.0	0	0.0
Wholesale & retail	0.1	<5	0.0
Transportation & storage	0.1	<5	0.0
Accommodation & food	0.0	0	0.0
Information & communications	0.0	0	0.0
Financial & insurance	0.0	0	0.0
Real estate	0.0	0	0.0
Professional, scientific & technical	0.0	0	0.0
Administration & support	0.0	0	0.0
Public administration	0.0	0	0.0
Education	0.0	0	0.0
Human health	0.0	0	0.0
Arts, entertainment & recreation	0.0	0	0.0
Other service activities	0.0	0	0.0
Total	**0.8**	**30**	**0.4**

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

4. Total impact of the overall port seafood sector

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 all three elements (commercial fishing, aquaculture 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/aquaculture sub-sectors and their 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.

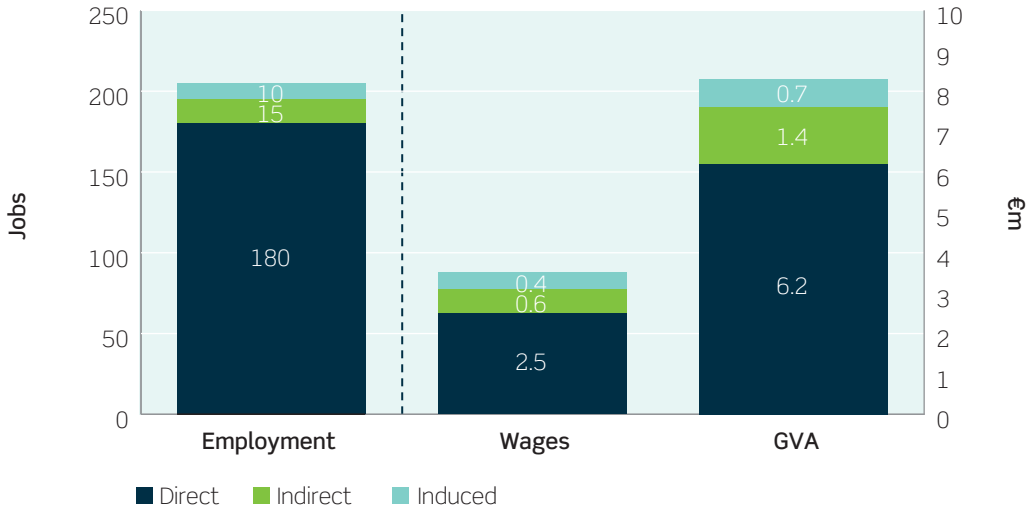
Indirect and induced impacts

- 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 60% and 43% share of the indirect and induced impacts from the respective aquaculture and commercial fishing sub-sectors (as information from the survey interviewees suggest that exports and domestic sales outside the port areas own processors account for 60% and 43% of the respective aquaculture and fishing production). The remainder of the commercial fishing/aquaculture sub-sectors' 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 Dunmore East contributed €8.2 million of GVA to the south-east economy in 2018. The seafood sector supported approximately 205 jobs across the region, generating €3.5 million in associated earnings.

Fig. 20. Benefits of the seafood sector, South-East, 2018



Source: *Oxford Economics, Perceptive Insight*

Just over a quarter of seafood's GVA impact (€2.1 million) is generated either within the sector's supply chain (€1.4 million) or through additional induced spending that results from the employment supported by this sector and within its supply chain (€0.7 million).

Fig. 21. Total seafood sector benefits, South-East, 2018

Port seafood sector	South-East		
	GVA (€m)	Employment	Wages (€m)
Direct	6.2	180	2.5
Indirect	1.4	15	0.6
Induced	0.7	10	0.4
Total	**8.2**	**205**	**3.5**

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

Given the predominance of the commercial fishing and aquaculture elements of the local seafood sector, the agriculture, forestry & fishing sector accrue most of the benefits. This sector alone is estimated to account for €5.8 million of the seafood's total GVA impact across the south-east in 2018, equivalent to just over 70% of the regional total. This sector also accounts for a dominant share of employment benefits; supporting 160 jobs in this sector, or 78% of the total employment contribution. Unsurprisingly, the Agriculture, forestry & fishing sector therefore, attracts the majority of the resulting wage benefits (€2.3 million).

However, the manufacturing sector was the next largest beneficiary from Dunmore East's seafood sector, largely due to its fish processing sub-sector. The port's seafood sector generated €0.8 million in manufacturing GVA and supported 25 jobs throughout the south-east economy. In GVA terms, this was only slightly stronger than the impact within the wholesale & retail sector, which had a GVA benefit of approximately €0.6 million.

Fig. 22. Total benefits by sector, South-East, 2018

Port seafood sector	South-East		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	5.8	160	2.3
Mining & quarrying	0.0	0	0.0
Manufacturing	0.8	25	0.3
Electricity, gas, steam	0.0	0	0.0
Water supply	0.0	0	0.0
Construction	0.0	0	0.0
Wholesale & retail	0.6	10	0.3
Transportation & storage	0.1	<5	0.1
Accommodation & food	0.1	<5	0.1
Information & communications	0.0	0	0.0
Financial & insurance	0.1	<5	0.0
Real estate	0.3	<5	0.1
Professional, scientific & technical	0.2	<5	0.1
Administration & support	0.0	0	0.0
Public administration	0.0	0	0.0
Education	0.0	<5	0.0
Human health	0.1	<5	0.0
Arts, entertainment & recreation	0.0	0	0.0
Other service activities	0.0	<5	0.0
Total	**8.2**	**205**	**3.5**

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 the port seafood sector's direct tax contribution equated to €1.1 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 contribution of €0.1 million. 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 €0.4 million in tax revenue.

Therefore, in total, Dunmore East's seafood sector is estimated to have supported €1.7 million in fiscal benefits in 2018. This total was made up of €1.2 million in employment/labour related tax, €0.2 million in corporation tax, €0.3 million in taxation associated with the spending of wages. Net taxes on production and sectoral input purchases are estimated to net each other off.[4]

4 Net tax position refers to taxes less subsidies.

Fig. 23. Fiscal impacts 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	0.8	0.1	-0.1	0.0	0.0
Mining & quarrying	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.3	0.0	0.0	0.0	0.2
Electricity, gas, steam	0.0	0.0	0.0	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0
Transportation & storage	0.0	0.0	0.0	0.0	0.0
Accommodation & food	0.0	0.0	0.0	0.0	0.0
Information & communications	0.0	0.0	0.0	0.0	0.0
Financial & insurance	0.0	0.0	0.0	0.0	0.0
Real estate	0.0	0.0	0.0	0.0	0.0
Professional, scientific & technical	0.0	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	0.0	0.0	0.0	0.0	0.0
Human health	0.0	0.0	0.0	0.0	0.0
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	**1.2**	**0.2**	**-0.1**	**0.1**	**0.3**

Source: *Oxford Economics, Perceptive Insight, CSO*

5. Conclusions

5.1 The seafood sector in Dunmore East

The seafood sector makes an important contribution to the Dunmore East economy. In 2018, the direct seafood sector at the port generated €11.4 million in turnover, supporting 180 direct jobs and represented 4% of the local port economy in GVA terms. Commercial fishing is the largest seafood sub-sector at the port, generating €7.4 million in turnover, followed by aquaculture (€2.9 million) and commercial fishing (€1.1 million). When translated into GVA, the overall seafood sector makes a €6.2 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. While relatively few firms in Dunmore East invested in capital last year, those that did, tended to spend less than elsewhere in Ireland. The workforce tends to originate from the local area, and the end-market for seafood sales tends to be locally focussed, with a majority of sales made to purchasers within the port hinterland.

5.2 The commercial fishing sub-sector is the main contributor

The commercial fishing sub-sector makes the strongest contribution to the south-east economy. In 2018, it alone generated €6.7 million of GVA, of which €2.5 million is linked to indirect (€1.7 million) and induced (€0.8 million) effects. The commercial fishing sub-sector is estimated to provide benefits of the following size:

- 110 direct jobs and €1.5 million of wages, producing €4.2 million of GVA;
- 15 indirect jobs and €0.7 million of wages, producing €1.7 million of GVA; and
- 10 induced jobs and €0.5 million of wages, producing €0.8 million of GVA.

5.3 Though the remaining components remain significant

Although the aquaculture sub-sector's economic footprint is smaller than that of the local commercial fishing sector, its employment multiplier was the strongest of the three seafood sub-sectors. Accordingly, our analysis shows the economic impact of the aquaculture element was of the following size in 2018:

- 45 direct jobs and €0.7 million of wages, producing €1.5 million of GVA;
- 5 indirect jobs and €0.3 million of wages, producing €0.7 million of GVA; and
- 5 induced jobs and €0.2 million of wages, producing €0.4 million of GVA.

Furthermore, our analysis shows that the economic impact of the port's fish processing sub-sector equates to the following benefits across the south-east economy:

- 25 direct jobs and €0.25 million of wages, producing €0.48 million of GVA;
- 2 indirect jobs and €0.09 million of wages, producing €0.20 million of GVA; and
- 2 induced jobs and €0.07 million of wages, producing €0.13 million of GVA.

Therefore, we estimate that the port's collective seafood sector supported 205 jobs, €3.5 million in wages and €8.2 million in GVA within the regional economy in 2018. This activity was enough to sustain €1.7 million in tax revenues towards the public accounts.

5.4 Seafood supporting peripheral economies

Sectors which are closely aligned with the seafood sector, especially agriculture, forestry & fishing, are important employers within the Dunmore East economy. This sector, alongside manufacturing, mining & utilities, collectively account for almost a quarter of employment in the local port economy. Working age population growth in the area has been weak by national standards, suggesting that local employment opportunities may be more limited outside of these core industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. Furthermore, the economy has relatively low exposure to faster growing sectors such as the professional services.

As a result, the seafood sector is likely to be play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumer 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: Dunmore East's economic challenges

Economic activity and structure

The latest available data indicates that Dunmore East's labour market is underperforming the nation overall. The local unemployment rate within the port area and its hinterland was relatively high at 13.6% in 2016, compared to 12.9% across Ireland.[5] Equally, the proportion of those aged 15 and over in employment was below average at 50.2%, compared to the national average of 53.3% (see **Fig. 24**). Furthermore, Census data reveals that the economic inactivity rate[6] among those residents aged 15 and over was close to 42%, higher than both the regional (40.5%) and Irish averages (38.8%) in 2016.

Fig. 24. Headline economic indicator comparisons, 2016

	Unemployment rate	Employment rate	Economic inactivity
Dunmore East	13.6%	50.2%	41.9%
South-East	15.4%	50.3%	40.5%
Ireland	**12.9%**	**53.3%**	**38.8%**

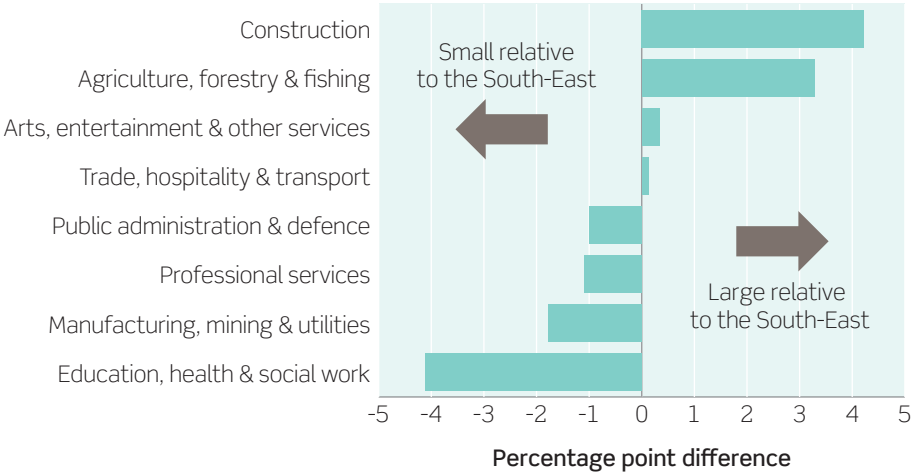
Source: *CSO*

The latest Census in 2016 showed there were close to 2,100 people employed within the port area and its hinterland. Meanwhile, there were over 6,300 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. Significant net-outflows of commuters suggest that employment opportunities are more limited within the local economy.

A sectoral breakdown of workplace employment within the port area and its hinterland does show that the local seafood sector is significant to employment. The data shows that the Agriculture, forestry & fishing and manufacturing, mining & utilities sectors collectively accounted for almost a quarter of total workplace employment.[7] Although manufacturing's share of workplace employment lags the south-east region, the employment share for Agriculture, forestry & fishing was close to four percentage points higher (see **Fig. 25**).

5 Defined as a share of the labour force aged 15 years and over.
6 Economic inactivity represents the share of the population aged 15 and over who were neither employed nor looking for employment.
7 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. 25. Employment share differences, Dunmore East vs region, 2016



Source: *Oxford Economics, CSO*

Demographics

The port area and hinterland's population has grown by 2.5% in the five years between 2011 and 2016. Recent population growth has therefore been stronger than the broader region (1.9%) but underperformed the national average (3.8%). The working age population share (63%) remains relatively low compared to both the regional and national averages. Linked to this, Dunmore East has seen relatively weak growth in its working age population between Census periods, with the number of residents aged 15 to 64 increasing by 1%, compared to 1.4 nationally.

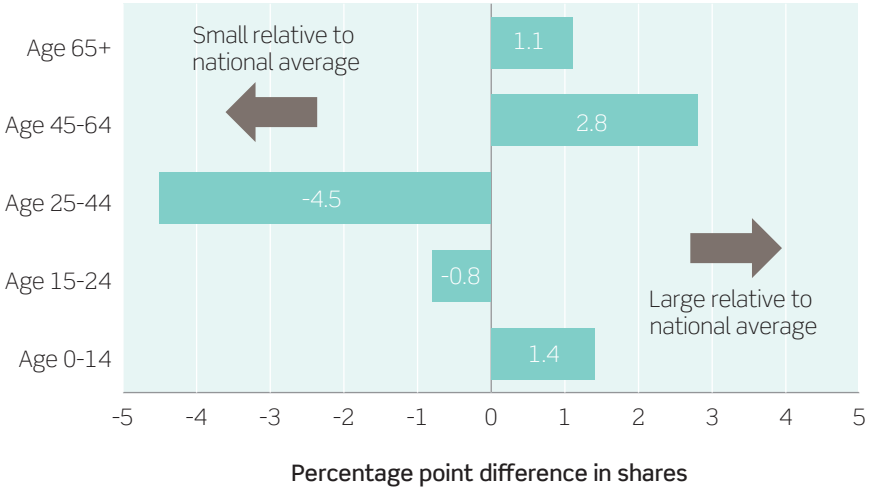
Fig. 26. Population indicators, 2016

	Growth (2011-16)		2016	
	Population	Working age	Population	Working age share
Dunmore East	2.5%	1.0%	16,500	63.0%
South-East	1.9%	-0.8%	508,700	64.0%
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 the port area's population by age cohort relative to the national picture shows that the distribution is skewed at both the younger working age and older working age ends. Those aged 45-64 accounted for over 26 percent of the local population – a share over 2.8 percentage points above the national average in 2016. However, younger working age people (aged 25-44) were underrepresented significantly within the local population.

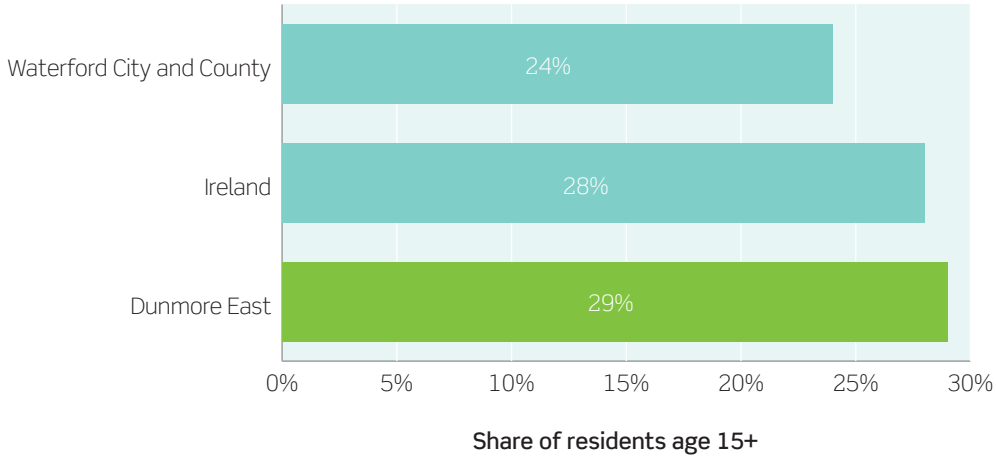
Fig. 27. Age group comparisons, Port area vs Ireland, 2016



Source: *CSO Ireland*

Qualification attainment data within the port area tends to show that working age residents are better educated than both the region and Ireland overall. Those with no formal qualifications or at most primary level education represented only 9% of residents aged 15 and over in 2016, compared to 12% across Ireland. Similarly, the higher level attainment among the port hinterland's residents was stronger than the national average. Those educated to degree level or above accounted for 29% of those aged 15 and over in Dunmore East, compared to 28 percent on average across Ireland.

Fig. 28. Degree level or above attainment, 2016



Source: *CSO*

Summary

Sectors which are closely aligned with the seafood sector, especially agriculture, forestry & fishing, are important employers within the Dunmore East economy. This sector, alongside manufacturing, mining & utilities, collectively account for almost a quarter of employment in the local port economy. Working age population growth in the area has been weak by national standards, suggesting that local employment opportunities may be more limited outside of these core industries. Indeed, there is a large degree of net out-commuting of residents elsewhere to work. Furthermore, the economy has relatively low exposure to faster growing sectors such as the professional services.

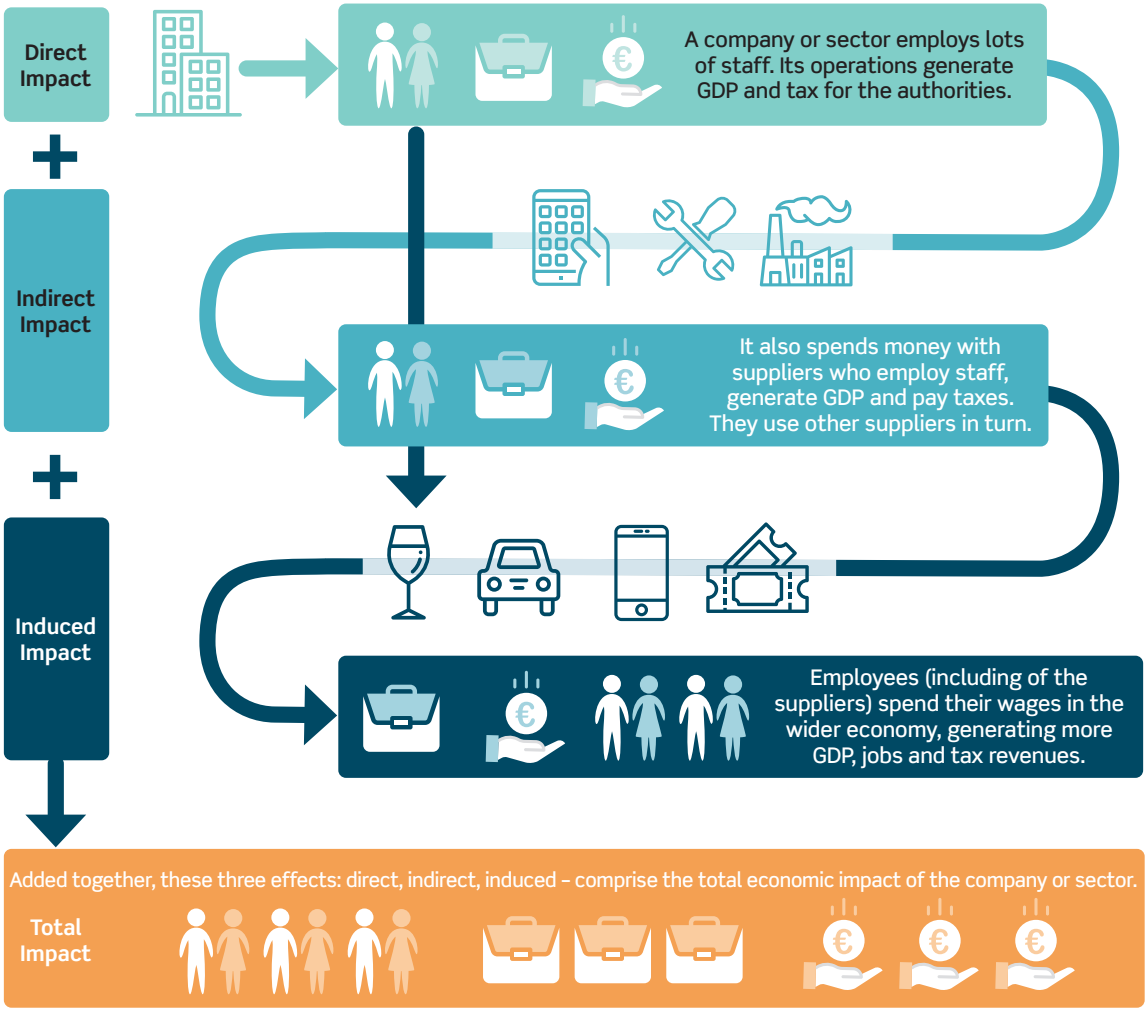
As a result, the seafood sector is likely to be play a significant role in the local economy through its provision of direct jobs, supply chain spending in local businesses and the consumer spending it supports. Looking forward, a vibrant and growing local seafood sector will be important for the economic 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. 29. 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[8] and national economy:

- **Gross value-added** contribution to Gross Domestic Product (GDP)[9]: 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** 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.[10]

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 ('Agri, 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.

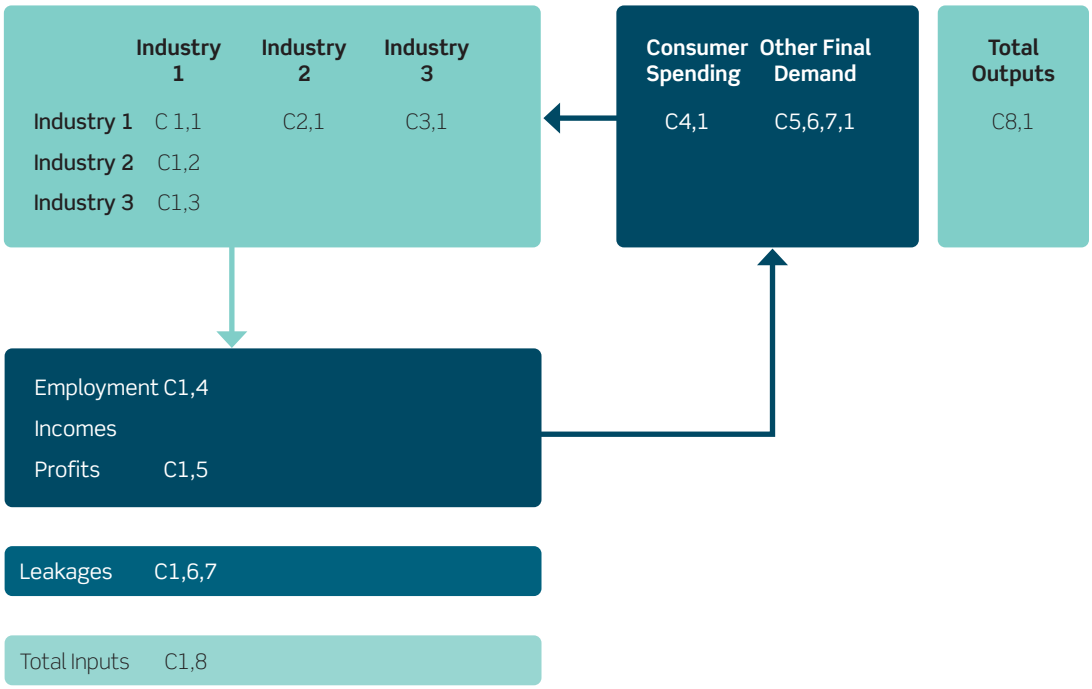
With our estimate of direct output and wages, we then applied sectoral taxation assumptions and calculated the resulting fiscal benefits that would likely be collected by the Revenue Commissioners.

8 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.
9 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.
10 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 30** 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. 30. 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.[11] 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.

11 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.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